City of Philadelphia
Department of Public Health
Air Management Services

Title V/State Operating Permit No. OP20-000052

Philadelphia Energy Solutions Refining and Marketing LLC/ Former Refinery

NorthStar Contracting Group, Inc.

3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: XXX
Effective Date: XXX
Expiration Date: XXXX

DRAFT 11/18/2021

City of Philadelphia
Department of Public Health
Air Management Services

Effective Date: XXXX

Expiration Date: XXXX

REPLACES PERMIT NO. V06-016 AND OP20-000051

SECTION A. SOURCE IDENTIFICATION

In accordance with the provisions of the Pennsylvania Code Title 25, Philadelphia Code Title III, and Air Management Regulation (AMR) XIII, the Permittee (Permittee) identified below is authorized by Philadelphia Air Management Services (AMS) to operate the air emission source(s) listed in Table A-1. This facility is subject to all terms and conditions specified in this permit. Nothing in this permit relieves the Permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

Facility:	Philadelphia Energy Solutions Refining and Marketing LLC (Former Refinery)
Operator:	Northstar Contracting Group, Inc.
Owner:	Philadelphia Energy Solutions Refining and Marketing LLC
Location:	3144 Passyunk Avenue, Philadelphia, PA 19145
Mailing Address:	Same
SIC Code(s):	1795
Plant ID:	01501
Facility Contact:	Robert J. Armstrong
Phone:	(440) 228-1524
	rarmstrong@northstar.com
Permit Contact:	Robert J. Armstrong
Phone:	(440) 228-1524
Responsible Official:	Gary Bowman
Title:	President

Edward Wiener, Chief of Source Registration _____ Date _____

TABLE A1-FACILITY INVENTORY LIST

ID Group	Source Name	Capacity	Fuel/Material^	Construction Date

Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP

AMR V Section XIII A.]

Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb

P-135 (GP)	T-767, IFR	>40M Gal	Recovered Oil	1992
P-159 (GP)	T-1086	>40M Gal	Spent caustic	1954
P-160 (GP)	T-1087	>40M Gal	Spent caustic	1954
P-174 (GP)	T-1007	>40M Gal	Oily Wastewater	1990
P-012 (GP)	T-272, IFR	>40M Gal	Recovered Oil	1971

Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent)

P-006 (GP)	T-228, EFR		Stormwater/Process Water	1991
P-155 (GP)	T-844	>40M Gal	#2 sep. water	1976
P-162 (GP)	T-1136	>40M Gal	#4 sep. water	1976
P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	>40M Gal	Recovered Oil	1981
P-546 (PB)	Tank #191, EFR	>40M Gal	Recovered Oil	1958
P-579 (PB)	Tank #826, EFR	>40M Gal	Crude Oil	2002
P-587 (PB)	Tank #840, EFR	>40M Gal	Crude Oil	1953
P-588 (PB)	Tank #841, EFR	>40M Gal	Crude Oil	1953
P-590 (PB)	Tank #843, EFR	>40M Gal	Crude Oil	1954
P-601 (PB)	Tank #883, EFR	>40M Gal	Crude Oil	1961

P-624 (PB)	Tank # 7300, EFR	NA	Stormwater/Process Water	1992
P-627 (PB)	Tank #7308, EFR	NA	Stormwater/Process Water	1972

Group 15A – Petroleum Liquids Storage Tanks

P-032 (GP)	T-273, Fixed Roof	>40M Gal	Resid	1941
P-036 (GP)	T-282, Fixed Roof	>40M Gal	Gas Oil or Cat Charge Stock	1947
P-037 (GP)	T-284, Fixed Roof	>40M Gal	Gas Oil or Cat Charge Stock	1948
P-039 (GP)	T-494, Fixed Roof	>40M Gal	Main Fract Bottoms	1965
P-144 (GP)	T-219	>40M Gal	Light Cycle Oil	1925
P-147 (GP)	T-227	>40M Gal	Main Fract Bottoms	1954
P-153 (GP)	T-794	>40M Gal	(Plant TEG) – tetra ethylene glycol	1990
P-154 (GP)	T-796	16.8M Gal	Fresh TEG	1962
P-175 (GP)	T-3000	500 gal	Lube Oil	NA
P-176 (GP)	T-3001	500 gal	Lube Oil	
P-177 (GP)	T-3002	1000 gal	Lube Oil	
P-178 (GP)	T-3004	1000 gal	Lube Oil	
P-179 (GP)	T-3005	500 gal	Lube Oil	
P-529 (PB)	Tank # 144, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-530 (PB)	Tank # 145, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-534 (PB)	Tank # 151, EFR	>40M Gal	Gas Oil	1979
P-582 (PB)	Tank #833, IFR	>40M Gal	Gas Oil	1950

Group 22 – Degreasing Vats

P-108 (GP)	Degreasing Vats		Degreaser	NA
(GP)	Garage – Model E3000	10 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	2960 gal	Diesel Fuel	

(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	4578 gal	Diesel Fuel	

Group 25A –Wastewater

P-131 (GP)	4A API Separator – WWT			
P-132 (GP)	2B API Separator – WWT			
P-639 (PB)	API Separators A&B – Bio Plant			
P-114 (GP)	Wastewater –			
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant			
P-641 (PB)	Bio Plant Sewer System – Refinery			
P-667 (PB)	Wastewater Sources			
P-142 (GP)	T-1142, T-1143	Oxidation Tanks at WWTP	Wastewater	NA

Group 27 – Emergency Generator and Fire Pump

EM-001	Caterpillar (model 3412DITTA) Emergency Generator	896 HP	Diesel	2004
FP-010	24PEN4 Fire Pump #4	211 Hp	Diesel	2011
FP-011	24P1 Fire Engine (Haenn's Wharf)	210 Hp	Diesel	2012
FP-012	Fire Pump (1st and Wharf #8)	475 bhp	ULSD	

FP-013	24P2 North Fire Pump (Haenn's Wharf)	210 bhp	ULSD	
FP-014	24P3 South Fire Pump (Short Pier)	350	ULSD	
FP-015	24PEN5 Fire Pump (North Yard)	250 bhp	ULSD	
FP-016	24PEN6 Fire Pump (North Yard Wharf)	250 bhp	ULSD	
FP-019	Belmont Firehouse Williams Pump (fire pump) affixed to a trailer	750 bhp	ULSD	

Group 28 – Internal Combustion Engines

IC-002	53P-800C pump	200 bhp	Diesel	
IC-005	FE-5(2) Flood Control Pump Driver	28 bhp	Diesel	
IC-006	Godwin 894572/4 Flood Control Pump Driver	115 bhp	Diesel	
IC-007	B-2623 Flood Control Pump Driver	102 bhp	Diesel	
IC-008	Engine Set 1290 (northside of 8 Sep)	214 bhp	Diesel	
IC-009	Flood Control RICE For flood control at GP 2nd and J	147 HP	Diesel	
IC-010	Flood Control RICE For flood control at Girard point 2-separtor	275 HP	Diesel	
rIC-001	Rental back-up pump (2nd &1st, 3BH sump)	≤ 14 bh	Diesel	
rIC-006	Rental back-up air compressor (small	≤ 101 bhp	Diesel	

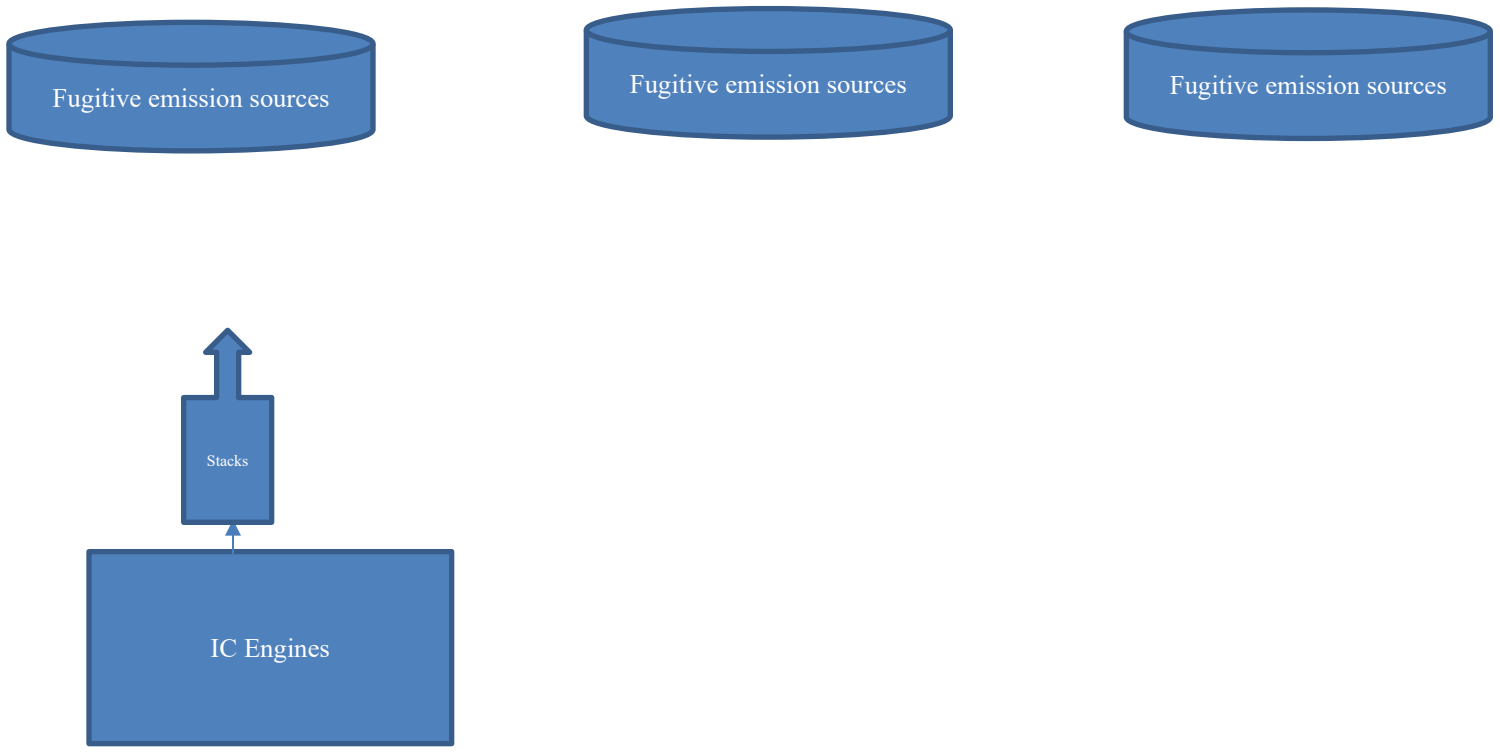
	maintenance air compressors)			
rIC-007	Rental back-up pump (WW pump 270 Tk to WWTP)	≤ 144 bhp	Diesel	

Group 29 - Stacks

S-131 (GP)	Used by P-131, 4A API Separator Unit – WWT			
S-132 (GP)	Used by P-132, 2B API Separator Unit – WWT			
S-144 (GP)	Used by P-108 Degreasing Vats			
S-150 (GP)	Used by P-114,			
S-205 (GP)	Used by P-006, T-228			
S-211 (GP)	Used by P-012, T-272			
S-231 (GP)	Used by P-032, T-273			
S-235 (GP)	Used by P-036, T-282			
S-236 (GP)	Used by P-037, T-284			
S-238 (GP)	Used by P-039, T-494			
S-246 (GP)	Used by P-135, T-767			
S-253 (GP)	Used by P-142, Two oxidation tanks (101 and 102)			
S-856 (PB)	Used by P-521, Tank #117			
S-864 (PB)	Used by P-529, Tank #144			
S-865 (PB)	Used by P-530, Tank #145			
S-869 (PB)	Used by P-534, Tank #151			
S-881 (PB)	Used by P-546, Tank #191			
S-914 (PB)	Used by P-579, Tank #826			
S-917 (PB)	Used by P-582, Tank #833			
S-922 (PB)	Used by P-587, Tank #840			
S-923 (PB)	Used by P-588, Tank #841			

S-924 (PB)	Used by P-590, Tank #843			
S-959 (PB)	Used by P-624, Tank #7300 – Bio Plant			
S-962 (PB)	Used by P-627, Tank #7308 – Bio Plant			
S-973 (PB)	Used by P-639, Bio Plant DNF Unit A&B			
S-974 (PB)	Used by P-640, Bio Plant Sewer System			
S-975 (PB)	Used by P-641, Bio Plant Sewer System			
S-990 (PB)	Used by P-667,			
S3412 (PB)	Used by EM-001			

PROCESS FLOW DIAGRAM



FACILITY INVENTORY INDEX

P-006 (GP)	T-228, EFR	Group 14C
P-012 (GP)	T-272, IFR	Group 13C
P-032 (GP)	T-273, Fixed Roof	Group 15A
P-036 (GP)	T-282, Fixed Roof	Group 15A
P-037 (GP)	T-284, Fixed Roof	Group 15A
P-039 (GP)	T-494, Fixed Roof	Group 15A
P-108 (GP)	Degreasing Vats	Group 22
P-114 (GP)	Wastewater –	Group 25A
P-131 (GP)	4A API Separator – WWT	Group 25A
P-132 (GP)	2B API Separator – WWT	Group 25A
P-135 (GP)	T-767, IFR	Group 13C
P-142 (GP)	T-1142, T-1143	Group 25A
P-144 (GP)	T-219	Group 15A
P-147 (GP)	T-227	Group 15A
P-153 (GP)	T-794	Group 15A
P-154 (GP)	T-796	Group 15A
P-155 (GP)	T-844	Group 14C
P-159 (GP)	T-1086	Group 13C
P-160 (GP)	T-1087	Group 13C
P-162 (GP)	T-1136	Group 14C
P-174 (GP)	T-1007	Group 13C
P-175 (GP)	T-3000	Group 15A
P-176 (GP)	T-3001	Group 15A
P-177 (GP)	T-3002	Group 15A
P-178 (GP)	T-3004	Group 15A
P-179 (GP)	T-3005	Group 15A
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P-530 (PB)	Tank # 145, Cone Roof	Group 15A
P-534 (PB)	Tank # 151, EFR	Group 15A
P-546 (PB)	Tank #191, EFR	Group 14C
P-579 (PB)	Tank #826, EFR	Group 14C
P-582 (PB)	Tank #833, IFR	Group 15A
P-587 (PB)	Tank #840, EFR	Group 14C
P-588 (PB)	Tank #841, EFR	Group 14C
P-590 (PB)	Tank #843, EFR	Group 14C
P-601 (PB)	Tank #883, EFR	Group 14C
P-624 (PB)	Tank # 7300, EFR	Group 14C
P-627 (PB)	Tank #7308, EFR	Group 14C

P-639 (PB)	API Separators A&B – Bio Plant	Group 25A
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant	Group 25A
P-641 (PB)	Bio Plant Sewer System – Refinery	Group 25A
P-667 (PB)	Wastewater Sources	Group 25A

SECTION B. GENERAL REQUIREMENTS

1. Definitions

[25 Pa Code §121.1]

Words and terms that are not otherwise defined in this permit shall have the meanings set forth in Section 3 of the Pennsylvania Air Pollution Control Act (35 P.S. §4003) and 25 Pa Code §121.1.

2. Property Rights

[25 Pa Code §127.512(c)(4)]

This permit does not convey property rights of any sort, or any exclusive privileges.

3. Permit Expiration

[25 Pa Code §127.446(a) and (c)]

This operating permit is issued for a fixed term of 5 years and shall expire on the date specified on the front page of this permit. The terms and conditions of the expired permit shall automatically continue pending issuance of a new Title V permit, provided the Permittee has submitted a timely and complete application and paid applicable fees required under 25 Pa Code §127, Subchapter I and AMS is unable, through no fault of the Permittee, to issue or deny a new permit before the expiration of the previous permit. An application is complete if it contains sufficient information to begin processing the application, has the applicable sections completed and has been signed by a responsible official.

4. Permit Renewal

[25 Pa Code §§127.412, 127.413, 127.414, 127.446(e) & 127.503]

(a) The Permittee shall submit a complete application for renewal of the Title V permit at least 6 months and not more than 18 months before the expiration date of this permit. The Permittee shall submit to AMS a timely and complete application.

(b) The application for permit renewal shall include the current permit number, the appropriate renewal fee, a description of any permit revisions and off-permit changes that occurred during the permit term, and any applicable requirements that were promulgated and not incorporated into the permit during the permit term. The application for renewal of the Title V permit shall include submission of supplemental compliance review forms in accordance with 25 Pa Code §127.412(b) or (j).

(c) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information during the permit renewal process. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete renewal application was submitted but prior to release of a draft permit.

5. Transfer of Ownership or Operation

[25 Pa Code §§127.450(a)(4), 127.464(a) & AMR I Sec. II.A.5.c.]

(a) In accordance with 25 Pa Code §127.464(a) this permit may not be transferred to another person, except in cases of transfer-of-ownership which are documented and approved to the satisfaction of AMS.

(b) In accordance with 25 Pa Code §127.450(a)(4), a change in ownership or operational control of the source shall be treated as an administrative amendment if:

(1) AMS determines that no other change in the permit is necessary;

(2) A written agreement has been submitted to AMS identifying the specific date of the transfer of permit responsibility, coverage and liability between the current and the new Permittee; and

(3) A compliance review form has been submitted to AMS and the permit transfer has been approved by AMS.

6. Inspection and Entry

[25 Pa Code §127.513, 35 P.S. §4008, §114 of the Clean Air Act & Phila. Code §3-304]

(a) Upon presentation of credentials and other documents as may be required by law for inspection and entry purposes, the Permittee shall allow AMS or authorized representatives of AMS to perform the following:

(1) Enter at reasonable times upon the Permittee's premises where a Title V source is located or emissions related activity is conducted, or where records are kept under the conditions of this permit;

(2) Have access to and copy or remove, at reasonable times, any records that are kept under the conditions of this permit;

(3) Inspect at reasonable times, facilities, equipment including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit;

(4) Sample or monitor, at reasonable times, any substances or parameters for the purpose of assuring compliance with the permit or applicable requirements as authorized by the Clean Air Act, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code, or the regulations promulgated thereunder.

(b) Pursuant to 35 P.S. §4008, no person shall hinder, obstruct, prevent, or interfere with AMS or its personnel in the performance of any duty authorized under the Pennsylvania Air Pollution Control Act, Philadelphia Air Management Code, or regulations adopted thereunder.

(c) Nothing in this permit condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

7. Compliance Requirements

[25 Pa Code §§127.25, 127.444, 127.512(c)(1) & AMR I Sec. II.A.5.b.]

(a) The Permittee shall comply with the conditions of this permit. Noncompliance with this permit constitutes a violation of the Clean Air Act, the Pennsylvania Air

Pollution Control Act, and/or the Philadelphia Air Management Code and is grounds for one or more of the following:

(1) Enforcement action

(2) Permit termination, revocation and reissuance or modification

(3) Denial of permit renewal application.

(b) A person may not cause or permit the operation of a source subject to 25 Pa Code Article III or the Philadelphia Air Management Code, unless the source(s) and air cleaning devices identified in the application for the plan approval/ installation permit and operating permit and the plan approval/ installation permit issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval/ installation permit and operating permit issued by AMS. A person may not cause or permit the operation of an air contamination source subject to 25 Pa Code Chapter 127 or the Philadelphia Air Management Code in a manner inconsistent with good operating practices.

(c) For purposes of sub-condition (b) of this permit condition, the specifications in applications for plan approvals/ installation permits and operating permits are the physical configurations and engineering design details which AMS determines are essential for the Permittee's compliance with the applicable requirements in this Title V permit.

(d) The Permittee shall not change any installation such that the registered information concerning it is no longer accurate without first notifying AMS.

8. Need to Halt or Reduce Activity Not A Defense

[25 Pa Code §127.512(c)(2)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. Duty to Provide Information

[25 Pa Code §127.411(d), §127.512(c)(5) & AMR I Sec. II.B. and C.]

(a) The Permittee shall furnish to AMS, within a reasonable time, information that AMS may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the permit.

(b) Upon request, the Permittee shall also furnish AMS copies of records that the Permittee is required to keep by this permit, or for information claimed to be confidential, the Permittee may furnish such records along with any claim of confidentiality.

10. Reopening and Revising The Title V Permit for Cause

[25 Pa Code §§127.463, 127.512(c)(3), & 127.542]

(a) This Title V permit may be modified, revoked, reopened and reissued or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation, reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay a permit condition.

(b) This permit may be reopened and reissued prior to expiration of the permit under one or more of the following circumstances:

(1) Additional applicable requirements under the Clean Air Act, Pennsylvania Air Pollution Control Act, or Philadelphia Air Management Code become applicable to a Title V facility with a remaining permit term of 3 or more years prior to the expiration date of this permit. AMS will revise the permit as expeditiously as practicable but not later than 18 months after promulgation of the applicable standards or regulations. No such revision is required if the effective date of the requirement is later than the expiration date of this permit, unless the original permit or its terms and conditions has been extended.

(2) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Excess emissions offset plans for an affected source shall be incorporated into the permit upon approval by the Administrator of EPA.

(3) AMS or the EPA determines that this permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.

(4) AMS or the Administrator of EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(c) Proceedings to revise this permit shall follow the same procedures which apply to initial permit issuance and shall affect only those parts of this permit for which cause to revise exists. The revision shall be made as expeditiously as practicable.

(d) Regardless of whether a revision is made in accordance with (b)(1) above, the Permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations.

11. Reopening a Title V Permit for Cause by EPA

[25 Pa Code §127.543]

As required by the Clean Air Act and regulations adopted thereunder, this permit may be modified, reopened and reissued, revoked or terminated for cause by EPA in accordance with procedures specified in 25 Pa Code §127.543.

12. Significant Operating Permit Modifications

[25 Pa Code §127.541]

When permit modifications during the term of this permit do not qualify as minor permit modifications or administrative amendments, the Permittee shall submit an application for significant Title V permit modifications in accordance with 25 Pa Code §127.541.

13. Minor Operating Permit Modifications

[25 Pa Code §§121.1, 127.462 & AMR I Sec. II.A.]

(a) The Permittee may make minor permit modifications (as defined in 25 Pa Code §121.1) in accordance with 25 Pa Code §127.462.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) shall extend to an operational flexibility change authorized by 25 Pa Code §127.462.

14. Administrative Operating Permit Modifications

[25 Pa Code §127.450]

(a) The Permittee may request administrative operating permit amendments, as defined in §127.450(a), according to the procedures specified in §127.450. Administrative amendments are not authorized for any amendment precluded by the Clean Air Act or the regulations thereunder from being processed as an administrative amendment.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, AMS will, upon taking final action granting a request for an administrative permit amendment in accordance with §127.450(c), allow coverage by the permit shield in 25 Pa Code §127.516 (relating to permit shield) for administrative permit amendments which meet the relevant requirements of 25 Pa Code Article III.

15. Severability Clause

[25 Pa Code §127.512(b) & AMR I Sec. VIII]

The provisions of this permit are severable, and if any provision of this permit is determined by the Environmental Hearing Board (Department of Licenses and Inspections Review Board until the Environmental Hearing Board is approved) or a court of competent jurisdiction to be invalid or unenforceable, such a determination will not affect the remaining provisions of this permit.

16. Fee Payment

[25 Pa Code §§127.704, 127.705 & 127.707]

(a) The Permittee shall pay fees to AMS in accordance with the applicable fee schedules in 25 Pa Code Chapter 127 Subchapter I (relating to plan approval and operating permit fees).

(b) Emission fees. The Permittee shall, on or before September 1 of each year, pay applicable annual Title V emission fees for emissions occurring in the previous calendar year as specified in 25 Pa Code §127.705. The Permittee is not required to pay an emission fee for emissions of more than 4,000 tons of each regulated pollutant emitted from the facility.

(c) As used in this permit condition, the term “regulated pollutant” is defined as a Volatile Organic Compound, each pollutant regulated under Sections 111 and 112 of the Clean Air Act and each pollutant for which a National Ambient Air Quality Standard has been promulgated, except that carbon monoxide is excluded. Payment shall be made to AMS.

(d) Late Payment. Late payment of emission fees will subject the Permittee to the penalties prescribed in 25 Pa Code §127.707 and may result in the suspension or termination of the Title V permit. The Permittee shall pay a penalty of fifty per centum (50%) of the fee amount, plus interest on the fee amount computed in accordance with 26 U.S.C.A. §6621(a)(2) from the date the emission fee should

have been paid in accordance with the time frame specified in 25 Pa Code §127.705(c).

(e) The Permittee shall pay an annual operating permit administration fee according to the fee schedule established in 25 Pa Code §127.704(c) if the facility, identified in subparagraph (iv) of the definition of the term “Title V facility” in 25 Pa Code §121.1, is subject to Title V after the EPA Administrator completes rulemaking requiring regulation of those sources under Title V of the Clean Air Act.

(f) This permit condition does not apply to a Title V facility which qualifies for exemption from emission fees under 35 P.S. §4006.3(f).

17. Authorization for De Minimis Emissions Increases

[25 Pa Code §§127.14(b), 127.449 & Phila. Code §3-306]

(a) This permit authorizes de minimis emission increases from a new or existing source in accordance with 25 Pa Code §§127.14 and 127.449 without the need for a plan approval, Phila. Code §3-306 without the need for an installation permit, or prior issuance of a permit modification. The Permittee shall provide AMS with 7 days prior written notice before commencing any de minimis emission increase that would result from either: (1) a physical change of minor significance under 127.14.(c)(1) and Phila. Code §3-306; or (2) the construction, installation, modification or reactivation of an air contamination source. The written notice shall:

(1) Identify and describe the pollutants that will be emitted as a result of the de minimis increase.

(2) Provide emission rates in tons/year and in terms necessary to establish compliance consistent with any applicable requirement.

AMS may disapprove or condition the de minimis emission increase at any time.

(b) Except as provided below in (c) and (d) of this permit condition, the Permittee is authorized during the term of this permit to make the following de minimis emission increases (expressed in tons per year), up to the following amounts without the need for a plan approval or installation permit or prior issuance of a permit modification:

(1) Four tons of carbon monoxide from a single source during the term of the permit and 20 tons of carbon monoxide at the facility during the term of the permit.

(2) One ton of NO_x from a single source during the term of the permit and five tons of NO_x at the facility during the term of the permit.

(3) One and six-tenths tons of oxides of sulfur from a single source during the term of the permit and eight tons of oxides of sulfur at the facility during the term of the permit.

(4) Six-tenths of a ton of PM-10 from a single source during the term of the permit and three tons of PM-10 at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(5) One ton of VOCs from a single source during the term of the permit and five tons of VOCs at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(c) The Permittee is authorized to install the following minor sources without the need for a plan approval or installation permit:

(1) Air conditioning or ventilation systems not designed to remove pollutants generated or released from other sources.

(2) Combustion units rated at 250,000 or less Btu per hour of net load rating.

(3) Laboratory equipment used exclusively for chemical or physical analysis.

(d) This permit does not authorize de minimis emission increases if the emissions increase would cause one or more of the following:

(1) Increase the emissions of the pollutant regulated under Section 112 of the Clean Air Act except as authorized in subparagraph (b)(4) & (5) of this permit condition.

(2) Subject the facility to the prevention of significant deterioration requirements in 25 Pa Code Chapter 127, Subchapter D and/or the new source review requirements in subchapter E.

(3) Violate any applicable requirement of the Air Management Code, the Air Pollution Control Act, the Clean Air Act, or the regulations thereunder.

(4) Changes which are modifications under the provision of Title 1 of the Clean Air Act and emission increases which would exceed the allowable emissions level (expressed as a rate of emissions or in terms of total emissions) under the Title V permit.

(e) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) applies to de minimis emission increases and the installation of minor sources made pursuant to this permit condition.

(f) Emissions authorized under this permit condition shall be included in the monitoring, recordkeeping and reporting requirements of this permit.

(g) Except for de minimis emission increases allowed under this permit, or sources and physical changes meeting the requirements of 25 Pa Code §127.14, the Permittee is prohibited from making physical changes or engaging in activities that are not specifically authorized under this permit without first applying for a plan approval. A City of Philadelphia Installation Permit is required if the activities are subject to the Philadelphia Air Management Code. In accordance with 25 Pa Code §127.14(b), a plan approval is not required for the construction, modification, reactivation, or installation of the sources creating the de minimis emissions increase.

(h) The Permittee may not meet de minimis emission threshold levels by offsetting emission increases or decreases at the same source.

18. Reactivation of Sources

[25 Pa Code §§127.11, 127.11a, 127.215 & AMR I Sec. II.A.5.]

(a) The Permittee shall notify AMS of any source that is out of operation for more than a year in its semiannual monitoring report.

(b) The Permittee may reactivate a source at the facility that has been out of operation or production for at least one year, but less than or equal to 5 years, if the source is reactivated in accordance with the requirements of 25 Pa Code §§127.11a and 127.215. The reactivated source will not be considered a new source.

(c) A source which has been out of operation or production for more than five years but less than 10 years may be reactivated and will not be considered a new source if the Permittee satisfies the conditions specified in 25 Pa Code §127.11a(b).

19. Circumvention

[25 Pa Code §§121.9, 127.216 & AMR I Sec. VII]

(a) The Permittee may not circumvent the requirements of 25 Pa Code Chapter 127, by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or development, would otherwise require a permit or submission of a plan approval application.

(b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this permit, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code or the regulations promulgated thereunder, except that with prior approval of AMS, the device or technique may be used for control of malodors.

20. Operational Flexibility

[25 Pa Code §127.3 & AMR I Sec. XII]

(a) The Permittee is authorized to make changes within the Title V facility in accordance with the following provisions in 25 Pa Code Chapter 127 and in Phila. Code §3-306 which implement the operational flexibility requirements of Section 502(b)(10) of the Clean Air Act and Section 6.1(i) of the Pennsylvania Air Pollution Control Act:

(1) Section 127.14 and Phila. Code §3-306, whichever is more stringent (relating to exemptions)

(2) Section 127.447 (relating to alternative operating scenarios)

(3) Section 127.448 (relating to emissions trading at facilities with Federally enforceable emissions caps)

(4) Section 127.449 (relating to de minimis emission increases)

(5) Section 127.450 (relating to administrative operating permit amendments)

(6) Section 127.462 (relating to minor operating permit amendments)

(7) Subchapter H (relating to general plan approvals and operating permits)

(b) Unless precluded by the Clean Air Act or the regulations adopted thereunder, the permit shield authorized under 25 Pa Code §127.516 shall extend to operational flexibility changes made at this Title V facility pursuant to this permit condition and other applicable operational flexibility terms and conditions of this permit.

21. Approved Economic Incentives and Emission Trading Programs

[25 Pa Code §127.512(e)]

No permit revision shall be required under approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this Title V permit.

22. Permit Shield

[25 Pa Code §§127.516, 127.450(d), 127.449(f) & 127.462(g)]

(a) The Permittee's compliance with the conditions of this permit shall be deemed in compliance with applicable requirements as of the date of permit issuance if either of the following applies:

(1) The applicable requirements are included and are specifically identified in this permit.

(2) AMS specifically identifies in the permit other requirements that are not applicable to the permitted facility.

(b) Nothing in 25 Pa Code §127.516 or the Title V permit shall alter or affect the following:

(1) The provision of Section 303 of the Clean Air Act, including the authority of the Administrator of the EPA provided thereunder.

(2) The liability of the Permittee for a violation of an applicable requirement prior to the time of permit issuance.

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act.

(4) The ability of the EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(c) Unless precluded by the Clean Air Act or regulations thereunder, final action by AMS on administrative amendments, minor and significant permit modifications, and operational flexibility changes shall be covered by the permit shield provided such amendments, modifications and changes meet the relevant requirements of 25 Pa Code Article III.

(d) The permit shield authorized under §127.516 is in effect for the permit terms and conditions in this Title V permit, including administrative operating permit amendments and minor operating permit modifications.

SECTION C. FACILITY WIDE REQUIREMENTS

1. Fugitive Emissions

[25 Pa Code §§123.1, 123.2, & AMR II Sec. VIII]

(a) No person may permit the emission into the outdoor atmosphere of a fugitive air contaminant from a source other than the following:

(1) Construction, or demolition of buildings or structures.

(2) Grading, paving and maintenance of roads and streets.

(3) Use of roads and streets. Emissions from material in or on trucks, railroad cars, and other vehicular equipment are not considered as emissions from use of roads and streets.

(4) Clearing of land.

(5) Stockpiling of materials.

(6) Sources and classes of sources other than those identified in paragraphs 1(a)(1)-1(a)(5) for which the Permittee has obtained a determination from AMS that fugitive emissions from the source, after appropriate control, meet the following requirements:

(i) The emissions are of minor significance with respect to causing air pollution.

(ii) The emissions are not preventing or interfering with the attainment or maintenance of an ambient air quality standard.

(b) The Permittee may not permit fugitive particulate matter from a source specified in paragraphs 1(a)(1)-1(a)(6) if the emissions are visible at the point the emissions pass outside the facility's property.

(c) The Permittee shall take all reasonable actions to prevent particulate matter emitted from a source identified in paragraphs 1(a)(1)-1(a)(6) from becoming airborne. These actions include, but are not limited to, the following:

(1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.

(2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.

(3) Paving and maintenance of roadways.

(4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

2. Odor Emissions Limitations

[25 Pa Code §123.31(b) & AMR V Sec. XX]

A person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the person on whose land the source is being operated.

3. Visible Emissions Limitations

[25 Pa Code §§123.41, 123.42, 123.43, and AMR II Sec. IV]

(a) A person at the Title V facility may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

(1) Equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour.

(2) Equal to or greater than 60% at any time.

(b) These emission limitations do not apply when: [25 Pa Code §123.42]

(1) The presence of uncombined water is the only reason for failure of the emission to meet the limitations.

(2) When the emission results from sources specified in 25 Pa Code §123.1(a)(1)-(9).

(3) When the emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions.

(c) The visible emissions may be measured using either of the following: [25 Pa Code §123.43]

(1) A device approved by AMS and maintained to provide accurate opacity measurements.

(2) Observers, trained and qualified to measure plume opacity with the naked eye or with the aid of devices approved by AMS.

(d) The emission limitations of 20% and 60% as stated above do not apply to facilities which have received a stricter emission limitation in a plan approval or operating permit as part of AMS's Best Available Technology determination, if that limitation is stated elsewhere in this permit.

4. Noise and Vibrations

[Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration)]**

(a) The Permittee shall not create or cause, or permit the creation of sound, sound originating from a property used for a non-residential purpose shall not exceed the following:

(1) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(2) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(b) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary.

5. Fuel Usage

[AMR III Sec. I & III. Compliance with the requirement specified in this streamlined permit condition assures compliance with the provisions specified in 25 Pa Code §123.22(e)]

(a) Unless specified in Section D, the Permittee shall use only natural gas, propane, or commercial fuel oil. The maximum sulfur content would be 0.2%, 0.3% and 0.5 % for number 2, 4, and 5 or 6 fuel oil, respectively.

(1) Beginning July 1, 2016, the maximum sulfur content of fuel oil, expressed as parts per million (ppm) by weight or percentage by weight, shall be: [25 Pa Code §123.22(e)(2)(i)]

Grades Commercial Fuel Oil (Consistent with ASTM 396)		
No. 2 and lighter oil	500 ppm	(0.05%)
No. 4 oil	2,500 ppm	(0.25%)
No. 5, No. 6 and heavier oil	5,000 ppm	(0.5%)

(2) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to July 1, 2016, which met the applicable maximum allowable sulfur content for commercial fuel oil through June 30, 2016, in subparagraph (i) at the time it was stored, may be used by the ultimate consumer in this Commonwealth on and after July 1, 2016. [25 Pa Code §123.22(e)(2)(ii)]

(b) When it appears that the delivery of low sulfur fuel is, or is about to be, interrupted because of unavailability, accident, or other emergency conditions, AMS may authorize the use of an alternative fuel supply, involving the least adverse impact on air quality, for a period not to exceed 30 days. Longer periods of time of 120 days each may be authorized by AMS only after review and recommendation made by the Air Pollution Control Board for each extended period of time. Factors to be considered shall include the availability of alternate complying fuels, the availability of sulfur dioxide stack gas removal equipment, and the anticipated effect on air quality in the neighborhood, area and region. The Air Pollution Control Board, after a hearing, shall have the right to adjust, revoke, rescind, and make changes or modifications of any authorizations if there shall occur such change in the condition of availability of low sulfur fuel or the factors set forth in this subsection. [AMR III, Sec. III.C.]

6. Open Burning

[AMR II Sec. II]

The Permittee shall not permit the ignition or continuation of open burning of any materials.

7. Air Pollution Episode

[25 Pa Code Chapter 137 & AMR IV Sec. V, VI & VII]

The Permittee shall reduce its emission according to the approved curtailment plan, when the Philadelphia Health Commissioner or his designee declares an air pollution episode.

8. Modification of 112 Pollutants Which Are VOCs and PM-10

[25 Pa Code §127.512(j)]

Except when precluded by the Clean Air Act, the Permittee may modify the mixture of pollutants regulated under Section 112 of the Clean Air Act (42 U.S.C.A. §7412) which are VOCs or PM-10 if:

(a) The emission limitations of the permit are not violated, and

(b) The Permittee keeps a log which identifies the mixture of pollutants regulated under Section 112 and reports such changes to AMS in the next semiannual report.

9. Risk Management

[25 Pa Code §§127.441(d), 127.512(i) and 40 CFR Part 68]

(a) If required by Section 112(r) of the Clean Air Act, the Permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act and 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).

(b) When a regulated substance listed in 40 CFR §68.130 is present in a process at the Title V facility in more than the listed threshold quantity, the Permittee shall prepare and implement a risk management plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act.

(1) The Permittee shall submit the first RMP to AMS and EPA no later than the latest of the following:

(i) June 21, 1999;

(ii) Three years after the date on which a regulated toxic substance is first listed under §68.130; or

(iii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The Permittee shall submit any additional relevant information requested by AMS or EPA concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR §68.190.

(3) The Permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68 and guidance developed by EPA, including a checklist addressing the required elements of a complete RMP.

(c) As used in this permit condition, and defined in 40 CFR §68.3, the term “process” means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

(d) If the Title V facility is subject to 40 CFR Part 68, as part of the certification required under this permit, the Permittee shall:

(1) Submit a compliance schedule for satisfying the requirements of 40 CFR Part 68 by the date specified in 40 CFR §68.10(a); or

(2) Certify that the Title V facility is in compliance with all requirements of 40 CFR Part 68 including the registration and submission of the RMP.

(e) If the Title V facility is subject to 40 CFR Part 68, the Permittee shall maintain records supporting the implementation of an accidental release program for five years in accordance with 40 CFR §68.200.

(f) When the Title V facility is subject to the accidental release program requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68, appropriate enforcement action will be taken by AMS if:

(1) the Permittee fails to register and submit the RMP or a revised plan pursuant to 40 CFR Part 68.

(2) the Permittee fails to certify that the Title V facility is in compliance with the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68, and 25 Pa Code §127.512(i).

10. Stratospheric Ozone Protection

[25 Pa Code §127.441(b) and 40 CFR Part 82]

The Permittee shall satisfy applicable requirements of 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction, during the service, maintenance, repair and disposal of equipment containing Class I and Class II refrigerants regulated under such regulations.

11. Sampling, Testing and Monitoring Procedures

[25 Pa Code §§127.441(c) & 127.463(e); Chapter 139; & 114(a)(3), 504(b) of the Clean Air Act & AMR I Sec. III]

(a) The Permittee shall perform the emissions monitoring and analysis procedures or test methods for applicable requirements of this Title V permit. In addition to the sampling, testing and monitoring procedures specified in this permit, the Permittee shall comply with any additional applicable requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Unless alternative methodology is required by the Clean Air Act (including §§114(a)(3) or 504(b)) and regulations adopted thereunder, the sampling, testing and monitoring required by or used by the Permittee to demonstrate compliance with any applicable regulation or permit condition shall be conducted in accordance with the requirements of 25 Pa Code Chapter 139.

12. Recordkeeping Requirements

[25 Pa Code §127.511 & Chapter 135]

(a) The Permittee shall maintain and make available, upon request by AMS, the following records of monitored information:

(1) The date, place (as defined in the permit) and time of sampling or measurements.

(2) The dates the analyses were performed.

(3) The company or entity that performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of analyses.

(6) The operating conditions as existing at the time of sampling or measurement.

(b) The Permittee shall retain records of the required monitoring data and supporting information for at least five (5) years from the date of the monitoring, sample, measurement, report or application. Supporting information includes calibration

and maintenance records and original strip-chart or electronic recordings for continuous monitoring instrumentation, and copies of reports required by the permit.

(c) The Permittee shall maintain and make available to AMS upon request, records including computerized records that may be necessary to comply with the reporting, recordkeeping, and emission statement requirements in 25 Pa Code Chapter 135 (relating to reporting of sources). In accordance with 25 Pa Code Chapter 135, §135.5, such records may include records of production, fuel usage, maintenance of production or pollution control equipment or other information determined by AMS to be necessary for identification and quantification of potential and actual air contaminant emissions. If direct recordkeeping is not possible or practical, sufficient records shall be kept to provide the needed information by indirect means.

13. Reporting Requirements

[25 Pa Code §§127.411(d), 127.442, 127.463(e) 127.511(c), & AMR I Sec. II]

(a) The Permittee shall comply with the reporting requirements for the applicable requirements specified in this Title V permit. In addition to the reporting requirements specified herein, the Permittee shall comply with any additional applicable reporting requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Pursuant to 25 Pa Code §127.511(c), the Permittee shall submit reports of required monitoring, on or before the following January 31 or July 31, whichever date is earlier, and every six months thereafter, covering the immediately preceding six month periods of July 1 - December 31 and January 1 - June 30 respectively. Instances of deviations (as defined in 25 Pa Code §121.1) from permit requirements shall be clearly identified in the reports. The reporting of deviations shall include the probable cause of the deviations and corrective actions or preventative measures taken, except that sources with continuous emission monitoring systems shall report according to the protocol established and approved by AMS for the source. The required reports shall be certified by a responsible official.

(c) Any records, reports or information obtained by AMS or referred to in a public hearing shall be made available to the public by AMS except for such records, reports or information for which the Permittee has shown cause that the documents could be considered confidential and protected from disclosure to the public under Section 4013.2 of the Pennsylvania Air Pollution Control Act and consistent with Section 112(d) and 114(c) of the Clean Air Act and 25 Pa Code §127.411(d). The Permittee may not request a claim of confidentiality for any emissions data generated for the Title V facility.

14. Philadelphia Toxic Notification

[AMR VI Sec. II & III]**

(a) The Permittee shall notify AMS of any changes to its “Notice of Toxic Air Contaminant Emissions” within 30 days of the changes.

(b) The requirements of this condition shall not apply to toxic air contaminants emitted from the following:

(1) Combustion process using only commercial fuel, including internal combustion engines;

(2) Retail dry cleaning operations;

(3) Retail and non-commercial storage and handling of motor fuels;

(4) Incineration of waste materials other than liquid, semi-liquid or solid by-product industrial wastes; and

(5) Incidental or minor sources including laboratory-scale operations, fireplaces and household appliances, cooking appliances, general comfort ventilation of occupied spaces, housecleaning operations, residential-scale solvent use and pesticide application, and such other sources or categories of sources which are determined by AMS to be of minor significance for the purposes of this Regulation, or which AMS determines to be more appropriately evaluated by special survey methods.

15. Emission Statement

[25 Pa Code §135.21 & AMR I Sec. II.B.2.]

On or before March 1 of each year, the Permittee shall provide AMS with a statement, in a form as AMS may prescribe, for classes or categories of sources, showing the actual emissions from each source for the previous calendar year and a description of the method used to calculate the emissions. The statement shall contain emission information for the following pollutants:

(1) Oxides of nitrogen and VOCs. The statement for these pollutants shall contain a certification by a company officer or plant manager that the information contained in the statement is accurate. [25 Pa Code 135.21]

(2) Total suspended particulate, PM-10, sulfur oxides, carbon monoxide, hazardous air pollutants, and any other pollutants or information requested by AMS. [Phila. Code Sec. 3-301]

16. Reporting Of Malfunctions

[25 Pa. Code §127.511 & AMR I Sec. II.A.5.]

(a) The Permittee shall, within two (2) hours of knowledge of any occurrence, notify AMS, at 215-685-7580 during business hours and 215-686-4514 during other times, of any malfunction of the source(s) or associated air pollution control devices listed in Table A1 of this permit, which results in, or may result in, the emission of air contaminants in excess of the limitations specified in this permit, or regulation contained in 25 Pa Code Article III or the Philadelphia Air Management Code.

(b) Malfunction(s) which occur at this Title V facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number.

(c) A written report shall be submitted to AMS within two (2) working days following the (notification of the) incident, and shall describe, at a minimum, the following:

(1) The malfunction(s).
(2) The emission(s).
(3) The duration.
(4) Any corrective action taken.

17. Compliance Certification

[25 Pa Code §127.513]

(a) The Permittee shall submit to AMS and EPA Region III a certification of compliance with each term and condition of this permit including the emission limitations, standards or work practices. This certification shall be submitted by March 1 of each year for the period of the previous calendar year and shall include:
(1) The identification of each term or condition of the permit that is the basis of the certification.
(2) The compliance status.
(3) The methods used for determining the compliance status of the source, currently and over the reporting period.
(4) Whether compliance was continuous or intermittent.

(b) The compliance certifications shall be submitted to AMS and EPA in accordance with the Submissions requirement of this permit specified in Condition #17 of this section.

18. Submissions

[25 Pa Code §§127.402(d) and 127.513(1)]

(a) Reports, test data, monitoring data, notifications, and requests for renewal of the permit shall be submitted to:

Chief of Source Registration
Air Management Services
321 University Ave.
Philadelphia, PA 19104-4543

(b) Any report or notification for the EPA Administrator or EPA Region III should be addressed to:

Associate Director
Office of Enforcement and Permits Review (3AP10)
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(c) An application, form, report or compliance certification submitted pursuant to this permit condition shall contain a certification by a responsible official as to the truth, accuracy, and completeness as required under 25 Pa Code §127.402(d).

(d) Unless otherwise required by the Clean Air Act or regulations adopted thereunder, this certification and any other certification required pursuant to this permit shall

state that based on information and belief formed after reasonable inquiry, the statements and information in the documents are true, accurate, and complete.

SECTION D. SOURCE SPECIFIC REQUIREMENTS

1. Facility

(a) Work Practice Standards

(1) Process unit turnarounds. Purging of volatile organic compounds during depressurization of reactors, fractionating columns, pipes, or vessels during unit shut-down, repair, inspection, or startup shall be performed in such a manner as to direct the volatile organic vapors to a fuel gas system, , or vapor recovery system until the internal pressure in such equipment reaches 19.7 psia (136 kilopascals). [AMS letter dated 4/14/94]

(2) The Permittee may burn non-commercial fuels in accordance with Air Management Code Section 3-207(2), AMR III, Section 1.A and 25 PA Code §123.22(e)(3).

(3) All Processes must vent to control devices specified in the inventory table included in Section A. of this permit unless changes to the facility's configuration are made pursuant a valid plan approval or installation permit.

(b) Testing Requirements

[25 PA Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Method 7E shall be used for nitrogen oxides.

(ii) U.S.E.P.A. Reference Method 5 and 202 shall be used for particulate matter.

(iii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iv) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(v) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(3) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5, 7E, and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 PA Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(4) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3 and the Permittee shall only use test methods authorized in accordance with 25 Pa. Code §139.

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) visible and fugitive emissions during operation daily.

(2) All CEMs shall meet the requirements of 25 PA Code Chapter 139.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5, 139, and SO2 Operating Permit No. SO2-95-039]

The Permittee shall keep the following records:

(1) Records of the daily inspection for visible and fugitive emissions and any corrective actions taken.

(2) Baseline operating records, sampling data concurrent with any emission tests, and any supporting calculations used to determine emissions;

(3) Records of the occurrence or duration of each startup, shutdown, and malfunction of operation of a combustion unit;

(4) Records of the occurrence, duration, and cause (if known) of each malfunction of air pollution equipment or monitoring equipment used to comply with the restrictions or monitoring provisions of this permit;

(5) For monitoring equipment used to comply with the monitoring requirements of this permit, records documenting the completion of installation, calibration checks, and maintenance.

(e) Reporting Requirements

[25 Pa Code §127.511(c) & AMR I Section II]

(1) Annual compliance certification in accordance with Section C.16.

2. Group 08 - Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[AMR V Section XIII.A & AMR X, Section XIII.D]

(a) Work Practice Standards

(1) No person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that:

(i) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the Department; or

(ii) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.

(2) For Piping components associated with crude oil and recovered oil tanks (P-579, P-587, P-588, P-590, P-601, P-012, P-135, P-521, and P-546), the permittee shall comply with the following. For each pump, valve, and sampling connection that operates in organic liquids service for at least 300 hours per year, comply with 40 CFR 63.2346(l) and the applicable requirements under subpart TT of this part (control level 1), subpart UU of this part (control level 2), or subpart H of this part. Pumps, valves, and sampling connectors that are insulated to provide protection against persistent sub-freezing temperatures are subject to the "difficult to monitor" provisions in the applicable subpart selected by the owner or operator.[40 CFR 63.2346(c)]

(b) Testing Requirements

[25 PA Code §139, AMR X, Section XIII.D]

(1) For determining the magnitude of VOC leaks from former petroleum refinery equipment, test methods and procedures shall be equivalent to those specified in EPA Method 21 (40 CFR 60, Appendix A) or as specified in 25 PA §139.4(5). Methane and ethane may be excluded from this measurement. If methane and ethane are excluded, the measurement of methane and ethane together shall be reported. [25 PA §139.14(b)(4)]

(2) The Permittee shall utilize a fugitive emission LDAR program for all valves, pumps, flanges, and compressors in VOC service. For any source not covered under an existing LDAR program, monitoring shall be conducted on a quarterly basis for equipment in gaseous service and on an annual basis for equipment in liquid service. [AMR X, Section XIII.D]

(c) Monitoring Requirement [AMR X, Section XIII.D]

(1) The Permittee shall utilize a fugitive emission LDAR program for all valves, pumps, flanges, and compressors in VOC service. For any source not covered under an existing LDAR program, monitoring shall be conducted on a quarterly basis for equipment in gaseous service and on an annual basis for equipment in liquid service.

(d) Recordkeeping Requirement

(1) Records of the fugitive emission LDAR program required in Section D.2(c)(1)

3. Group 13C – Internal Floating Roof Tanks subject to 40 CFR 60, Subpart Kb

Girard Point Tanks, P-012, P135, P159, P160, and P174. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the

roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(2) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(i) A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank. [40 CFR 60.112b(a)(1)(ii)(A)]

(ii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous. [40 CFR 60.112b(a)(1)(ii)(B)]

(iii) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof. [40 CFR 60.112b(a)(1)(ii)(C)]

(3) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(4) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(5) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(6) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(7) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(8) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(9) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(ix)]

(b) Testing Requirements

[25 PA Code §139]

(1) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below. [40 CFR 60.116b(e)]

(i) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(ii) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(A) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(B) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(2) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel. [40 CFR 60.113b(a)(1)]

(2) For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid

accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

(3) For vessels equipped with a double-seal system: [40 CFR 60.113b(a)(3)]

(i) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(4) at least every 5 years; or [40 CFR 60.113b(a)(3)(i)]

(ii) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(2). [40 CFR 60.113b(a)(3)(ii)]

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in 40 CFR 60.113b(a)(2) and 40 CFR 60.113b(a)(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113b(a)(3(i). [40 CFR 60.113b(a)(4)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. The record will be kept for the life of the source. Each storage vessel with a design capacity less than 75 m^3 is exempt except for what is required in D.14(d)(2). [40 CFR 60.116b(a) and (b)]

(2) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored,

the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

(4) Keep a record of each inspection performed as required by 40 CFR 60.113b (a)(1), (a)(2), (a)(3) and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). [40 CFR 60.115b(a)(2)]

(e) Reporting Requirements

(1) Notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to have an observer present. If the inspection is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

(2) Furnish the EPA Administrator and AMS with a report that describes the control equipment and certifies that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1). This report shall be an attachment to the notification required by 40 CFR 60.7(a)(3). [40 CFR 60.115b(a)(1)]

(3) If any of the conditions described in 40 CFR 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR 60.113b(a)(2), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

(4) After each inspection required by 40 CFR 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR 60.113b(a)(3)(ii), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the

specifications of 40 CFR 61.112b(a)(1) or 40 CFR 60.113b(a)(3) and list each repair made. [40 CFR 60.115b(a)(4)]

4. Group 14C – External Floating Roof Tanks subject to 40 CFR 60, Subpart Kb (or equivalent).

Girard Point Tanks P006, P155, and P162. Point Breeze Tanks P-521, P-546, P-579, P-587, P-588, P-590, P-601, P624, and P627. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications: [40 CFR 60.112b(a)(2)]

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in 40 CFR 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall. [40 CFR 60.112b(a)(2)(i)(A)]

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4). [40 CFR 60.112b(a)(2)(i)(B)]

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(2) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(b) Testing Requirements

[25 PA Code §139]

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(3) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency. [40 CFR 60.113b(b)(1)]

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter. [40 CFR 60.113b(b)(1)(i)]

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter. [40 CFR 60.113b(b)(1)(ii)]

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial

fill for the purposes of 40 CFR 60.113b(b)(1)(i) and 40 CFR 60.113b(b)(1)(ii). [40 CFR 60.113b(b)(1)(iii)]

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures: [40 CFR 60.113b(b)(2)]

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. [40 CFR 60.113b(b)(2)(i)]

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location. [40 CFR 60.113b(b)(2)(ii)]

(iii) The total surface area of each gap described in paragraph 40 CFR 60.113b(b)(2)(ii) shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance. [40 CFR 60.113b(b)(2)(iii)]

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in 40 CFR 60.113b(b)(4). [40 CFR 60.113b(b)(3)]

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and 40 CFR 60.113b(b)(4)(ii): [40 CFR 60.113b(b)(4)]

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface. [40 CFR 60.113b(b)(4)(i)(A)]

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 60.113b(b)(4)(i)(B)]

(ii) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in [40 CFR 60.113b(b)(2)(iii)]. [40 CFR 60.113b(b)(4)(ii)(A)]

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. [40 CFR 60.113b(b)(4)(ii)(B)]

(C) There are to be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 60.113b(b)(4)(ii)(C)]

(iii) If a failure is detected during an inspection and cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.113b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(b)(4)(iii)]

(5) Notify the EPA Administrator and AMS 30 days in advance of any gap measurements required by 40 CFR 60.113b(b)(1) to afford the EPA Administrator and AMS the opportunity to have an observer present. [40 CFR 60.113b(b)(5)]

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. [40 CFR 60.113b(b)(6)]

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL. [40 CFR 60.113b(b)(6)(i)]

(7) For all the inspections required by 40 CFR 60.113b(b)(6), the Permittee shall notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to inspect the storage vessel prior to refilling. If the inspection required by 40 CFR 60.113b(b)(6) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(b)(6)(ii)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep copies of all records required by 40 CFR 60.116b(b), for the life of the source. [40 CFR 60.116b(a)]

(2) he Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m3 is subject to no provision of this subpart other than those required by this paragraph. The records of this condition shall be kept for the life of the source. [40 CFR 60.116b(a) and (b)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m3 but less than 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(4) The Permittee shall keep a record of each gap measurement performed as required by 40 CFR 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement. [40 CFR 60.115b(b)(3)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(3)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(3)(iii)]

(e) Reporting Requirements

(1) Within 60 days of performing the seal gap measurements, the Permittee furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(2) Within 60 days of performing the seal gap measurements required by (c)(1) of this section, The Permittee shall furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(3) After each seal gap measurement that detects gaps exceeding the limitations specified by (c)(4) of this section, the Permittee shall submit a report to the EPA Administrator and AMS within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (e)(2) of this section and the date the vessel was emptied or the repairs made and date of repair. [40 CFR 60.115b(b)(4)]

(4) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

5. Group 15A Petroleum Liquids Storage Tanks

Girard Point Tanks, P032, P036, P037, P039, P144, P147, , P153, P154, , P175, P176, P177, P178, and P179. Point Breeze Tanks, P529, P530, P534 and P582

(a) Work Practice.

(1) Each tank shall have maximum true vapor pressure of less than 10.4 kPa (1.5 psia) and the annual average true vapor pressure shall be less than 8.3 kPa (1.2 psia).

6. Group 22 – Degreasing Vats

Girard Point equipment numbered P108 (PB Fab/Machine Shop small parts degreasers)

(a) Emissions

(1) VOC emissions from each part cleaner/cold cleaning machine shall not exceed 2.7 tons per rolling 12-month basis. [Installation Permit No. 12070-12071, dated May 21, 2012].

(b) Work Practice Standards

(1) No solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, may be used as a cleaning and/or drying agent in any degreaser. [Exempt from 40 CFR §63.460]

(2) The Permittee shall not use any solvent subject to the Federal National emissions standards for hazardous air pollutants (NESHAP) for halogenated solvent cleaners under 40 CFR Part 63 (relating to National emissions standards for hazardous air pollutants for source categories). [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(3) Cold cleaning degreasers which have a degreaser opening which is greater than 10 square feet shall be equipped with:

(i) A cover to prevent evaporation of solvent during periods of non-use. [25 PA Code 129.63(a)(1)(i)]

(ii) Equipment for draining cleaned parts. [25 PA Code 129.63(a)(1)(ii)]

(iii) A permanent, conspicuous label summarizing the operating requirements. [25 PA Code 129.63(a)(1)(iii)]

(4) Be operated in accordance with the following requirements:

(i) Do not dispose of waste solvent or transfer it to another party, such that greater than 20% for the waste solvent (by weight) can evaporate into the atmosphere, store waste solvent only in covered containers. [25 PA Code129.63(a)(2)(i)]

(ii) Close degreaser cover whenever not handling parts in the cleaner. [25 PA Code 129.63(a)(2)(ii)]

(iii) Drain cleaned parts for at least 15 seconds or until dripping ceases. [25 PA Code 129.63(a)(2)(iii)]

(5) Each parts cleaner/cold cleaning machine shall: [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(i) Immersion cold cleaning machines shall have a freeboard ratio of 0.50 or greater [25PA Code 129.63(a)(1)]

(ii)Immersion cold cleaning machines and remote reservoir cold cleaning machines shall have a permanent, conspicuous label summarizing the operating requirements in Section D.6(5)(iv). In addition, the label shall include the following discretionary good operating practices: [25PA Code 129.63(a)(2)(i)]

(A) Cleaned parts should be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts should be positioned so that solvent drains directly back to the cold cleaning machine.

(B) When a pump-agitated solvent bath is used, the agitator should be operated to produce a rolling motion of the solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned.

(C) Work area fans should be located and positioned so that they do not blow across the opening of the degreaser unit.

(iii)Be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage reservoir, a perforates drain with a diameter of not more than 6 inches shall constitute an acceptable cover. [25PA Code 129.63(a)(2)(ii)]

(iv)Cold Cleaning Machines shall be operated in accordance with the following procedures: [25PA Code 129.63(a)(3)]

(A) Waste solvent shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(B) Flushing of parts using a flexible hose or other flushing device shall be performed only within the cold cleaning machines. The solvent spray shall be a solid fluid stream, not a atomized or shower spray.

(C) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the cold cleaning machine.

(D) Air agitated solvent baths may not be used.

(E) Spills during solvent transfer and use of the cold cleaning machine shall be cleaned up immediately.

(v)The Permittee may not use, sell or offer for sale for use in a cold cleaning machine any solvent with a vapor pressure of 1.0 millimeter of mercury (mm Hg) or greater and containing greater than 5% VOC by weight, measured at 20C (68F) containing VOCs [25PA Code 129.63(a)(4)]

(A)The above condition does not apply: [25PA Code 129.63(a)(7)]

(I) To cold cleaning machines used in extreme cleaning service;

(II) If the owner or operator of the cold cleaning machine demonstrates, and AMS approves in writing, that compliance will result in unsafe operating conditions.

(III) To immersion cold cleaning machines with a freeboard ratio equal to or greater than 0.75.

(vi) If a person sells or offers for sale any solvent containing VOCs for use in a cold cleaning machine, the person shall provide to the purchaser, the following written information: [25PA Code 129.63(a)(7)]

(A) The name and address of the solvent supplier

(B) The type of solvent including the product or vendor identification number

(C) The vapor pressure of the solvent measured in mm Hg at 20C (68F)

(vii)VOC material shall be kept in covered containers when not in use. [AMR V, Sec. XIII.A.2].

(c) Monitoring Requirements

25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The concentration of these solvents may be determined using EPA test method 18, material safety data sheets, or engineering calculations. [40 CFR 63.460(a)]

(2) Proper operation of parts cleaner/cold cleaning machine in accordance with manufacturer's recommended operations and maintenance [Installation Permit 12070-71, dated May 21, 2012]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Records of the type and amount of any solvent with a vapor pressure that is greater than 0.3 kilopascals at 20 degrees Celsius that is added to the vats.

(2) Documentation of the concentration of solvents as determined using EPA test method 18, material safety data sheets, or engineering calculations.

(3) For the parts cleaner/cold cleaning machine, Permittee shall keep the following records: [Installation Permit No. 12070-71, dated May 21, 2012]

(i) monthly solvent usage.

(ii) VOC and HAP content of the solvent added to the parts cleaner/cold cleaner machine.

(iii) VOC emission on a monthly and rolling 12-month basis.

(iv) Records shall be kept for a period of 5 years and shall be produced upon request.

7. Group 25A – Refining Wastewater

Girard Point equipment numbered P131and P132 Point Breeze equipment numbered P639

Girard Point equipment P114 Point Breeze equipment numbered P640, P641, and P667.

EFRTs storing stormwater and process water – Girard Point P142, Point Breeze equipment numbered P624 and P627.

IFRs – Girard Point Tanks P-012, , P-135, P-159, P-160, P-174,

EFRs – Girard Point Tanks P-006, P-155, P-162 and Point Breeze Tanks – P-521, P-546, , P624, P-627

(a) Work Practice Standards

(1) The Permittee shall meet the following standards for each tank

(i) Internal Floating Roof Tanks

(A) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(B) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(1) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(2) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(3) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(C) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(D) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(E) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being

floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(F) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(G) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(H) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(I) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(xi)]

(ii) External Floating Roof Tanks

(A) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(1) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. The seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(a) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(i) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(ii) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(2) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion

(a) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(i) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(ii) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(iii) There are to be no holes, tears, or other openings in the seal or seal fabric.

(B) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(C) The external floating roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

8. Group 27 – Emergency Generators and Fire Pumps

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each emergency generator and pump shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unite may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Emissions from the Fire Pump #4 (FP-010) shall not exceed the following:

(i) Non-methane Hydrocarbon and Nitrogen Oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr). [40 CFR 60.4205(c) and Table 4]

(ii) Carbon Monoxide (CO) emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(iii) Particulate Matter (PM) emissions shall not exceed 0.20 g/kW-hr (0.15 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(b) Work Practice

(1) Each emergency generator shall be operated only during emergencies, emergency testing, and engine tuning.

(i) Emergencies are defined as when the primary power source for the facility has been rendered inoperable by an unanticipated incident.

(ii) Testing for each generator is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the generator one time per year and is limited to four hours.

(2) Each emergency generator shall operate less than 500 hours per rolling 12-month period. [25 Pa Code §129.93]

(3) Each emergency generator and fire/mitigation pump shall be installed, maintained, and operated in accordance with manufacturer's specifications. [25 Pa Code §129.93]

(4) The Permittee shall only burn No.2 fuel oil in each Fire/Mitigation Pump. The maximum sulfur content of diesel fuel shall be 0.2 % by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

(i) The Fire Pump #4 (FP-010) shall only burn diesel fuel oil. The diesel fuel used in the fire pump shall meet the following requirements:

(A) The diesel fuel used in the emergency generator shall meet the following: [40 CFR 60.4207(b), 40 CFR 80.510(b)]

(1) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(2) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(5) The fire/mitigation pumps shall be operated only during emergencies, testing, and engine tuning. [AMS Installation Permit 11101 dated 6/24/11, AMS Installation Permit 11346-52 dated 2/23/12]

(i) Emergencies are defined as when there is significant drop in pressure in the fire water system or when an actual or suspected release of HF occurs and the mitigation pumps must be activated.

(ii) Testing for the fire pump is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the fire pump one time per year and is limited to four (4) hours.

(6) The Fire/Mitigation Pump shall operate less than 500 hours per rolling 12-month period.

(7) Sound levels produced by the emergency generator or pumps shall not exceed the following:

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property: or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(8) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(9) No testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps shall be performed on a day for which an Air Quality Forecast has predicted an Air Quality Action Day, or on an Air Quality Action Day [AMS XV, Sec III]

(10) Testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps during the ozone season, when not otherwise prohibited in Section D.9(b)(9), shall only be performed between the hours of 5:00 PM and 11:00 PM, except as follows: [AMS XV, Sec III]

(i) Facilities that are able to demonstrate compliance with Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) can perform testing and/or tuning between the hours of 5:00 PM and 7:30 AM.

(11) The Emergency Generators and Fire/Mitigation Pumps are exempt from the above condition in Section D.9(b)(9) and (10) during emergencies or emergency repairs regardless of the air quality. [AMS XV, Sec III]

(12) The Fire/Mitigation Pumps may be tested on the seventh day after six consecutive Air Quality Action Days, notwithstanding Section D.9.(b)(9) [AMR XV.Sec III.D]

(13) The Fire/Mitigation pump shall: [40 CFR 63.6602, Table 2c]

(i) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(14) The Permittee shall install a non-resettable hour meter if one is not already installed on each emergency generator and Fire/Mitigation pump.

(15) The Permittee shall develop a maintenance plan for the Fire/Mitigation Pumps which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

(16) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(17) The Belmont Firehouse Williams Pump (fire pump FP-019) shall operate less than 500 hours per rolling 12 month period. The fire pump shall be operated only during emergencies, testing, tuning, and fire training. [AMS Installation Permit 13170 dated 7/31/13]

(i) Emergencies are defined as the endangerment of lives, of equipment, possessions, and inventories by fire.

(ii) Testing for the Belmont Firehouse Williams Pump (fire pump FP-019) is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the Belmont Firehouse Williams Pump (fire pump FP-019) one time per year and is limited to four hours.

(iv) Fire training is limited to 16 hours per rolling 12 month period.

(18) The Belmont Firehouse Williams Pump (fire pump FP-019) shall be subject to 40 CFR 60 Subpart IIII if the fire pump is stationed at a location or a single site at the facility for a period of 1-year or more. [AMS Installation Permit 13170 dated 7/31/13]

(c) Testing Requirements [25 Pa Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(d) Monitoring Requirements

(1) The proper operation of each emergency generator and fire pump in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and sulfur content in fuel oil.

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) The Permittee shall provide verification or calculations to demonstrate compliance with the NOx emission limits in Section D.9 (a)(1) on a monthly basis and rolling 12-month basis. Verification may be based on AP-42, manufacturer's certified emission factors, or other AMS-approved emission factors;

(2) Operating hours for each emergency generator and fire/mitigation pump on a 12-month rolling basis

(3) The Air Quality Index (AQI) number or color code shall be determined and recorded when testing or tuning of an Emergency Generator and Fire/Mitigation Pump is conducted, to demonstrate compliance with Section D.9 (b)(9) and (12) [AMS XV, Sec IV]

(4) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(5) Manufacturer's engine compliance certification to demonstrate compliance with the applicable emission standards in 40 CFR 60.4205(b). [40 CFR 60.4211(c)]

(6) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(7) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.9.(b)(13)

(8) Date and location of the Belmont Firehouse Williams Pump (fire pump FP-019) each time the emergency fire pump is relocated to different site at the facility [AMS Installation Permit 13170 dated 7/31/13]

(f) Reporting Requirements

[25 Pa Code §127.442 & AMR I Sec. II]

(1) Any violation of an emission limitation that does not result from a malfunction requiring reporting under Section C.16 shall be reported (by phone call or facsimile transmission) to AMS within 24 hours of detection and followed by written notification within thirty-one (31) days.

9. Group 28. Internal Combustion Engines

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each source shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unit may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-002, IC-006, IC-007, IC-008, rIC-006, rIC-007) shall be limit to the following: [40 CFR §63.6602, Table 2c]

(i) Each pump and air compressor 100 ≤ hp ≤ 300 hp shall limit the CO concentration in the exhaust to 230 ppmvd or less at 15% O2

(5) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-008) shall not exceed 2.6 g/bhp/hr [AMS Installation Permit 12098-99, dated 8/6/12]

(6) IC-009 (the 147 hp flood control RICE) shall comply with the following emission requirements:

(i) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]

(ii) CO emissions shall not exceed 5.0 g/kW-hr or 3.7 g/hp-hr; [Tier 3 Engine]

(iii) PM emissions shall not exceed 0.30 g/kW-hr or 0.23 g/hp-hr. [Tier 3 Engine]

(7) IC-010 (the 275 hp flood control RICE) shall comply with the following emission requirements:

(i) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]

(ii) CO emissions shall not exceed 3.5 g/kW-hr or 2.6 g/hp-hr; [Tier 3 Engine]

(iii) PM emissions shall not exceed 0.20 g/kW-hr or 0.15 g/hp-hr. [Tier 3 Engine]

(b) Work Practice

(1) Each unit shall only burn fuel types as stated in Table A-1 Group 28.

(2) Sound levels produced by the fire pump shall not exceed the following: [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property: or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(3) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(4) The maximum hours of operation of each pump and air compressor shall be as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12, IP18-000373-374]

Sources	Per rolling 12-month average
rIC-001 ≤ 14 BHP pump	7821 hours
rIC-006 ≤ 101 BHP air compressor	2627 hours
rIC-007 ≤ 144 BHP pump	1984 hours
IC-002 (53P-800C pump)	458 hours
IC-005 (FE-5(2) Flood Control Pump Driver)	2300 hours
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	1150 hours
IC-007 (B-2623 Flood Control Pump Driver)	3050 hours
IC-008 (Engine Set 1290 (northside of 8 Sep))	360 hours
IC-009 Flood Control RICE For flood control at GP 2nd and J	500 hours
IC-010 Flood Control RICE For flood control at Girard point 2-separtor	500 hours

(5) Each pump and air compressor shall meet the minimum Tier level as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Tier Level*
rIC-001 ≤ 14 BHP pump	No Tier
rIC-006 ≤ 101 BHP air compressor	Tier 4
rIC-007 ≤ 144 BHP pump	Tier 3
IC-002 (53P-800C pump)	No Tier
IC-005 (FE-5(2) Flood Control Pump Driver)	No Tier
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	Tier 1
IC-007 (B-2623 Flood Control Pump Driver)	Tier 3
IC-008 (Engine Set 1290 (northside of 8 Sep))	Tier 2
IC-009 Flood Control RICE For flood control at GP 2nd and J	Tier 3
IC-010 Flood Control RICE For flood control at Girard point 2-separtor	Tier 3

*Tier level are based on 40 CFR 60 Subpart IIII

(6) Each pump and air compressor shall only burn diesel fuel. The diesel fuel shall meet the following requirements assuring compliance with 40 CFR 63.6604, 40 CFR §60.510(b)

(i) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(ii) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(7) For each pump and air compressor less than 100 hp (, rIC-001,): [40 CFR §63.6602, Table 2c, AMS Installation Permit 12000-03 dated 10/12/12]

(i) Change oil and filter every 1000 hours of operation or annually, whichever comes first;

- PES owned diesel pump shall use an oil analysis program as stated in 40 CFR 63.6625(i)

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(8) The Permittee shall maintain the pump and air compressor less than 100 hp according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the

maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6625(e)]

(9) The Permittee shall install a non-resettable hour meter if one is not already installed. [assures compliance with 40 CFR 63.6625(f)]

(10) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(11) IC-009 and IC-010 shall comply with the following:

(i) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.

(ii) Each flood control RICE may be operated during storm events for emergency water pumping to control flood.

(iii) Each flood control RICE may be operated for the purposes specified in paragraph (11)(i) for up to 100 hours per calendar year.

(iv) Each flood control RICE shall be installed, operated, and maintained in accordance with both the manufacturer's specification and the specifications in the application per IP18-000373-374.

(c) Testing Requirement

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted for approval to AMS at least 60 days prior to the test.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(3) The Permittee shall demonstrate initial compliance with the CO concentration in Section D.9(a)(4) on each pump or air compressor greater than 100 hp (, IC-002, IC-006, IC-007, IC-008, rIC-006, rIC-007) [40 CFR §63.6610(a) & 40 CFR §63.6612(a)]

(i) The performance test shall comply with 40 CFR 63 Subpart ZZZZ, Table 4 and 40 CFR §63.6620

(ii) During the initial performance test, the Permittee must establish each operating limitation

(d) Monitoring Requirements

The Permittee shall monitor:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and fuel usage and sulfur content in fuel oil.

(2) Each maintenance conducted on each pump and air compressor to demonstrate that the engines are operated and maintained in accordance to the maintenance plan. [40 CFR 63.6625(e) & 40 CFR 63.6655(e)]

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) NOx emission per rolling 12-month period, calculated monthly to demonstrate compliance with Section D9.(a)(1). Verification shall be based on AP-42 factors, manufacturer's specification, or other AMS approved emission factors.

(2) Daily operating hours, operating hours per rolling 12-month period calculated monthly to assure compliance with Section D.9.(b)(4)

(3) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(4) Manufacturer's engine compliance certification to demonstrate compliance with the Tier level in Section D.9.(b)(5)

(5) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(6) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.9.(b)(7)

(7) Performance tests

(8) For IC-009 and IC-010, the EPA Tier rating of each RICE.

(f) Reporting Requirements

(1) For each pump and air compressor, the Permittee shall report, in accordance with 40 CFR 63.6650, each instant in which there is a deviation in the emission limitation or operating limitation, [40 CFR 63.6640(b)]

(2) The Permittee shall submit Semi-Annual Compliance reports beginning with May 3, 2013. [40 CFR 63.6650]

(i) Each deviation of emission limitation and operating limitation that occurs during the reporting period shall be reported and the reports must contain

the following:

(A) The total operating time of each pump and air compressor at which the deviation occurred during the reporting period.

(B) Information on the number, duration, and cause of deviations (including unknown cause if applicable), as applicable and corrective action taken

(ii) If there are no deviations from any emission limitations or operating limitations, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period;

SECTION E. OPEN BURNING VARIANCE FOR TRAINING

(a) The Permittee may conduct controlled open burning for the firefighting and employee training as follows: [AMS Approval Letter January 25, 2011]

(1) The Permittee shall notify AMS – Facility Compliance Section at 215-685-7580 at least 24 hours prior to any controlled open burning.

(2) All controlled open burning shall follow the parameters specified in January 5, 2011 letter.

(i) The Permittee must obtain approval from AMS prior to changing any of th procedures listed in the January 5, 2011 letter.

(ii) AMS may modify or revoke the open burning variance approval if it is determined necessary to prevent air pollution problems.

SECTION F. NON APPLICABLE REQUIREMENTS

AMS has determined that the following regulations are not applicable to the facility:

Pennsylvania Regulations:

40 CFR 60 Subpart VV – Equipment Leaks
40 CFR 60 Subpart GGG – Equipment Leaks
40 CFR 60 Subpart GGGa – Equipment Leaks
40 CFR 60 Subpart QQQ – Petroleum Refineries Wastewater Systems
40 CFR 61 Subpart FF –Benzene Waste Operations
40 CFR 63 Subpart F -- Synthetic Organic Chemical Manufacturing Industry
40 CFR 63 Subpart G - Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
40 CFR 63 Subpart H - Equipment Leaks
40 CFR 63 Subpart Q –Industrial Process Cooling Towers
40 CFR 63 Subpart CC - Petroleum Refineries
40 CFR 63 Subpart UUU - Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
25 PA Code 123.13b – Processes - Petroleum Refining (catalytic cracking)
25 PA Code 129.13 – Sulfur Recovery Plants
25 PA Code 129.58 – Petroleum refineries – fugitive sources
25 PA Code 129.71 – Synthetic organic chemical and polymer manufacturing – fugitive sources25 Pa Code §123.12 – Incinerators

25 Pa Code §129.12 – Sulfuric Acid Plants

25 Pa Code §129.52 – Surface Coating Processes

25 Pa Code §129.54 – Seasonal Incineration Equipment

25 Pa Code §129.59 – Bulk Gasoline Terminals

25 Pa Code §129.60 – Bulk Gasoline Plants

25 Pa Code §129.65 – Ethylene Production Plants

25 Pa Code §129.82 – Control of VOC from gasoline dispensing facilities (Stage II)

NSPS Regulations:

40 CFR 60 Subpart D – Fossil fuel steam gen. units

40 CFR 60 Subpart D(a) – Fossil fuel electric utility boilers

40 CFR 60 Subpart D(c) – Small I/C/I steam gen. units

40 CFR 60 Subpart J – Petroleum refineries –

40 CFR 60 Subpart Ja

40 CFR 60 Subpart GG – Stationary gas turbines

40 CFR 60 Subpart UU – Asphalt roofing plants (stg. blowing of non-roofing asph.)

40 CFR 60 Subpart XX – Bulk Gasoline Terminals

MACT Regulations:

40 CFR 63 Subpart R – Gasoline Distribution (no gasoline loading in refinery)

40 CFR 63 Subpart Y – Mar. Ves. Ldg. – Gaso/Crude/HAP (facility does not trigger loading volume or HAP emission triggers)

40 CFR 63 Subpart DD – Offsite Waste

The following NESHAP regulations have been streamlined as a result of the applicability of related MACT regulations.

40 CFR 61 Subpart J – Bz VHAP Lks (10%w Bz) – 40 CFR 63 Subpart H has subsumed all previous 61/J applicabilities

40 CFR 61 Subpart V – VHAP Equipment Lks – 61/V is the technical section for Subpart J (see comment above)

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

SECTION H. SUNOCO MARCUS HOOK REFINERY

In August 2012, certain air contaminant sources related to petroleum refining and located in Sunoco Inc.'s Marcus Hook refinery which were permitted under Title V operating permit No. 23-00001 (originally issued on November 18, 2008) and the air contaminant sources located in Sunoco's Philadelphia refinery which are permitted

under Title V operating Permit No. V95-038 were determined to be a single facility for New Source Review (NSR), Prevention of Significant Deterioration (PSD) and Title V applicability purposes in accordance with a determination that the facilities were one source. As of July 6, 2013, after the change in ownership of both Marcus Hook and Philadelphia refinery air contaminant sources as well as permanent surrender of crude refining capabilities at Marcus Hook, the two facilities are no longer considered a single facility. However, PES continues to include emissions changes to air contaminant sources at the Marcus Hook refinery that occurred prior to July 6, 2013 for NSR, PSD, and Title V applicability purposes.

* This is a State requirement and is not Federally enforceable.

** This is a Local requirement and is not Federally enforceable.

CITY OF PHILADELPHIA
Department of Public Health
Environmental Protection Division
Air Management Services

InterOffice Memo

To: File

From: Rahel Gebrekidan

Date: November 18, 2021

Subject: Title V Operating Permit (TVOP) Summary for PESRM/ Former Refinery – NorthStar

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Company Description:

Philadelphia Energy Solutions Refining and Marketing LLC (PESRM) owns the former refinery complex located at 3144 Passyunk Ave, Philadelphia. The facility contact in regard to the TVOP is Robert J. Armstrong, (440) 228-1524 (rarmstrong@northstar.com).

All refining operations at the facility stopped after a June 2019 accident and subsequent bankruptcy. However, the facility must continue to operate some equipment during the demolition and clean-up process, including emergency engines, tanks, and wastewater treatment processes. PESRM is legally required to maintain an operating permit while there are remaining air pollution sources.

PESRM contracted with NorthStar Contracting Group, Inc. (NorthStar) to decommission and demolish the refining equipment at the Philadelphia Refinery Complex. PESRM will remain the owner of the former refinery, but NorthStar is the new operator and will be responsible for air quality compliance for equipment remaining in operation under Title V Operating Permit.

AMS administratively amended the TVOP on April 15, 2021 to list NorthStar Contracting Group, Inc. (NorthStar), the company hired to decommission and demolish the refining equipment at the Philadelphia Refinery Complex, as the facility operator. PESRM is still listed as the owner. The administrative amendment also added some previously issued plan approvals and general permits (permits to install or modify equipment) to the TVOP.

PESRM submitted an application to the City of Philadelphia – Air Management Services (AMS) to renew its existing TVOP. The application includes many proposed changes to the TVOP to reflect the current operations. These proposed changes include the following:

- Changing the Standard Industrial Classification (SIC) Code for the facility. This is a code that notes the industry that a facility belongs to. The application proposes changing this code from 2911 (Petroleum Refining) to 1795 (Wrecking and Demolition Work) since there is no longer any refining at the facility.
- Removing all shutdown equipment from the TVOP. This includes all refining processes.

- Removing all air pollution requirements that are no longer applicable to the facility due to the shutdown of processes and ceasing of refining operations. AMS will only remove air pollution requirements if it agrees that they are no longer applicable.
- Removing some storage tanks, marine loading, and railcar loading/unloading process from the TVOP. These units will be owned and operated by the adjacent Tank Farm and will be added to its TVOP as part of a permit modification.

SIC Code Change

Since the equipment at the NorthStar Facility is no longer engaged in petroleum refining, or manufacturing of any kind and the site's operators are engaged in decommissioning and demolishing the refinery process equipment, the site is no longer considered to be a petroleum refinery or a chemical manufacturing facility. Therefore, the facility SIC code should no longer be listed as 2911 in the facility permit. Instead, PESRM proposes that the SIC code be listed as 1795 – Wrecking and Demolition Work, as this is the primary activity under NorthStar's operations.
The refinery and the tank farm are no longer considered one facility under Title V, NSR, and PSD regulations since the SIC code has changed to reflect the current operational status of the refinery.

While petroleum refining has ceased, the facility remains a major source of volatile organic compounds (VOC) and hazardous air pollutant (HAP) emissions. Therefore, the site is still subject to Title V permitting requirements. With the application, PESRM requested a significant modification (in conjunction with the Title V renewal) to the PESRM TVOP to issue a modified TVOP authorizing operation of existing certain sources involved in the ongoing decommissioning and demolition activities being performed by NorthStar at the facility.

The remaining facility's air emissions sources include the following:

- Twelve (12) external floater storage tanks with capacities greater than 40 million gallons.
- Five (5) internal floating storage tanks, each with a capacity 40 million gallons;
- Seventeen (17) Petroleum Liquids Storage Tanks
- Degreasing Vats, wastewater, emergency generator and fire pump, internal combustion engines, and
- Equipment VOC Leak Components

Applicability for Regulations:
The facility is a major stationary source as defined in Title I, Part D of the Clean Air Act Amendments due to the facility's potential to emit Volatile Organic Compounds (VOC), NOx, HAP, CO, SOx and PM. The facility is therefore subject to the Title V operating Permit requirements adopted in 25 Pa Code §127, Subchapter G.

The refinery was subject to a Consent Decree (05-CV-2866) governing certain air requirements for the now-former refinery. On September 21, 2021, PESRM filed an Unopposed Motion to Terminate the Consent Decree as to the Philadelphia Refinery with approval from AMS and the U.S. Environmental Protection Agency. The Consent Decree was fully and finally terminated pursuant to court order on October 19, 2021.

Source Applicability

Equipment VOC Leak Components

The Permittee shall utilize a fugitive emission LDAR program for all valves, pumps, flanges, and compressors in VOC service per presumptive RACT requirement. Equipment leaks are subject to AMV V Section XIII. In accordance with AMV V Section XIII.D-the facility must conduct a monitoring program for equipment leaks per the requirements in the current Title V permit.

For any source not covered under an existing LDAR program, monitoring shall be conducted on a quarterly basis for equipment in gaseous service and on an annual basis for equipment in liquid service.

Storage Tanks

The facility operates Internal Floater Roof (IFR) and External Floating Roof (EFR) Tanks and fixed Petroleum Liquids Storage Tanks. Pursuant to 40 CFR 60.110b, NSPS Subpart Kb applies to affected facilities with a capacity greater than 75 cubic meters used to store volatile organic liquids (VOL) that commence construction, reconstruction, or modification after July 23, 1984. NorthStar is proposing to comply with NSPS Subpart Kb requirements for the following sources that are in petroleum liquid service or contain a layer of petroleum liquid on wastewater: P-006 (GP), P-012 (GP), P-135 (GP), P-155 (GP), P-159 (GP), P-160 (GP), P-162 (GP), P-174 (GP), P-521 (PB), P546 (PB), P-579 (PB), P-587 (PB), P-588 (PB), P-590 (PB), P624 (PB), P-627 (PB). All IFR, EFR and Fixed storage tanks are applicable to 25 Pa Code §129.56 and AMR V. Sec. II.

Pursuant to 40 CFR 63.640, 40 CFR 63 Subpart CC applies to certain petroleum refining process units at a petroleum refinery that is located at a major source of hazardous air pollutants. Per 40 CFR 63.641, petroleum refining process unit means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911), and used primarily for the following: (1) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants; (2) Separating petroleum; or (3) Separating, cracking, reacting, or reforming intermediate petroleum streams. (4) Examples of such units include, but are not limited to, petroleum-based solvent units, alkylation units, catalytic hydrotreating, catalytic hydro refining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, SIC code 2911 no longer applies and the facility is not subject to 40 CFR 63 Subpart CC. Since Consent Decree Order 05-CV-2866 was terminated pursuant to Court order on October 19, 2021, the Consent Decree requirements, which reference Subpart CC, are no longer applicable. Per the requirements of 40 CFR 63.2396(a), tanks which are in compliance with NSPS Subpart Kb requirements are in compliance with 40 CFR 63 Subpart EEEE except that records must be kept for 5 years rather than 2 years. According to 40 CFR 63.2338(b)(3), Subpart EEEE also applies to all equipment leak components in organic liquids service that are associated with storage tanks storing organic liquids and pipelines that transfer organic liquids to/from storage tanks storing organic liquids. The work practice requirements related to equipment leaks apply to pumps, valves, and sampling connections in organic liquids storage at least 300 hours per year and require compliance with 40 CFR Part 63, Subpart TT (control level 1), Subpart UU (control level 2), or Subpart H as applicable to pumps, valves and sampling connections. NorthStar shall comply with these requirements for the piping components associated with the crude oil and recovered oil storage tanks. All other tanks (non-crude oil and non-recovered oil storage)

remaining in operation at the NorthStar Facility will not contain greater than 5% HAP or will store products with a vapor pressure less than 0.1 psia.

Engines

The remaining diesel engines are subject to the Particulate Matter (PM) emission standards of 25 PA Code 123.13(c)(1)(i) and the CO emission standards of AMR VIII. During the ozone reason, the diesel fire pumps need to comply with the requirements of AMR XV.

The facility shall continue to comply with all appliable requirements for the remaining engines at the site. The facility shall monitor NOx emission per rolling 12-month period, calculated monthly to demonstrate compliance with Section D.31.(a)(1). Emission verification shall be based on AP-42 factors, manufacturer's specification, or other AMS approved emission factors.

Wastewater

NorthStar shall comply with NSPS Subpart Kb requirements for applicable wastewater tanks.

Plan Approvals and Installation Permits

AMS issued multiple installation permits and plan approval to PESRM in the last five years. A TVOP renewal application was submitted to AMS on January 18, 2019 which included incorporation of these various installation permits and plan approvals. PESRM requested that the plan approvals and IPs issued to PES be transferred to NorthStar and incorporated into the PESRM TVOP.

Removed section and sources

Section D – Facility – Reporting Requirements – sections related to reporting under the Consent Decree have been deleted since the Consent Decree has been terminated.

Group 01 – Boilers and Heater. NorthStar is requesting that all of the emission sources/members under this group be removed from the TVOP as they are all permanently shutdown.

Group 02 – Process Heaters. NorthStar is requesting that all of the emission sources/members under this group be removed from the TVOP as they are all permanently shutdown.

Group 03- *Flares*

All of the emission sources/members under this group have been removed from the TVOP as they are all permanently shutdown.

Group 04 – Loading Facilities and Control Equipment. All sources in this group are removed from the air permit as they are shutdown.

Group 05 – Sulfur Recovery Units. NorthStar is requesting that all of the emission sources/members under this group be removed from the TVOP as they are all permanently shutdown.

Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV. NorthStar is requesting that the group be deleted. Regulations: 40 CFR 60.480, 60.590, & 63.648; 25 Pa Code 129.58, and 40 CFR 61

Subpart J are no longer applicable. Since Consent Decree Order 05-CV-2866 was terminated, the Consent Decree requirements are no longer applicable.

Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components Subject to 40 CFR 63 Subpart H. NorthStar is requesting that the group be deleted. Regulations: 40 CFR 63.160-182; 25 Pa Code 129.571 are no longer applicable. Since Consent Decree Order 05-CV-2866 was terminated, the Consent Decree requirements are no longer applicable.

Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP. NorthStar is requesting that reference to 25 Pa Code 129.58 regulation be removed as it is no longer applicable. However, NorthStar will continue to comply with applicable requirements for case-by-case RACT and AMR V Section XIII A in this group. In addition, NorthStar requests to incorporate applicable section of 40 CFR 63 Subpart EEEE to the crude oil tanks remaining in operation at the facility.

Group 09 – Cooling Towers. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 10 – Miscellaneous Process Vents (Group 1) subject to 40 CFR 63 Subparts G and CC. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 13A – Tanks Subject to 40 CFR 63 Subpart G. NorthStar is requesting that: P-025 (GP), P-026 (GP), P-029 (GP), and P-163 (GP) be transferred to Host TVOP. Remaining emission sources/members be removed from the air permit as they are all permanently shutdown.

Group 13B – Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC. NorthStar is requesting that: P-012 (GP) be transferred to Group 13C as compliance with 40 CFR 60 Subpart Kb is deemed equivalent to compliance with 40 CFR 63 Subpart CC. Remaining emission sources/members be removed from the air permit as they are all permanently shutdown.

Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb. NorthStar is requesting that: P-012 (GP) be transferred from Group 13B and its stored material be updated from Crude Oil to Recovered Oil. The stored material in P-174 (GP) be updated from RCRA CC waste to Oily Wastewater. P-009 (GP), P-010 (GP), P-134 (GP), P-136 (GP) (temp inactive), P-137 (GP), P-501 (PB), and P-511 (PB) be removed from the air permit as they are all permanently shutdown.

Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC. P-521 (PB), P-546 (PB), P-579 (PB), P-587 (PB), P-588 (PB), P-590 (PB), and P-601 (PB) be transferred to Group 14C as compliance with 40 CFR 60 Subpart Kb is deemed equivalent to compliance with 40 CFR 63 Subpart CC. 40 CFR 63 Subpart CC is not applicable anymore since the facility is no longer considered as petroleum refinery. Remaining emission sources/members be removed from the air permit as they are all permanently shutdown.

Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent). NorthStar is requesting that: P-521 (PB), P-546 (PB), P-579 (PB), P-587 (PB), P-588 (PB), P-590 (PB), and P-601 (PB) be transferred from Group 14B. Additionally, the stored material in P-546 (PB) is being changed from Crude Oil to Recovered Oil.

Group 15A – Group 2 Storage Tanks. NorthStar is requesting that: The name of this group be updated from "Group 2 Storage Tanks" to "Petroleum Liquids Storage Tanks" because Group 2 refers to 40 CFR 63 Subpart CC, which is no longer applicable to this facility

Group 15B – Fixed Roof Tanks Subject to Subpart Kb Recordkeeping Requirements. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 17 – Marine Loading Equipment – This operation is being transferred to the SRTF.

Group 18 – Fluidized Catalytic Cracking Units. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 19 – Inter-Refinery Pipeline Equipment. NorthStar is requesting that the emission source/member under this group be removed from the air permit.

Group 20 – Alkylation Unit. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 21 – Hydrogen Purification. NorthStar is requesting that the emission source/member under this group be removed from the air permit as it is permanently shutdown.

Group 22 – Degreasing Vats. Except for P-108 (GP), (GP) Garage – Model E3000, (GP) Bundle Pad – 22 x 6 x 4 Bundle Cleaner (2960 gal), and (GP) Bundle Pad – 22 x 6 x 4 Bundle Cleaner (4578 gal) that remain in NorthStar air permit, NorthStar is requesting that the emission sources/members under this group be removed from the air permit as they are permanently shutdown.

Group 23 – Butane Isomerization. NorthStar is requesting that the emission source/member under this group be removed from the air permit as it is permanently shutdown.

Group 25A – Refining Wastewater. NorthStar is requesting that: The group name be updated from "Refining Wastewater" to "Wastewater" as the facility is no longer classified as petroleum refinery. CD-002, CD-003, CD-105, CD-010, CD-106, CD-107, and CD-007 be removed from the air permit air since operation of these units is no longer required by regulation. P-141 (GP) be removed from the air permit as these roughing filters are permanently out of service. "Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC" be removed from P-114 (GP) source name. Similarly, "40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC" be removed from P-667 (PB) source name. 40 CFR 61 Subpart FF and 40 CFR 63 Subpart CC are no longer applicable. -Since Consent Decree Order 05-CV-2866 was terminated, the Consent Decree requirements are no longer applicable.

Group 25B – SOCMI Wastewater. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 26 – Benzene and Cumene Production. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

Group 27 – Emergency Generator and Fire Pump. NorthStar is requesting that FP-017 and FP-018 be removed from the air permit as they are both permanently shutdown.

Group 28 – Internal Combustion Engines. NorthStar is requesting that IC-002 through IC-005 be removed from the air permit as they are all permanently shutdown.
Group 29 – Stacks. NorthStar is requesting this group to be appropriately updated based on the revision requested above.

Compliance Summary
At this time, there is no outstanding non-compliance pursuant to the TVOP at the former refinery. AMS submitted Notices of Violation (NOVs) dated August 30, 2021 and proposed civil penalties on October 1, 2021 to each PESRM and NorthStar in connection with an incident at Tank 885 during the course of tank demolition. As of the date of this Memorandum, the NOVs and civil penalties have been fully resolved.

Non-Applicability
AMS has determined that the facility or sources is not subject to the following:

40 CFR 60 Subpart VV – Equipment Leaks
40 CFR 60 Subpart GGG – Equipment Leaks
40 CFR 60 Subpart GGGa – Equipment Leaks
40 CFR 60 Subpart QQQ – Petroleum Refineries Wastewater Systems
40 CFR 61 Subpart FF –Benzene Waste Operations
40 CFR 63 Subpart F -- Synthetic Organic Chemical Manufacturing Industry
40 CFR 63 Subpart G - Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
40 CFR 63 Subpart H - Equipment Leaks
40 CFR 63 Subpart Q –Industrial Process Cooling Towers
40 CFR 63 Subpart CC - Petroleum Refineries
40 CFR 63 Subpart UUU - Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
25 PA Code 123.13b – Processes - Petroleum Refining (catalytic cracking)
25 PA Code 129.13 – Sulfur Recovery Plants
25 PA Code 129.58 – Petroleum refineries – fugitive sources
25 PA Code 129.71 – Synthetic organic chemical and polymer manufacturing – fugitive sources 25 Pa Code §123.12 – Incinerators

25 Pa Code §129.12 – Sulfuric Acid Plants

25 Pa Code §129.52 – Surface Coating Processes

25 Pa Code §129.54 – Seasonal Incineration Equipment

25 Pa Code §129.59 – Bulk Gasoline Terminals

25 Pa Code §129.60 – Bulk Gasoline Plants

25 Pa Code §129.65 – Ethylene Production Plants

25 Pa Code §129.82 – Control of VOC from gasoline dispensing facilities (Stage II)

NSPS Regulations:

40 CFR 60 Subpart D – Fossil fuel steam gen. units

40 CFR 60 Subpart D(a) – Fossil fuel electric utility boilers

40 CFR 60 Subpart D(c) – Small I/C/I steam gen. units

40 CFR 60 Subpart J – Petroleum refineries –

40 CFR 60 Subpart Ja – Petroleum refineries

40 CFR 60 Subpart GG – Stationary gas turbines

40 CFR 60 Subpart UU – Asphalt roofing plants (stg. blowing of non-roofing asph.)

40 CFR 60 Subpart XX – Bulk Gasoline Terminals

MACT Regulations:

40 CFR 63 Subpart R – Gasoline Distribution (no gasoline loading in refinery)

40 CFR 63 Subpart Y – Mar. Ves. Ldg. – Gaso/Crude/HAP (facility does not trigger loading volume or HAP emission triggers)

40 CFR 63 Subpart DD – Offsite Waste

The following NESHAP regulations have been streamlined as a result of the applicability of related MACT regulations.

40 CFR 61 Subpart J – Bz VHAP Lks (10%w Bz) – 40 CFR 63 Subpart H has subsumed all previous 61/J applicability

40 CFR 61 Subpart V – VHAP Equipment Lks – 61/V is the technical section for Subpart J (see comment above)

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicability

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicability

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

Title V OP Number: _____
Date: _____

TITLE V OPERATING PERMIT APPLICATION

Section 1 - General Information

1.1 Application Type

Type of permit for which application is made: (Check one)

☐ Initial

☒ Renewal Operating Permit No. V06-016 renewal and Amendment No. OP20-000051, modification to the existing permit

☐ Application Revision - provide date of original Title V Application or OP No.: _____

1.2 Plant Information

Federal Tax ID/Plant Code: 13-3879343

Firm Name: NorthStar Contracting Group, Inc.

Plant Name: Philadelphia Energy Solutions Refining and Marketing, LLC

NAICS Code: 238910

SIC Code: 1795

Description of NAICS Code: Site Preparation Contractors

Description of SIC Code: Wrecking and Demolition work

County: Philadelphia

Municipality: Philadelphia

Latitude: 39.902434

Longitude: -75.224849

Horizontal Reference Datum:

Horizontal Collection Method:

Reference Point:

1.3 Contact Information

Name: Robert J. Armstrong

Title: Sr. Project Manager

Address: 2250 E Adams Ave
Philadelphia, PA, 19124

Telephone Number: 440-228-1524

Email Address: rarmstrong@northstar.com

1.4 Certification of Truth, Accuracy and Completeness

Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

(Signed) _____ Date: 7/16/2021

Name (Typed): Gary Bowman Title: President

Section 2 - Applicable Requirements for the Entire Site

Describe and cite all applicable requirements pertaining to the entire site.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list site level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Citation No.	Citation Limitation	Limitation Used

Section 3 - Site Inventory – Current Through July 2021

Give a complete list of all air pollution sources, control equipment, emission points, and fuel material locations within this site.

For renewals, only list sources not included in current Title V Operating Permit or sources which are now subject to Compliance Assurance Monitoring (CAM) requirements of 40 CFR Part 64. If preprinted information is provided, correct and/or add any new sources as necessary. Note: One (1) of the following sections (5, 6 or 7) of the application must be completed for each new source listed here.

Unit ID	Company Designation	Unit Type	CAM
P-117 (GP)	CD012 1231 Flare – Unit 1232	Flare	
P-118 (GP)	CD013 1232 Flare – Unit 1232	Flare	
P-012 (GP)	T-272, IFR containing Recovered Oil	Process	
P-135 (GP)	T-767, IFR containing Recovered Oil	Process	
P-159 (GP)	T-1086, containing Spent Caustic	Process	
P-160 (GP)	T-1087, containing Spent Caustic	Process	
P-174 (GP)	T-1007, containing Oily Wastewater	Process	
P-006 (GP)	T-228, EFR containing Stormwater/Process Water	Process	
P-155 (GP)	T-844 containing #2 Separator Water	Process	
P-162 (GP)	T-1136 containing #4 Separator Water	Process	
P-521 (PB)	Tank #117, EFR containing Recovered Oil	Process	
P-546 (PB)	Tank #191, EFR Containing Recovered Oil	Process	
P-579 (PB)	Tank #826, EFR containing Crude Oil	Process	
P-587 (PB)	Tank #840, EFR containing Crude Oil	Process	
P-588 (PB)	Tank #841, EFR containing Crude Oil	Process	
P-590 (PB)	Tank #843, EFR, >40M Gal, Crude Oil	Process	
P-601 (PB)	Tank #883, EFR containing Crude Oil	Process	
P-624 (PB)	Tank # 7300, EFR containing Stormwater/Process Water	Process	
P-627 (PB)	Tank #7308, EFR containing Stormwater/Process Water	Process	
P-032 (GP)	T-273, Fixed Roof containing Resid	Process	
P-036 (GP)	T-282, Fixed Roof containing Gas Oil or Cat Charge Stock	Process	
P-037 (GP)	T-284, Fixed Roof containing Gas Oil or Cat Charge Stock	Process	
P-039 (GP)	T-494, Fixed Roof containing Main Fract	Process	
P-144 (GP)	T-219 containing Light Cycle Oil	Process	
P-147 (GP)	T-227 containing Main Fract Bottoms	Process	

P-153 (GP)	T-794 containing Tetra Ethylene Glycol	Process	
P-154 (GP)	T-796 containing Tetra Ethylene Glycol	Process	
P-175 (GP)	T-3000 containing Lube Oil	Process	
P-176 (GP)	T-3001 containing Lube Oil	Process	
P-177 (GP)	T-3002 containing Lube Oil	Process	
P-178 (GP)	T-3004 containing Lube Oil	Process	
P-179 (GP)	T-3005 containing Lube Oil	Process	
P-529 (PB)	Tank # 144 containing Main Fract Bottoms	Process	
P-530 (PB)	Tank # 145 containing Main Fract Bottoms	Process	
P-534 (PB)	Tank # 151, EFR containing Gas Oil	Process	
P-582 (PB)	Tank #833, IFR containing Gas Oil	Process	
P-108 (GP)	Degreasing Vats	Process	
(GP) Bundle Pad	22 x 6 x 4 Bundle Cleaner	Process	
(GP) Bundle Pad	22 x 6 x 4 Bundle Cleaner	Process	
(GP)	Garage – Model E3000	Process	
P-131 (GP)	4A API Separator – WWT	Process	
P-132 (GP)	2B API Separator – WWT	Process	
P-639 (PB)	API Separators A&B – Bio Plant	Process	
P-114 (GP)	Wastewater	Process	
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant	Process	
P-641 (PB)	Bio Plant Sewer System	Process	
P-667 (PB)	Wastewater Sources	Process	
P-142 (GP)	T-1142, T-1143 – Oxidation Tanks (WWTP)	Process	
EM-001	Caterpillar (model 3412DITTA) EGen	Emergency Combustion Unit	
FP-010	24PEN4 Fire Pump #4	Emergency Fire Pump	
FP-011	24P1 Fire Engine (Haenn's Wharf)	Emergency Fire Pump	
FP-012	Fire Pump (1st and Wharf #8)	Emergency Fire Pump	
FP-013	24P2 North Fire Pump (Haenn's Wharf)	Emergency Fire Pump	
FP-014	24P3 South Fire Pump (Short Pier)	Emergency Fire Pump	
FP-015	24PEN5 Fire Pump (North Yard)	Emergency Fire Pump	
FP-016	24PEN6 Fire Pump (North Yard Wharf)	Emergency Fire Pump	
FP-019	Belmont Firehouse Williams Pump	Emergency Fire Pump	
IC-002	53P-800C pump	Combustion Unit	
IC-005	FE-5(2) Flood Control Pump Driver	Combustion Unit	

IC-006	Godwin 894572/4 Flood Control	Combustion Unit	
IC-007	B-2623 Flood Control Pump Driver	Combustion Unit	
IC-008	Engine Set 1290	Combustion Unit	
IC-009	Flood Control RICE	Combustion Unit	
IC-010	Flood Control RICE	Combustion Unit	
rIC-001	Rental back-up pump	Combustion Unit	
rIC-006	Rental back-up air compressor	Combustion Unit	
rIC-007	Rental back-up pump	Combustion Unit	
S-131 (GP)	Used by P-131, 4A API Separator Unit – WWT	Stack	
S-132 (GP)	Used by P-132, 2B API Separator Unit – WWT	Stack	
S-144 (GP)	Used by P-108 Degreasing Vats	Stack	
S-150 (GP)	Used by P-114,	Stack	
S-153 (GP)	Used by P-117, 1231 Flare	Stack	
S-154 (GP)	Used by P-118, 1232 Flare	Stack	
S-205 (GP)	Used by P-006, T-228	Stack	
S-211 (GP)	Used by P-012, T-272	Stack	
S-231 (GP)	Used by P-032, T-273	Stack	
S-235 (GP)	Used by P-036, T-282	Stack	
S-236 (GP)	Used by P-037, T-284	Stack	
S-238 (GP)	Used by P-039, T-494	Stack	
S-246 (GP)	Used by P-135, T-767	Stack	
S-253 (GP)	Used by P-142, Two oxidation tanks (101 and 102)	Stack	
S-856 (PB)	Used by P-521, Tank #117	Stack	
S-864 (PB)	Used by P-529, Tank #144	Stack	
S-865 (PB)	Used by P-530, Tank #145	Stack	
S-869 (PB)	Used by P-534, Tank #151	Stack	
S-881 (PB)	Used by P-546, Tank #191	Stack	
S-914 (PB)	Used by P-579, Tank #826	Stack	
S-917 (PB)	Used by P-582, Tank #833	Stack	
S-922 (PB)	Used by P-587, Tank #840	Stack	
S-923 (PB)	Used by P-588, Tank #841	Stack	
S-924 (PB)	Used by P-590, Tank #843	Stack	
S-959 (PB)	Used by P-624, Tank #7300 –Bio Plant	Stack	
S-962 (PB)	Used by P-627, Tank #7308 – Bio Plant	Stack	
S-973 (PB)	Used by P-639, Bio Plant DNF Unit A&B	Stack	

S-974 (PB)	Used by P-640, Bio Plant Sewer System	Stack	
S-975 (PB)	Used by P-641, Bio Plant Sewer System	Stack	
S-990 (PB)	Used by P-667,	Stack	
S3412 (PB)	Used by EM-001	Stack	

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
03	P-117 (GP) - CD012
03	P-118 (GP) – CD013

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	See Requirements at the Source Level		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
08	Equipment VOC Leak Components Not Subject to NSPS or NESHAP

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
08 For Crude Oil and Recovered Oil Tanks Only	40 CFR 63.2346(c)		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
13C	P-135 (GP)
13C	P-159 (GP)
13C	P-160 (GP)
13C	P-174 (GP)
13C	P-012 (GP)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	There are no changes to Group 13C Requirements		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
14C	P-006 (GP)
14C	P-155 (GP)
14C	P-162 (GP)
14C	P-521 (PB)
14C	P-546 (PB)
14C	P-579 (PB)
14C	P-587 (PB)
14C	P-588 (PB)
14C	P-590 (PB)
14C	P-601 (PB)
14C	P-624 (PB)
14C	P-627 (PB)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	There are no changes to Group 14C Requirements		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
15A	P-032 (GP)
15A	P-036 (GP)
15A	P-037 (GP)
15A	P-039 (GP)
15A	P-144 (GP)
15A	P-147 (GP)
15A	P-153 (GP)
15A	P-154 (GP)
15A	P-175 (GP)
15A	P-176 (GP)
15A	P-177 (GP)
15A	P-178 (GP)
15A	P-179 (GP)
15A	P-529 (PB)
15A	P-530 (PB)
15A	P-534 (PB)
15A	P-582 (PB)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	See Requirements at the Source Level		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
22	P-108 (GP)
22	(GP) Garage
22	(GP) Bundle Pad
22	(GP) Bundle Pad

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
25A	P-131 (GP)
25A	P-132 (GP)
25A	P-639 (PB)
25A	P-114 (GP)
25A	P-640 (PB)
25A	P-641 (PB)
25A	P-667 (PB)
25A	P-142 (GP)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
27	EM-001
27	FP-010
27	FP-011
27	FP-012
27	FP-013
27	FP-014
27	FP-015
27	FP-016
27	FP-019

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	See Requirements at the Source Level		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
28	IC-002
28	IC-005
28	IC-006
28	IC-007
28	IC-008
28	IC-009
28	IC-010
28	rIC-001
28	rIC-006
28	rIC-007

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	See Requirements at the Source Level		

01501

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

Title V OP Number: _____
Date: _____

TITLE V OPERATING PERMIT APPLICATION

Section 1 - General Information

Source Registration
Air Management Services
JAN 23 2019
RECEIVED
DSW

1.1 Application Type

Type of permit for which application is made: (Check one)

☐ Initial

☒ Renewal Operating Permit No. V06-016

☐ Application Revision - provide date of original Title V Application or OP No.: OP19-000004

1.2 Plant Information

Federal Tax ID/Plant ID: 61-1689574 **Firm Name:** Philadelphia Energy Solutions Refining and Marketing LLC

SIC Code: 2911 **Plant Name:** Philadelphia Energy Solutions Refining and Marketing LLC

Description of SIC: Petroleum Refining

UTM Zone: 18 **UTM North:** 4419.144 **UTM East:** 482.671

Method of Obtaining UTM: Transverse Mercator Calculator

1.3 Contact Information

Name: Janet Ferris **Title:** Environmental Manager

Address: 3144 Passyunk Avenue, Philadelphia, PA 19145

Telephone Number: 215-339-7146

1.4 Certification of Truth, Accuracy and Completeness

Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

(Signed) Mark O. Brandon **Date:** 1/17/19

Name (Typed): Mark O. Brandon **Title:** Vice President and General Manager

Philadelphia Refining Complex
Environmental Planning Department
Philadelphia Energy Solutions Refining and Marketing LLC
3144 W Passyunk Avenue
Philadelphia, PA 19145-5208
215-339-2000

PHILADELPHIA ENERGY SOLUTIONS

January 17, 2019

Mr. Edward Wiener
Chief, Source Registration
Air Management Services
321 University Avenue
Philadelphia, PA 19104

Re: Philadelphia Energy Solutions Refining and Marketing LLC (PES)
Title V Operating Permit No. V06-016
Renewal Application for Title V Operating Permit No. V06-016

Dear Mr. Wiener,

Enclosed please find the Title V Operating Permit Renewal Application for Philadelphia Energy Solutions Refining and Marketing LLC (PES). The facility currently operates under Title V Operating Permit (TVOP) No. V06-016 which is due to expire on 18 July 2019.

This Title V Operating Permit Renewal Application includes the following:

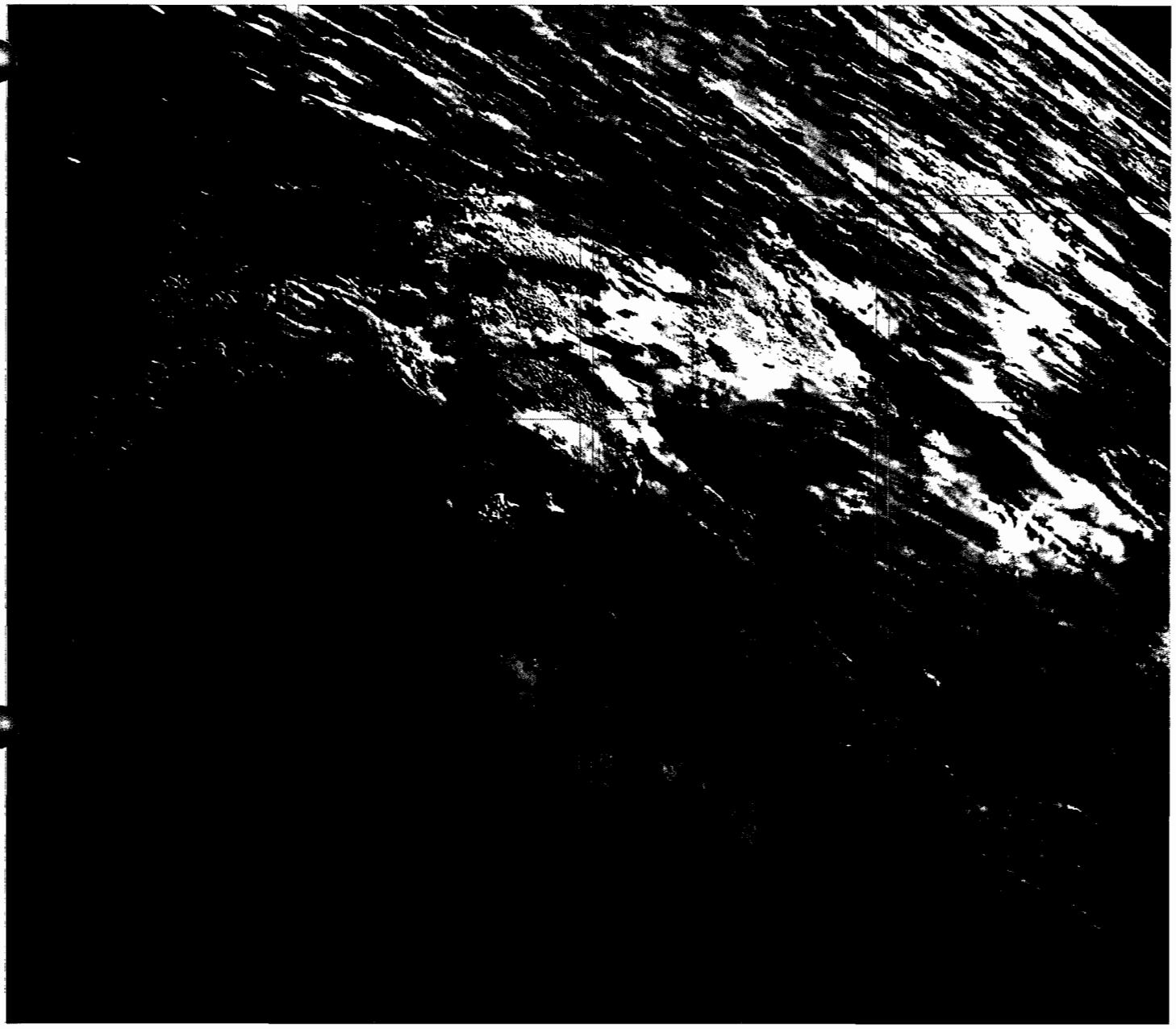
- Check for $750.00 to cover AMS Title V Renewal Fees;
- Narrative analysis to complement application forms;
- City of Philadelphia AMS Title V Renewal Application Forms in **Attachment A** (highlighted text represents a change of Source ID);
- Site Location Map and Process Flow Diagrams in **Attachment B**;
- AMS Addendum 1 Method of Compliance Worksheets in **Attachment C**;
- Detailed CAM Non-Applicability Determination and Associated Worksheets in **Attachment D**;
- List of Proposed Changes to Title V/State Operating Permit No. V06-016 in **Attachment E**;
- Two versions of the Title V/State Operating Permit No. V06-016 – With & without Tracked Changes in **Attachment F**;
- Plan Approvals, Operating Permits, Registration(s), or Exemption(s) To Be Incorporated into the Title V/State Operating Permit in **Attachment G**; and
- Most Recent Annual Title V Compliance Certification in **Attachment H**.

Please contact me at charles.barksdale@pes-companies.com or (215) 339-2074 if you have any questions.

Respectfully,

Charles D. Barksdale, Jr., PE
Director, Environmental Planning

Attachment A
City of Philadelphia AMS Title V
Renewal Application Forms



Title V Permit V06-016 Renewal Application Package, Volume I

Philadelphia Energy Solutions R&M LLC
Philadelphia, PA

PHILADELPHIA ENERGY SOLUTIONS

January 2019

Environmental Resources Management
75 Valley Stream Parkway, Suite 200
Malvern, Pennsylvania 19355
(484) 913-0300

www.erm.com

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The business of sustainability

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LIST OF ATTACHMENTS

LIST OF TABLES

1.0 INTRODUCTION

Philadelphia Energy Solutions Refining and Marketing, LLC (PES) owns and operates a petroleum refining complex in Philadelphia, Pennsylvania. The complex has two refineries, Girard Point, which is located near the Platt Bridge, and Point Breeze, which is located near the Passyunk Avenue Bridge. Collectively the Plant ID of the two refineries is 01501, and is operated under Title V/State Operating Permit No. V06-016 issued July 18, 2014 and amended and reissued on September, 11 2015 by the City of Philadelphia Department of Public Health Air Management Services (AMS). The current Title V/State operating permit has an effective date of 18 July 2014 and an expiration date of 18 July 2019. This is the renewal application for the refinery Title V Permit required to be submitted in accordance with AMS regulations at least six (6) and not more than 18 months before the expiration of the existing permit.

The following document describes permitted refinery projects and regulatory analyses performed since the initial Title V Permit was issued that need to be incorporated in the permit renewal. Additional AMS Title V renewal application forms and refinery related information is provided in the attachments as follows:

- City of Philadelphia AMS Title V Renewal Application Forms (Attachment A);
- Site Location Map/Process Flow Diagrams (Attachment B);
- AMS Addendum 1 Method of Compliance Worksheets (Attachment C);
- Detailed CAM Non-Applicability Determination Sheet (Attachment D);
- List of Proposed Changes to Title V/State Operating Permit No. V06-016 (Attachment E);
- Two versions of Title V/State Operating Permit No. V06-016 with Proposed Changes – With & without Tracked Changes (Attachment F);
- Plan Approvals, Operating Permits, Registrations, Notifications, or Exemptions Issued to be incorporated into Title V/Sate Operating Permit (Attachment G); and
- Most Recent Annual Title V Compliance Certification (Attachment H).

2.0 *UPDATED FACILITY INVENTORY*

Table A-1 of current Title V Permit V06-016 provides a facility inventory list for the PES Philadelphia Refinery. The most recent Title V Permit was issued July 18, 2014 (amended and reissued on September 11, 2015); permitted activities at the refinery since that time have added, modified, and removed equipment at the facility. The following sections specifically identify where the Title V Permit facility inventory requires updating.

2.1 *EQUIPMENT TO ADD TO TITLE V PERMIT NO. V06-016*

Permitted activities at the PES Philadelphia Refinery have modified or added new emission sources at the facility. The following six (6) Plan Approvals/Installation Permits approved by AMS include emission sources that need to be added to the Title V Permit.

1) Installation Permit No. 14045 issued 8 April 2014

   Installation Permit No. 14045 was issued 8 April 2014 approving plans for the installation and operation of a butane railcar loading and unloading facility. The butane stream is transferred to the butane bullet or to the Schuylkill River Tank Farm (SRTF) sphere tanks SR-73 – SR-78 through the inter-refinery pipeline (IRPL), P-664 (PB).

2) Plan Approval No. 14149 issued 2 September 2014

   Plan Approval No. 14149 was issued 2 September 2014 approving plans for the installation and operation of a 350 MMBTU/hr boiler (Boiler #45). The boiler was fitted with low NOx burners (LNB), flue gas recirculation (FGR), CO Oxidation catalyst, selective catalytic reduction (SCR) system, a wet electrostatic precipitator (WESP), and continuous oxygen trim system.

3) Plan Approval No. 15253 issued 22 September 2016

   Plan Approval No. 15253 was issued 22 September 2016 and reissued 20 December 2017 to approve modifications of the 864 Unit, 1332 Unit, and 870 Unit, including the installation and operation of Unit 870 H-3 heater. The heater is equipped with ultra-low NOx burners (ULNB). Additionally, a new H_2S CEMs was installed to demonstrate compliance with the 40 CFR 60.104(a)(1) emission limit for all three 870 Unit Heaters.

4) Installation Permit No. 14219-14220 issued 11 August 2014

Installation Permit No. 14219-14220 was issued 11 August 2014 to approve the installation and operation of two (2) permanent Tier 4 diesel fired pumps for the Butane Terminal Firewater System.

5) Installation Permit No. 13020B issued 20 March 2015[1]

Installation Permit No. 13020B was issued 20 March 2015 to amend AMS Installation Permit 13020 (dated 8 April 2013) which approved the installation and operation of Two (2) Crude Rail Car Unloading facilities at Point Breeze (PB). Additionally, the amendment combined AMS IP 13020 and AMS IP 14106.

6) Installation Permit No. 11276 issued 6 February 2012

Installation Permit No. 11276 was issued 6 February 2012 to permit a small Warehouse Boiler rated for 5.23 MMBtu/hr. This boiler was installed in 1982 but AMS requested that Sunoco (now PES) submit an application to have it be a permitted source.

7) Plan Approval No. IP16-000225 issued 30 April 2018

Plan Approval No. IP16-000225 was issued 30 April 2018 for installation of a permanent ammonia injection system on 868 Fluidized Catalytic Cracking Unit (FCCU) to reduce opacity in the flue gas. Additionally, the plan approval modified 868 FCCU emission limits listed in Condition D.21(a)(1) of the Title V Operating Permit No. V06-016 to include new permit limits, correct language incorporated from Plan Approval No. 00184, and incorporate EPA policy on emission limit exemptions during start-up, shut-down, and malfunctions.

8) Installation Permits IP18-000373 & 374 issued 9 November 2018

Installation Permits IP18-000373 & 374 were issued 9 November 2018 for the installation of two Emergency Flood Control RICEs.

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[1] AMS Installation Permit No. 13020B was issued to remove Condition 8 in AMS Installation Permit 13020, and combined AMS Installation Permits 13020 and 14106 (dated 8 April 2013 and 27 May 2014, respectively). Permit No. 13020B was amended on 20 March 2015 to incorporate a change of ownership from PES Refining and Marketing LLC (PES R&M) to North Yard Logistics, LP, which is under control of PES Holdings, LLC. PES Holdings, LLC also owns PES R&M.

Table 2-1 provides the emission point specific information to incorporate these additional emission sources into the refinery Title V Permit.

Table 2-1 Emission Sources to be Added to Permit V06-016

Permit Number	Proposed ID Group	Source Name	Unit Type	Fuel	Construction Date
IP 14045	P-637	Butane Loading/Unloading Station	Process	NA	2014
14149	CU-022 (GP)	#45 Boiler	Combustion Unit	Refinery Fuel Gas/Natural Gas	2014
15253	CU-140 (PB)	H3 Heater – Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	Combustion Unit	Refinery Fuel Gas/Natural Gas	2018
IP 14219-14220	FP-020	Butane Terminal Firewater System Pump #1 (JX6H-UFADF0)	Combustion Unit	ULSD	2014
IP 14219-14220	FP-021	Butane Terminal Firewater System Pump #2 (JX6H-UFADF0)	Combustion Unit	ULSD	2014
IP 13020B	P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities	Process	NA	2013
IP 11276	CU-025 (PB)	Warehouse Boiler No. 1	Combustion Unit	Fuel Oil No. 2/Natural Gas	1982
IP18-000373	EM-002 (GP)	Flood Control RICE at GP 2nd and J	Emergency Combustion Unit	Diesel	2018
IP18-000374	EM-003 (GP)	Flood Control RICE at GP 2-separator	Emergency Combustion Unit	Diesel	2018

Attachment A includes additional detailed information regarding this equipment, including regulatory applicability analyses to determine the federal, Pennsylvania, and AMS source applicable requirements. The Title V Permit facility inventory list will also have to be updated with the emission point stacks for these new emission sources. Table 2-2 provides a listing of the emission point stacks to be added to the Title V Permit from new emission sources.

Table 2-2 Emission Point Stacks to be Added to Permit V06-016

Unit ID	Emission Stack/Source Description	Emission Stack Diameter (m)	Emission Stack Height (m)	Emission Stack Base Elevation (m)
S-979 (PB)	Source of Air Emission from P-644, Two (2) Crude Rail Car Unloading Facilities	Not Applicable (Fugitive Source)	Not Applicable (Fugitive Source)	Not Applicable (Fugitive Source)
S-126 (GP)	Point of Air Emission Used by CU-022, #45 Boiler	1.962	45.720	4.570
S-127 (PB)	Point of Air Emission Used by CU-025, Warehouse Boiler No. 1	Not Available	Not Available	Not Available
S-8703 (PB)	Point of Air Emission Used by CU-139, Unit 870, H3 Heater	1.829	45.720	3.962
S-3413 (GP)	Point of Air Emission Used by EM-002 (GP)	Not Available	Not Available	Not Available
S-3414 (GP)	Point of Air Emission Used by EM-003 (GP)	Not Available	Not Available	Not Available

Attachment A includes additional detailed information regarding these emission point stacks.

2.2 *EQUIPMENT TO BE REACTIVATED IN TITLE V PERMIT NO. V06-016*

Due to changes in environmental regulations, market demand, and typical equipment upgrades, emission sources have been reactivated via minor permitting actions since the last renewal/amendment of the Title V Permit. Table 2-3 below provides a complete listing of emission sources that have been reactivated and should be considered active according to the Title V Permit.

Table 2-3 Emission Sources to be reactivated in Title V Permit No. V06-016

Permit Number	Title V ID	Source Name	Unit Type	Fuel	Permitted Reactivation Date
PA No. 13260	P-643/CD-112	South Yard South Flare	Process/Control Device	NA	18 July 2014
GP No. 14228	P-015	Tank GP-285	Process	Distillate Components	29 August 2014
GP-17000004	P-026	Tank GP-1208	Process	Benzene	1/20/2017
GP No. IP17-000133	P-144	Tank GP-219	Process	Cutter Stock	5/15/2017
GP-17000005	P-163	Tank GP-1209	Process	Benzene	1/20/2017
GP-16000034	P-165	Tank GP-1212	Process	Cumene	4/27/2016
GP. No. 13001	P-590	Tank PB-843	Process	Crude	1/22/2013
GP No. 15101	P-510	Tank PB-36	Process	Gasoline Components	24 March 2015
GP No. IP16-00009	P-537	Tank PB-162	Process	Gasoline Components	9 March 2016
GP No. IP17-000514	P-595	Tank PB-848	Process	Distillate Components	8 January 2018

2.3 *EQUIPMENT TO REMOVE FROM TITLE V PERMIT NO. V06-016*

Due to changes in environmental regulations, market demand, and typical equipment upgrades, emission sources have been removed from the facility since the most recent Title V Permit. Additionally, equipment has been taken out of service without the intention of bringing it back into the same service. Table 2-4 provides a complete listing of the emission sources to be removed from the Title V Permit.

Table 2-4 Emission Sources to be Removed from Permit V06-016

ID Group	Source Name	Rating/Capacity	Fuel/Material	Unit Type
P-646 (PB)	Flares (2), Emergency Sulfur Plant	NA	Refinery Gas / Natural Gas	Control Device

Attachment A includes additional information regarding this equipment to be removed from the Title V Permit. The removal of the two (2) Emergency Flares at the Sulfur Plant was permitted under Installation Permit Nos.: IP18-000260 & IP18-000263 on 26 September 2018. The source is still on-site but will no longer operate as described in V06-016. Removing this equipment from the refinery Title V Permit subsequently requires that the emission point stack listing be updated. The emission point stacks identified in Table 2-5 need to be removed from the Title V Permit as the emission sources have been removed.

Table 2-5 Emission Point Stacks to be Removed from Permit V06-016

ID Group	Source Name
S-980 (PB)	Used by P-646, Two Emergency Sulfur Plant Flare (Unit 867)

3.0 *ISSUED* PLAN APPROVALS, INSTALLATION PERMITS, OPERATING PERMITS TO BE INCORPORATED INTO THE TITLE V/STATE OPERATING PERMIT

As mentioned previously, the renewal to Title V Permit V06-016 was submitted in 2006 and the permit was issued in July 2014 and amended in September 2015. Since this time, PES has been issued numerous Plan Approvals and Operating Permits and submitted various regulatory registrations/notifications. Sections 3 and 4 identify the permitted and regulatory notification activities respectively, which PES Philadelphia Refinery has undergone since the most recent renewal of the Title V Permit was issued.

Table 3-1 provides a listing of all Plan Approvals/Installation Permits issued for the PES Philadelphia Refinery since the Title V Permit V06-016 was issued, as well as any permitting actions that occurred during the previous Title V Renewal review period (2012 – 2014).

Table 3-1 Issued Plan Approvals/Installation Permits

Plan Approval/Installation Permit No.	AMS Date Approved	Description
IP 11276	6 February 2012	Permits the Warehouse Boiler No. 1, which was originally installed in 1982.
GP 13001	22 January 2013	Reactivation of the crude oil tank PB-843 (P-590).
13178	19 August 2013	Permits installation of flare tip replacement, bottom igniter replacement, and retractable thermos wells on South Yard North Yard Flare.
12195	19 February 2014	Permits the installation of Ultra Low-NOx boilers on two process heaters, and changes the firing limit for seven process heaters from an hourly basis to a yearly basis.
14045	8 April 2014	Permits the installation of a railcar butane loading/unloading station to handle 36 rail cars per day.
13260	18 July 2014	Reactivation of South Yard South Flare (P-643) (CD-112) with a dedicated IR camera to monitor the presence of a flare flame.
IP 14219-14220	11 August 2014	Permits this installation and operation of two (2) permanent Tier 4 diesel fired pumps for the Butane Terminal Firewater System.
14237	29 August 2014	Reactivation of the idle floating roof gasoline tank PB-36 (P-510). (Permit incorrectly lists the source as P-010.)
14228	29 August 2014	Permits storage of UDEX in tank P-015 (GP-285) while Tank PB-121 is out of service.
14149	2 September 2014	Permits the installation of a boiler with a firing rate of 350 MMBTU/hour.
06050A	20 March 2015	Replaces emission limits set in 433 Alkylation Unit installation permit.
13020B	20 March 2015	Amends AMS IP 13020 (removes Condition 8) and combines IP 13020 (dated 8 April 2018) and IP 14106 (dated 27 May 2014). Two Crude Rail Car Unloading facilities to be incorporated in Title V Permit.
15101	24 March 2015	Permits repair, modification, and reactivation of Tank (PB) 36 (P-510) with a dome. (Permit incorrectly lists the source as P-010.)
15171,15172, & 15182	13 August 2015	Permits flare tip replacement for three flare units.
General Permit No. 15322	14 December 2015	Permits Tank PB-36 (P-510) to store Ethanol, Gasoline, and Gasoline components. (Permit incorrectly lists the source as P-010.)
General Permit No. 1600009	9 March 2016	Reactivates Tank PB-162 (P-537) and permits it to store Gasoline and Gasoline Components.
RACT Plan Approval	22 March 2016	Replaces previous plan approval, and establishes NOx and VOC RACT technology.
General Permit No. 16000034	27 April 2016	Reactivates Tank GP-1212 for Cumene service.
15247	19 May 2016	Replaces emission limits set in boiler installation permit.
15253	22 September 2016	Permits changes required to comply with the USEPA Tier 3 gasoline standards.
IP16-000142	17 October 2016	Permits replacement of six Ultra-Low NOx Burners on 1332 Unit H-2 Hydrocarbon heater.
IP16-000264	30 December 2016	Permits modification of emission limits of contamination sources. (RACT 2 Permit)

Plan Approval/Installation Permit No.	AMS Date Approved	Description
General Permit No. 17000004	20 January 2017	Reactivates GP-1208 for Benzene service.
General Permit No. 17000005	20 January 2017	Reactivates GP-1209 for Benzene service.
15271	25 April 2017	Amends and replaces original Plan Approval No. 02184 issued December 29, 2003 and amended May 12, 2004. Incorporates requirements for South Flare, and work practice standards of 40 CFR 63 Subpart DDDDD.
16013	11 July 2017	H2S CEMS monitor modification application for the Unit 1332 H-2 Heater.
IP17-000086	17 October 2017	Modifies the daily feed rate at the 869 Alkylation Unit.
IP16-000234	20 December 2017	Amends Plan Approval No. 15253 to add Conditions 34-44 to retire the Emission Reduction Credits (ERCs) that PES was required to purchase in Condition 2
IP17-000514	8 January 2018	Reactivates Tank PB-848 (P-595) and permits the storage of Distillate Oil products.
IP16-000225	30 April 2018	Installation of a permanent ammonia injection system on 868 Fluidized Catalytic Cracking Unit (FCCU) to reduce opacity in flue gas, and modification of 868 FCCU emission limits.
IP18-000260 IP18-000263	26 September 2018	Permits closure of SWS and Acid Gas Flare Sour Water Stripper Flare, relocation of flare line, installation of flare tip replacement and smokeless injection system, and incorporates subparts CC and Ja as applicable to all refinery flares.
IP18-000373 IP18-000374	9 November 2018	Installation of two Emergency Flood Control RICEs.

Attachment A includes any new source applicable requirements referenced in the Plan Approvals/Installation Permits that need to be incorporated into the Title V Permit. A copy of each issued Plan Approval/Installation Permit is included in Attachment G.

4.0 *NEW REGULATORY REQUIREMENTS TO BE INCORPORATED INTO THE TITLE V/STATE OPERATING PERMIT*

State and federal regulations affecting the PES Philadelphia Refinery have been revised and or promulgated since Title V Permit V06-016 was issued. Table 4-1 identifies the regulatory requirements that PES is submitting for affected sources at the refinery since Title V Permit V06-016 was issued.

Table 4-1 Regulatory Requirements

New or Modified Regulation	Emission Units
Additional RACT Requirements for Major Sources of NOx and VOCs (RACT 2)	Boilers# (37,39,40), Heaters (Units 137 F-1, 137 F-2, 210 H101, 210 H201, 231 B101, 433 H-1, 860 2H2, 860 2H4, 865 1H1, 865 11H2, 866 12H1, 868 8H101, 1332 H-2, 1332 H-400, 1332 H-401.), Marine loading
National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries – Refinery Sector Rule (RSR) - 40 CFR Part 63 Subpart CC, 40 CFR Part 63 Subpart WW and 40 CFR Part 63 Subpart UUU	Sulfur Recovery Unit (SRU), Catalytic Reforming Unit (CRU), Fluid Catalytic Cracking Unit (FCCU), Maintenance Process Vents (MPV), Pressure Release Devices (PRD), Group 1 and Group 2 Tanks, Benzene Fenceline Monitoring, Flares (1231 Flare – Unit 1232, 1232 Flare – Unit 1232, 433 Flare, North Flare in South Yard, South Flare in South Yard, Emergency Sulfur Plant)
Mandatory Greenhouse Gas Reporting – 40 CFR Part 98	Facility-wide
Protection of Stratospheric Ozone – 40 CFR Part 82	Facility-wide
National Standards of Performance for New Stationary Sources – Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction or Modification Commenced After May 14, 2007 – 40 CFR Part 60 Subpart Ja	Flares (1231 Flare – Unit 1232, 1232 Flare – Unit 1232, 433 Flare, North Flare in South Yard, South Flare in South Yard, Emergency Sulfur Plant, LPG Flare)

Attachments A and C include any new source applicable requirements referenced in these new or modified regulations that need to be incorporated into the Title V Permit.

In December 2015 (most recently modified in November, 2018), the EPA finalized a Risk and Technology Review (RTR) for the Petroleum Refinery Sector, also known as the Refinery Sector Rule (RSR) that would further control toxic air emissions from petroleum refineries and provide important information about refinery emissions to the public and

neighboring communities. This final rule is based on two refinery emissions standards:

- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries (40 CFR Part 63 Subpart CC, "Refinery MACT 1") which affects Miscellaneous Process Vents (MPVs), Flares, Storage Tanks, Pressure Release Devices (PRDs) and Fenceline Monitoring.

- National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries 40 CFR Part 63 Subpart UUU, "Refinery MACT 2") which affects Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.

Applicable requirements for the affected sources are incorporated in the Title V/State Operating Permit No. V06-016 with Proposed Changes (Attachment F). Requirements pertaining to Flares, MPVs, Storage Tanks, Catalytic Cracking Units and Sulfur Recovery Units can be found under their individual group sources. Other global and catch all RSR requirements which include Catalytic Reforming Units, Benzene Fenceline Monitoring and PRDs are captured under newly created Group 29.

5.0 COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

The intent of the CAM rule (40 CFR Part 64) is to ensure that emission control devices are functioning properly and emission units are meeting their applicable emission standards on a continual basis. To ensure this fact, the owner or operator of a CAM applicable emission source and control device must provide a "reasonable assurance of compliance" with emission limitations or standards for a pollutant specific emission unit. CAM plans must be created for units that are subject to the CAM rule. CAM plans are to provide compliance assurance for the anticipated range of operations for both the process and the associated control equipment. In some cases, the existing Title V permits may already have CAM type requirements. However, if an emission source meets the CAM applicability guidelines, a CAM plan will need to be prepared and filed with the initial Title V renewal application. A brief outline of CAM rule applicability is provided below.

5.1 CAM APPLICABILITY

The CAM rule potentially applies to Pollutant Specific Emission Units (PSEU) at major sources that are required to have an operating permit under 40 CFR Part 70 or 40 CFR Part 71. A PSEU refers to a unit treated separately for each regulated air pollutant under this rule. The applicability of CAM to each PSEU can be evaluated on a pollutant-by-pollutant basis using a three-part test.

1) Is the unit subject to an emission limit or standard for the applicable regulated air pollutant?
2) Does the unit use a control device to achieve compliance with the emission limit?
3) Does the unit have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the amount that classifies the source as a major source under 40 CFR Part 70?

If all three (3) of the conditions of the three-part test apply to a PSEU at a major source facility, then CAM potentially applies to the PSEU. However, the following is a list of exemptions for the CAM Rule.

- Emission limitations or standards proposed by the Administrator after 11/15/90 pursuant to section 111 or 112 of the Clean Air Act.

- Stratospheric ozone protection requirements under Title VI of the Clean Air Act.

- Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b) or 410 of the Clean Air Act.

- Emissions limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Clean Air Act that allows for trading emissions within a source or between a source.

- An emissions cap that meets the requirements specified in 40 CFR 70.4(b)(12) or 40 CFR 71.6(a)(13)(iii).

- Emission limitations or standards for which a 40 CFR 70 or 71 permit (Title V permit) specifies a continuous compliance determination method as defined in 60 CFR 64.1, such as continuous emission monitoring for the applicable standard.

- Back-up utility power emissions units that are:
    - Municipally owned.
    - Exempt from all 40 CFR 75 monitoring requirements.
    - Operated for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations and will be operated consistent with that purpose throughout the term of the permit.
    - The actual emissions from the utility unit, based on the average annual emissions over the last three calendar years of operation (or shorter time for newer units), are less than 50% of the amount in tons per year required for a source to be classified as a major source.

5.2 *CAM APPLICABILITY ANALYSIS*

PES Philadelphia Refinery evaluated all of the existing emission sources and control devices in the current Title V Permit V06-016 as well as those that need to be incorporated into the Title V Permit. Based on this detailed review, there are no refinery specific PSEU that are subject to CAM and are required to submit a CAM plan with this Title V Permit renewal application. Attachment D provides a detailed CAM non-applicability determination for the Philadelphia Refinery.

PES has performed a detailed review of the existing Title V Permit V06-016 and determined where permit hygiene changes are required. PES is requesting that the following update be incorporated into the Title V Permit.

Update to Vapor Pressure Limits for Internal Floating Roof (IFR) Tanks (40 CFR 60 subpart Kb)

PES would like to incorporate the following condition under work practice standards for Group 13C - Internal Floating Roof Tanks subject to 40 CFR 60, Subpart Kb. These are existing provisions that were inadvertently not included in the prior Title V permit.

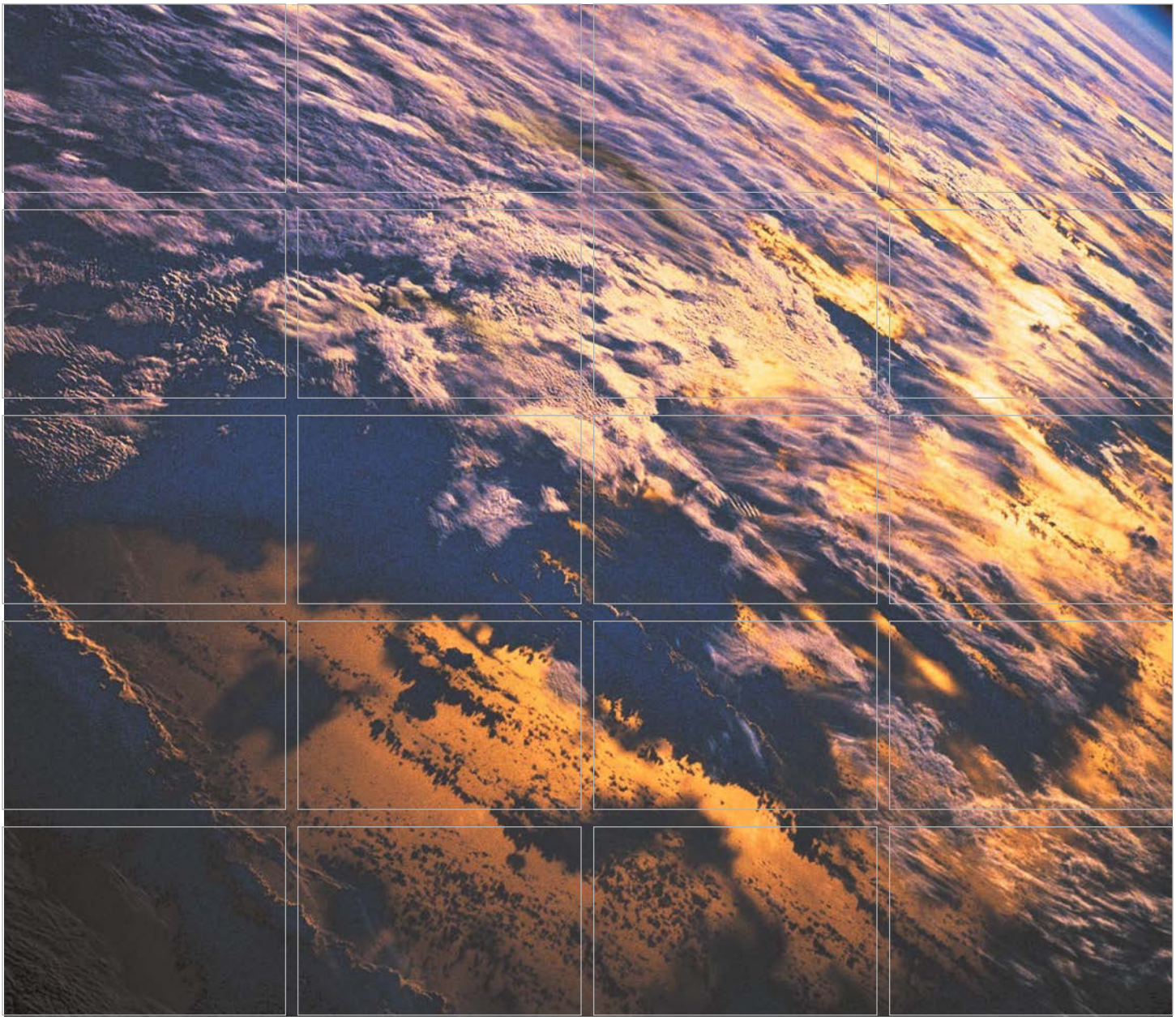
- Subpart Kb applies to storage vessels with a capacity ≥ 151 m^3 with max true vapor pressure ≥ 3.5 kilopascals (kPa) or with a capacity ≥ 75 m3 but < 151 m3 with max true vapor pressure ≥ 15.0 kPa.

Moving 40 CFR Part 60, Subpart QQQ Requirements

PES would like to move compliance requirements for Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems (40 CFR Part 60, Subpart QQQ) concerning Alkylation Units 869 and 870 from Group 20 (Alkylation) to Group 25A (Refining Wastewater). This move is for permit organization purposes only and will have no effect on the Permittee's compliance status with the aforementioned rule.

Updating Tank Product Classifications

PES is requesting that tank contents listed in Table A-1 of the Title V Permit be updated to reflect the products stored in a more generic categorization. For example, the following would be updated to "Gasoline Components": Naphtha, Gasoline, etc.



Title V Permit V06-016 Renewal Application Package, Volume I

Philadelphia Energy Solutions R&M LLC
Philadelphia, PA

January 2019

Environmental Resources Management
75 Valley Stream Parkway, Suite 200
Malvern, Pennsylvania 19355
(484) 913-0300

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The business of sustainability

Philadelphia Refining Complex
Environmental Planning Department
Philadelphia Energy Solutions Refining and Marketing LLC
3144 W Passyunk Avenue
Philadelphia, PA 19145-5208
215-339-2000

January 17, 2019

Mr. Edward Wiener
Chief, Source Registration
Air Management Services
321 University Avenue
Philadelphia, PA 19104

Re: Philadelphia Energy Solutions Refining and Marketing LLC (PES)
Title V Operating Permit No. V06-016
Renewal Application for Title V Operating Permit No. V06-016

Dear Mr. Wiener,

Enclosed please find the Title V Operating Permit Renewal Application for Philadelphia Energy Solutions Refining and Marketing LLC (PES). The facility currently operates under Title V Operating Permit (TVOP) No. V06-016 which is due to expire on 18 July 2019.

This Title V Operating Permit Renewal Application includes the following:

- Check for $750.00 to cover AMS Title V Renewal Fees;
- Narrative analysis to complement application forms;
- City of Philadelphia AMS Title V Renewal Application Forms in **Attachment A** (highlighted text represents a change of Source ID);
- Site Location Map and Process Flow Diagrams in **Attachment B**;
- AMS Addendum 1 Method of Compliance Worksheets in **Attachment C**;
- Detailed CAM Non-Applicability Determination and Associated Worksheets in **Attachment D**;
- List of Proposed Changes to Title V/State Operating Permit No. V06-016 in **Attachment E**;
- Two versions of the Title V/State Operating Permit No. V06-016 – With & without Tracked Changes in **Attachment F**;
- Plan Approvals, Operating Permits, Registration(s), or Exemption(s) To Be Incorporated into the Title V/State Operating Permit in **Attachment G**; and
- Most Recent Annual Title V Compliance Certification in **Attachment H**.

Please contact me at charles.barksdale@pes-companies.com or (215) 339-2074 if you have any questions.

Respectfully,

Charles D. Barksdale, Jr., PE
Director, Environmental Planning

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LIST OF ATTACHMENTS

LIST OF TABLES

1.0 INTRODUCTION

Philadelphia Energy Solutions Refining and Marketing, LLC (PES) owns and operates a petroleum refining complex in Philadelphia, Pennsylvania. The complex has two refineries, Girard Point, which is located near the Platt Bridge, and Point Breeze, which is located near the Passyunk Avenue Bridge. Collectively the Plant ID of the two refineries is 01501, and is operated under Title V/State Operating Permit No. V06-016 issued July 18, 2014 and amended and reissued on September, 11 2015 by the City of Philadelphia Department of Public Health Air Management Services (AMS). The current Title V/State operating permit has an effective date of 18 July 2014 and an expiration date of 18 July 2019. This is the renewal application for the refinery Title V Permit required to be submitted in accordance with AMS regulations at least six (6) and not more than 18 months before the expiration of the existing permit.

The following document describes permitted refinery projects and regulatory analyses performed since the initial Title V Permit was issued that need to be incorporated in the permit renewal. Additional AMS Title V renewal application forms and refinery related information is provided in the attachments as follows:

- City of Philadelphia AMS Title V Renewal Application Forms (Attachment A);
- Site Location Map/Process Flow Diagrams (Attachment B);
- AMS Addendum 1 Method of Compliance Worksheets (Attachment C);
- Detailed CAM Non-Applicability Determination Sheet (Attachment D);
- List of Proposed Changes to Title V/State Operating Permit No. V06-016 (Attachment E);
- Two versions of Title V/State Operating Permit No. V06-016 with Proposed Changes – With & without Tracked Changes (Attachment F);
- Plan Approvals, Operating Permits, Registrations, Notifications, or Exemptions Issued to be incorporated into Title V/State Operating Permit (Attachment G); and
- Most Recent Annual Title V Compliance Certification (Attachment H).

2.0 UPDATED FACILITY INVENTORY

Table A-1 of current Title V Permit V06-016 provides a facility inventory list for the PES Philadelphia Refinery. The most recent Title V Permit was issued July 18, 2014 (amended and reissued on September 11, 2015); permitted activities at the refinery since that time have added, modified, and removed equipment at the facility. The following sections specifically identify where the Title V Permit facility inventory requires updating.

2.1 EQUIPMENT TO ADD TO TITLE V PERMIT NO. V06-016

Permitted activities at the PES Philadelphia Refinery have modified or added new emission sources at the facility. The following six (6) Plan Approvals/Installation Permits approved by AMS include emission sources that need to be added to the Title V Permit.

1) Installation Permit No. 14045 issued 8 April 2014

   Installation Permit No. 14045 was issued 8 April 2014 approving plans for the installation and operation of a butane railcar loading and unloading facility. The butane stream is transferred to the butane bullet or to the Schuylkill River Tank Farm (SRTF) sphere tanks SR-73 – SR-78 through the inter-refinery pipeline (IRPL), P-664 (PB).

2) Plan Approval No. 14149 issued 2 September 2014

   Plan Approval No. 14149 was issued 2 September 2014 approving plans for the installation and operation of a 350 MMBTU/hr boiler (Boiler #45). The boiler was fitted with low NOx burners (LNB), flue gas recirculation (FGR), CO Oxidation catalyst, selective catalytic reduction (SCR) system, a wet electrostatic precipitator (WESP), and continuous oxygen trim system.

3) Plan Approval No. 15253 issued 22 September 2016

   Plan Approval No. 15253 was issued 22 September 2016 and reissued 20 December 2017 to approve modifications of the 864 Unit, 1332 Unit, and 870 Unit, including the installation and operation of Unit 870 H-3 heater. The heater is equipped with ultra-low NOx burners (ULNB). Additionally, a new H_2S CEMs was installed to demonstrate compliance with the 40 CFR 60.104(a)(1) emission limit for all three 870 Unit Heaters.

4) Installation Permit No. 14219-14220 issued 11 August 2014

Installation Permit No. 14219-14220 was issued 11 August 2014 to approve the installation and operation of two (2) permanent Tier 4 diesel fired pumps for the Butane Terminal Firewater System.

5) Installation Permit No. 13020B issued 20 March 2015[1]

Installation Permit No. 13020B was issued 20 March 2015 to amend AMS Installation Permit 13020 (dated 8 April 2013) which approved the installation and operation of Two (2) Crude Rail Car Unloading facilities at Point Breeze (PB). Additionally, the amendment combined AMS IP 13020 and AMS IP 14106.

6) Installation Permit No. 11276 issued 6 February 2012

Installation Permit No. 11276 was issued 6 February 2012 to permit a small Warehouse Boiler rated for 5.23 MMBtu/hr. This boiler was installed in 1982 but AMS requested that Sunoco (now PES) submit an application to have it be a permitted source.

7) Plan Approval No. IP16-000225 issued 30 April 2018

Plan Approval No. IP16-000225 was issued 30 April 2018 for installation of a permanent ammonia injection system on 868 Fluidized Catalytic Cracking Unit (FCCU) to reduce opacity in the flue gas. Additionally, the plan approval modified 868 FCCU emission limits listed in Condition D.21(a)(1) of the Title V Operating Permit No. V06-016 to include new permit limits, correct language incorporated from Plan Approval No. 00184, and incorporate EPA policy on emission limit exemptions during start-up, shut-down, and malfunctions.

8) Installation Permits IP18-000373 & 374 issued 9 November 2018

Installation Permits IP18-000373 & 374 were issued 9 November 2018 for the installation of two Emergency Flood Control RICEs.

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[1] AMS Installation Permit No. 13020B was issued to remove Condition 8 in AMS Installation Permit 13020, and combined AMS Installation Permits 13020 and 14106 (dated 8 April 2013 and 27 May 2014, respectively). Permit No. 13020B was amended on 20 March 2015 to incorporate a change of ownership from PES Refining and Marketing LLC (PES R&M) to North Yard Logistics, LP, which is under control of PES Holdings, LLC. PES Holdings, LLC also owns PES R&M.

Table 2-1 provides the emission point specific information to incorporate these additional emission sources into the refinery Title V Permit.

Table 2-1 Emission Sources to be Added to Permit V06-016

Permit Number	Proposed ID Group	Source Name	Unit Type	Fuel	Construction Date
IP 14045	P-637	Butane Loading/Unloading Station	Process	NA	2014
14149	CU-022 (GP)	#45 Boiler	Combustion Unit	Refinery Fuel Gas/Natural Gas	2014
15253	CU-140 (PB)	H3 Heater – Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	Combustion Unit	Refinery Fuel Gas/Natural Gas	2018
IP 14219-14220	FP-020	Butane Terminal Firewater System Pump #1 (JX6H-UFADF0)	Combustion Unit	ULSD	2014
IP 14219-14220	FP-021	Butane Terminal Firewater System Pump #2 (JX6H-UFADF0)	Combustion Unit	ULSD	2014
IP 13020B	P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities	Process	NA	2013
IP 11276	CU-025 (PB)	Warehouse Boiler No. 1	Combustion Unit	Fuel Oil No. 2/Natural Gas	1982
IP18-000373	EM-002 (GP)	Flood Control RICE at GP 2nd and J	Emergency Combustion Unit	Diesel	2018
IP18-000374	EM-003 (GP)	Flood Control RICE at GP 2-separator	Emergency Combustion Unit	Diesel	2018

Attachment A includes additional detailed information regarding this equipment, including regulatory applicability analyses to determine the federal, Pennsylvania, and AMS source applicable requirements. The Title V Permit facility inventory list will also have to be updated with the emission point stacks for these new emission sources. Table 2-2 provides a listing of the emission point stacks to be added to the Title V Permit from new emission sources.

Table 2-2 Emission Point Stacks to be Added to Permit V06-016

Unit ID	Emission Stack/Source Description	Emission Stack Diameter (m)	Emission Stack Height (m)	Emission Stack Base Elevation (m)
S-979 (PB)	Source of Air Emission from P-644, Two (2) Crude Rail Car Unloading Facilities	Not Applicable (Fugitive Source)	Not Applicable (Fugitive Source)	Not Applicable (Fugitive Source)
S-126 (GP)	Point of Air Emission Used by CU-022, #45 Boiler	1.962	45.720	4.570
S-127 (PB)	Point of Air Emission Used by CU-025, Warehouse Boiler No. 1	Not Available	Not Available	Not Available
S-8703 (PB)	Point of Air Emission Used by CU-139, Unit 870, H3 Heater	1.829	45.720	3.962
S-3413 (GP)	Point of Air Emission Used by EM-002 (GP)	Not Available	Not Available	Not Available
S-3414 (GP)	Point of Air Emission Used by EM-003 (GP)	Not Available	Not Available	Not Available

Attachment A includes additional detailed information regarding these emission point stacks.

2.2 *EQUIPMENT TO BE REACTIVATED IN TITLE V PERMIT NO. V06-016*

Due to changes in environmental regulations, market demand, and typical equipment upgrades, emission sources have been reactivated via minor permitting actions since the last renewal/amendment of the Title V Permit. Table 2-3 below provides a complete listing of emission sources that have been reactivated and should be considered active according to the Title V Permit.

Table 2-3 Emission Sources to be reactivated in Title V Permit No. V06-016

Permit Number	Title V ID	Source Name	Unit Type	Fuel	Permitted Reactivation Date
PA No. 13260	P-643/CD-112	South Yard South Flare	Process/Control Device	NA	18 July 2014
GP No. 14228	P-015	Tank GP-285	Process	Distillate Components	29 August 2014
GP-17000004	P-026	Tank GP-1208	Process	Benzene	1/20/2017
GP No. IP17-000133	P-144	Tank GP-219	Process	Cutter Stock	5/15/2017
GP-17000005	P-163	Tank GP-1209	Process	Benzene	1/20/2017
GP-16000034	P-165	Tank GP-1212	Process	Cumene	4/27/2016
GP. No. 13001	P-590	Tank PB-843	Process	Crude	1/22/2013
GP No. 15101	P-510	Tank PB-36	Process	Gasoline Components	24 March 2015
GP No. IP16-00009	P-537	Tank PB-162	Process	Gasoline Components	9 March 2016
GP No. IP17-000514	P-595	Tank PB-848	Process	Distillate Components	8 January 2018

2.3 EQUIPMENT TO REMOVE FROM TITLE V PERMIT NO. V06-016

Due to changes in environmental regulations, market demand, and typical equipment upgrades, emission sources have been removed from the facility since the most recent Title V Permit. Additionally, equipment has been taken out of service without the intention of bringing it back into the same service. Table 2-4 provides a complete listing of the emission sources to be removed from the Title V Permit.

Table 2-4 Emission Sources to be Removed from Permit V06-016

ID Group	Source Name	Rating/Capacity	Fuel/Material	Unit Type
P-646 (PB)	Flares (2), Emergency Sulfur Plant	NA	Refinery Gas / Natural Gas	Control Device

Attachment A includes additional information regarding this equipment to be removed from the Title V Permit. The removal of the two (2) Emergency Flares at the Sulfur Plant was permitted under Installation Permit Nos.: IP18-000260 & IP18-000263 on 26 September 2018. The source is still on-site but will no longer operate as described in V06-016. Removing this equipment from the refinery Title V Permit subsequently requires that the emission point stack listing be updated. The emission point stacks identified in Table 2-5 need to be removed from the Title V Permit as the emission sources have been removed.

Table 2-5 Emission Point Stacks to be Removed from Permit V06-016

ID Group	Source Name
S-980 (PB)	Used by P-646, Two Emergency Sulfur Plant Flare (Unit 867)

3.0 *ISSUED* PLAN APPROVALS, INSTALLATION PERMITS, OPERATING PERMITS TO BE INCORPORATED INTO THE TITLE V/STATE OPERATING PERMIT

As mentioned previously, the renewal to Title V Permit V06-016 was submitted in 2006 and the permit was issued in July 2014 and amended in September 2015. Since this time, PES has been issued numerous Plan Approvals and Operating Permits and submitted various regulatory registrations/notifications. Sections 3 and 4 identify the permitted and regulatory notification activities respectively, which PES Philadelphia Refinery has undergone since the most recent renewal of the Title V Permit was issued.

Table 3-1 provides a listing of all Plan Approvals/Installation Permits issued for the PES Philadelphia Refinery since the Title V Permit V06-016 was issued, as well as any permitting actions that occurred during the previous Title V Renewal review period (2012 – 2014).

Table 3-1 Issued Plan Approvals/Installation Permits

Plan Approval/Installation Permit No.	AMS Date Approved	Description
IP 11276	6 February 2012	Permits the Warehouse Boiler No. 1, which was originally installed in 1982.
GP 13001	22 January 2013	Reactivation of the crude oil tank PB-843 (P-590).
13178	19 August 2013	Permits installation of flare tip replacement, bottom igniter replacement, and retractable thermos wells on South Yard North Yard Flare.
12195	19 February 2014	Permits the installation of Ultra Low-NOx boilers on two process heaters, and changes the firing limit for seven process heaters from an hourly basis to a yearly basis.
14045	8 April 2014	Permits the installation of a railcar butane loading/unloading station to handle 36 rail cars per day.
13260	18 July 2014	Reactivation of South Yard South Flare (P-643) (CD-112) with a dedicated IR camera to monitor the presence of a flare flame.
IP 14219-14220	11 August 2014	Permits this installation and operation of two (2) permanent Tier 4 diesel fired pumps for the Butane Terminal Firewater System.
14237	29 August 2014	Reactivation of the idle floating roof gasoline tank PB-36 (P-510). (Permit incorrectly lists the source as P-010.)
14228	29 August 2014	Permits storage of UDEX in tank P-015 (GP-285) while Tank PB-121 is out of service.
14149	2 September 2014	Permits the installation of a boiler with a firing rate of 350 MMBTU/hour.
06050A	20 March 2015	Replaces emission limits set in 433 Alkylation Unit installation permit.
13020B	20 March 2015	Amends AMS IP 13020 (removes Condition 8) and combines IP 13020 (dated 8 April 2018) and IP 14106 (dated 27 May 2014). Two Crude Rail Car Unloading facilities to be incorporated in Title V Permit.
15101	24 March 2015	Permits repair, modification, and reactivation of Tank (PB) 36 (P-510) with a dome. (Permit incorrectly lists the source as P-010.)
15171,15172, & 15182	13 August 2015	Permits flare tip replacement for three flare units.
General Permit No. 15322	14 December 2015	Permits Tank PB-36 (P-510) to store Ethanol, Gasoline, and Gasoline components. (Permit incorrectly lists the source as P-010.)
General Permit No. 1600009	9 March 2016	Reactivates Tank PB-162 (P-537) and permits it to store Gasoline and Gasoline Components.
RACT Plan Approval	22 March 2016	Replaces previous plan approval, and establishes NOx and VOC RACT technology.
General Permit No. 16000034	27 April 2016	Reactivates Tank GP-1212 for Cumene service.
15247	19 May 2016	Replaces emission limits set in boiler installation permit.
15253	22 September 2016	Permits changes required to comply with the USEPA Tier 3 gasoline standards.
IP16-000142	17 October 2016	Permits replacement of six Ultra-Low NOx Burners on 1332 Unit H-2 Hydrocarbon heater.
IP16-000264	30 December 2016	Permits modification of emission limits of contamination sources. (RACT 2 Permit)

Plan Approval/Installation Permit No.	AMS Date Approved	Description
General Permit No. 17000004	20 January 2017	Reactivates GP-1208 for Benzene service.
General Permit No. 17000005	20 January 2017	Reactivates GP-1209 for Benzene service.
15271	25 April 2017	Amends and replaces original Plan Approval No. 02184 issued December 29, 2003 and amended May 12, 2004. Incorporates requirements for South Flare, and work practice standards of 40 CFR 63 Subpart DDDDD.
16013	11 July 2017	H2S CEMS monitor modification application for the Unit 1332 H-2 Heater.
IP17-000086	17 October 2017	Modifies the daily feed rate at the 869 Alkylation Unit.
IP16-000234	20 December 2017	Amends Plan Approval No. 15253 to add Conditions 34-44 to retire the Emission Reduction Credits (ERCs) that PES was required to purchase in Condition 2
IP17-000514	8 January 2018	Reactivates Tank PB-848 (P-595) and permits the storage of Distillate Oil products.
IP16-000225	30 April 2018	Installation of a permanent ammonia injection system on 868 Fluidized Catalytic Cracking Unit (FCCU) to reduce opacity in flue gas, and modification of 868 FCCU emission limits.
IP18-000260 IP18-000263	26 September 2018	Permits closure of SWS and Acid Gas Flare Sour Water Stripper Flare, relocation of flare line, installation of flare tip replacement and smokeless injection system, and incorporates subparts CC and Ja as applicable to all refinery flares.
IP18-000373 IP18-000374	9 November 2018	Installation of two Emergency Flood Control RICEs.

Attachment A includes any new source applicable requirements referenced in the Plan Approvals/Installation Permits that need to be incorporated into the Title V Permit. A copy of each issued Plan Approval/Installation Permit is included in Attachment G.

4.0 NEW REGULATORY REQUIREMENTS TO BE INCORPORATED INTO THE TITLE V/STATE OPERATING PERMIT

State and federal regulations affecting the PES Philadelphia Refinery have been revised and or promulgated since Title V Permit V06-016 was issued. Table 4-1 identifies the regulatory requirements that PES is submitting for affected sources at the refinery since Title V Permit V06-016 was issued.

Table 4-1 Regulatory Requirements

New or Modified Regulation	Emission Units
Additional RACT Requirements for Major Sources of NOx and VOCs (RACT 2)	Boilers# (37,39,40), Heaters (Units 137 F-1, 137 F-2, 210 H101, 210 H201, 231 B101, 433 H-1, 860 2H2, 860 2H4, 865 1H1, 865 11H2, 866 12H1, 868 8H101, 1332 H-2, 1332 H-400, 1332 H-401.), Marine loading
National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries – Refinery Sector Rule (RSR) - 40 CFR Part 63 Subpart CC, 40 CFR Part 63 Subpart WW and 40 CFR Part 63 Subpart UUU	Sulfur Recovery Unit (SRU), Catalytic Reforming Unit (CRU), Fluid Catalytic Cracking Unit (FCCU), Maintenance Process Vents (MPV), Pressure Release Devices (PRD), Group 1 and Group 2 Tanks, Benzene Fenceline Monitoring, Flares (1231 Flare – Unit 1232, 1232 Flare – Unit 1232, 433 Flare, North Flare in South Yard, South Flare in South Yard, Emergency Sulfur Plant)
Mandatory Greenhouse Gas Reporting – 40 CFR Part 98	Facility-wide
Protection of Stratospheric Ozone – 40 CFR Part 82	Facility-wide
National Standards of Performance for New Stationary Sources – Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction or Modification Commenced After May 14, 2007 – 40 CFR Part 60 Subpart Ja	Flares (1231 Flare – Unit 1232, 1232 Flare – Unit 1232, 433 Flare, North Flare in South Yard, South Flare in South Yard, Emergency Sulfur Plant, LPG Flare)

Attachments A and C include any new source applicable requirements referenced in these new or modified regulations that need to be incorporated into the Title V Permit.

In December 2015 (most recently modified in November, 2018), the EPA finalized a Risk and Technology Review (RTR) for the Petroleum Refinery Sector, also known as the Refinery Sector Rule (RSR) that would further control toxic air emissions from petroleum refineries and provide important information about refinery emissions to the public and

neighboring communities. This final rule is based on two refinery emissions standards:

- National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries (40 CFR Part 63 Subpart CC, "Refinery MACT 1") which affects Miscellaneous Process Vents (MPVs), Flares, Storage Tanks, Pressure Release Devices (PRDs) and Fenceline Monitoring.

- National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries 40 CFR Part 63 Subpart UUU, "Refinery MACT 2") which affects Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units.

Applicable requirements for the affected sources are incorporated in the Title V/State Operating Permit No. V06-016 with Proposed Changes (Attachment F). Requirements pertaining to Flares, MPVs, Storage Tanks, Catalytic Cracking Units and Sulfur Recovery Units can be found under their individual group sources. Other global and catch all RSR requirements which include Catalytic Reforming Units, Benzene Fenceline Monitoring and PRDs are captured under newly created Group 29.

5.0 COMPLIANCE ASSURANCE MONITORING (CAM) PLANS

The intent of the CAM rule (40 CFR Part 64) is to ensure that emission control devices are functioning properly and emission units are meeting their applicable emission standards on a continual basis. To ensure this fact, the owner or operator of a CAM applicable emission source and control device must provide a "reasonable assurance of compliance" with emission limitations or standards for a pollutant specific emission unit. CAM plans must be created for units that are subject to the CAM rule. CAM plans are to provide compliance assurance for the anticipated range of operations for both the process and the associated control equipment. In some cases, the existing Title V permits may already have CAM type requirements. However, if an emission source meets the CAM applicability guidelines, a CAM plan will need to be prepared and filed with the initial Title V renewal application. A brief outline of CAM rule applicability is provided below.

5.1 CAM APPLICABILITY

The CAM rule potentially applies to Pollutant Specific Emission Units (PSEU) at major sources that are required to have an operating permit under 40 CFR Part 70 or 40 CFR Part 71. A PSEU refers to a unit treated separately for each regulated air pollutant under this rule. The applicability of CAM to each PSEU can be evaluated on a pollutant-by-pollutant basis using a three-part test.

1) Is the unit subject to an emission limit or standard for the applicable regulated air pollutant?
2) Does the unit use a control device to achieve compliance with the emission limit?
3) Does the unit have potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the amount that classifies the source as a major source under 40 CFR Part 70?

If all three (3) of the conditions of the three-part test apply to a PSEU at a major source facility, then CAM potentially applies to the PSEU. However, the following is a list of exemptions for the CAM Rule.

- Emission limitations or standards proposed by the Administrator after 11/15/90 pursuant to section 111 or 112 of the Clean Air Act.

- Stratospheric ozone protection requirements under Title VI of the Clean Air Act.

- Acid Rain Program requirements pursuant to sections 404, 405, 406, 407(a), 407(b) or 410 of the Clean Air Act.

- Emissions limitations or standards or other applicable requirements that apply solely under an emissions trading program approved or promulgated by the Administrator under the Clean Air Act that allows for trading emissions within a source or between a source.

- An emissions cap that meets the requirements specified in 40 CFR 70.4(b)(12) or 40 CFR 71.6(a)(13)(iii).

- Emission limitations or standards for which a 40 CFR 70 or 71 permit (Title V permit) specifies a continuous compliance determination method as defined in 60 CFR 64.1, such as continuous emission monitoring for the applicable standard.

- Back-up utility power emissions units that are:
    - Municipally owned.
    - Exempt from all 40 CFR 75 monitoring requirements.
    - Operated for the sole purpose of providing electricity during periods of peak electrical demand or emergency situations and will be operated consistent with that purpose throughout the term of the permit.
    - The actual emissions from the utility unit, based on the average annual emissions over the last three calendar years of operation (or shorter time for newer units), are less than 50% of the amount in tons per year required for a source to be classified as a major source.

5.2 CAM APPLICABILITY ANALYSIS

PES Philadelphia Refinery evaluated all of the existing emission sources and control devices in the current Title V Permit V06-016 as well as those that need to be incorporated into the Title V Permit. Based on this detailed review, there are no refinery specific PSEU that are subject to CAM and are required to submit a CAM plan with this Title V Permit renewal application. Attachment D provides a detailed CAM non-applicability determination for the Philadelphia Refinery.

6.0 TITLE V PERMIT HYGIENE CHANGES

PES has performed a detailed review of the existing Title V Permit V06-016 and determined where permit hygiene changes are required. PES is requesting that the following update be incorporated into the Title V Permit.

Update to Vapor Pressure Limits for Internal Floating Roof (IFR) Tanks (40 CFR 60 subpart Kb)

PES would like to incorporate the following condition under work practice standards for Group 13C - Internal Floating Roof Tanks subject to 40 CFR 60, Subpart Kb. These are existing provisions that were inadvertently not included in the prior Title V permit.

- Subpart Kb applies to storage vessels with a capacity ≥ 151 m^3 with max true vapor pressure ≥ 3.5 kilopascals (kPa) or with a capacity ≥ 75 m3 but < 151 m3 with max true vapor pressure ≥ 15.0 kPa.

Moving 40 CFR Part 60, Subpart QQQ Requirements

PES would like to move compliance requirements for Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems (40 CFR Part 60, Subpart QQQ) concerning Alkylation Units 869 and 870 from Group 20 (Alkylation) to Group 25A (Refining Wastewater). This move is for permit organization purposes only and will have no effect on the Permittee's compliance status with the aforementioned rule.

Updating Tank Product Classifications

PES is requesting that tank contents listed in Table A-1 of the Title V Permit be updated to reflect the products stored in a more generic categorization. For example, the following would be updated to "Gasoline Components": Naphtha, Gasoline, etc.

Attachment A
City of Philadelphia AMS Title V
Renewal Application Forms

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

Title V OP Number: _____
Date: _____

TITLE V OPERATING PERMIT APPLICATION

Section 1 - General Information

1.1 Application Type

Type of permit for which application is made: (Check one)

☐ Initial

☒ Renewal Operating Permit No. V06-016

☐ Application Revision - provide date of original Title V Application or OP No.: _____

1.2 Plant Information

Federal Tax ID/Plant ID: 61-1689574 **Firm Name:** Philadelphia Energy Solutions Refining and Marketing LLC

SIC Code: 2911 **Plant Name:** Philadelphia Energy Solutions Refining and Marketing LLC

Description of SIC: Petroleum Refining

UTM Zone: 18 **UTM North:** 4419.144 **UTM East:** 482.671

Method of Obtaining UTM: Transverse Mercator Calculator

1.3 Contact Information

Name: Janet Ferris **Title:** Environmental Manager

Address: 3144 Passyunk Avenue, Philadelphia, PA 19145

Telephone Number: 215-339-7146

1.4 Certification of Truth, Accuracy and Completeness

Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

(Signed) MO. Br **Date:** 1/17/19

Name (Typed): Mark O. Brandon **Title:** Vice President and General Manager

Section 2 - Applicable Requirements for the Entire Site

Describe and cite all applicable requirements pertaining to the entire site.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list site level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Citation No.	Citation Limitation	Limitation Used

Section 3 - Site Inventory List

Give a complete listing of all air pollution sources, control equipment, emission points and fuel material locations within this site.

For renewals, only list sources not included in current Title V Operating Permit, sources that need to be corrected in the current Title V operating permit or sources which are now subject to Compliance Assurance Monitoring (CAM) requirements of 40 CFR Part 64. Note: one (1) of the following sections (5, 6 or 7) of the application must be completed for each new source listed here.

Unit ID	Company Designation	Unit Type	CAM (✓)
CU-018 (GP)	#37 Boiler	Combustion Unit	
CU-020 (GP)	#39 Boiler	Combustion Unit	
CU-021 (GP)	#40 Boiler	Combustion Unit	
CU-022 (GP)	#45 Boiler	Combustion Unit	
CU-025 (PB)	Warehouse Boiler No. 1	Combustion Unit	
CU-004 (GP)	Unit 1232 B-104 Heater	Combustion Unit	
CU-005 (GP)	Unit 1332 H-1 Heater	Combustion Unit	
CU-006 (GP)	Unit 1332 H-602 Heater	Combustion Unit	
CU-007 (GP)	Unit 1332 H-601 Heater	Combustion Unit	
CU-009 (GP)	Unit 1332 H-2 Heater	Combustion Unit	
CU-010 (GP)	Unit 1332 H-401 Heater	Combustion Unit	
CU-011 (GP)	Unit 1332 H-400 Heater	Combustion Unit	
CU-012 (GP)	Unit 1332 H-3 Heater	Combustion Unit	
CU-013 (GP)	Unit 137 F-1 Heater	Combustion Unit	
CU-014 (GP)	Unit 137 F-2 Heater	Combustion Unit	
CU-015 (GP)	Unit 137 F-3 Heater	Combustion Unit	
CU-016 (GP)	Unit 231 B-101 Heater	Combustion Unit	
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	Combustion Unit	
CU-101 (PB)	Unit 210 H-101 Heater	Combustion Unit	
CU-102 (PB)	Unit 210 H-201 Heater	Combustion Unit	
CU-103 (PB)	Unit 210 13H-1 Heater	Combustion Unit	
CU-109 (PB)	Unit 860 2H-2 Heater	Combustion Unit	
CU-110 (PB)	Unit 860 2H-3 Heater	Combustion Unit	
CU-111 (PB)	Unit 860 2H-4 Heater	Combustion Unit	
CU-112 (PB)	Unit 860 2H-5 Heater	Combustion Unit	
CU-114 (PB)	Unit 860 2H-7 Heater	Combustion Unit	
CU-115 (PB)	Unit 860 2H-8 Heater	Combustion Unit	
CU-118 (PB)	Unit 864 PH-1 Heater	Combustion Unit	
CU-123 (PB)	Unit 864 PH-7 Heater	Combustion Unit	
CU-124 (PB)	Unit 864 PH-11 Heater	Combustion Unit	

CU-125 (PB)	Unit 864 PH-12 Heater	Combustion Unit	
CU-126 (PB)	Unit 865 11H-1 Heater	Combustion Unit	
CU-127 (PB)	Unit 865 11H-2 Heater	Combustion Unit	
CU-128 (PB)	Unit 866 12H-1 Heater	Combustion Unit	
CU-129 (PB)	Unit 868 8H-101 Heater	Combustion Unit	
CU-137 (PB)	Unit 870 H1 Heater	Combustion Unit	
CU-138 (PB)	Unit 870 H2 Heater	Combustion Unit	
CU-139 (PB)	Unit 859 Heater 1H-1	Combustion Unit	
CU-140 (PB)	Unit 870 H3 Heater	Combustion Unit	
EM-002 (GP)	Flood Control RICE for flood control at GP 2nd and J	Emergency Combustion Unit	
EM-003 (GP)	Flood Control RICE for flood control at GP 2-separator	Emergency Combustion Unit	
CD-004 (GP)	CO Boiler	Combustion Unit/Control Device	
CD-008 (GP)	NOx SCR for Unit 1332 Heaters H-400/401	Control Device	
CD-015 (GP)	CO Oxidation Catalyst for #45 Boiler	Control Device	
CD-016 (GP)	Selective Catalytic Reduction for #45 Boiler	Control Device	
CD-017 (GP)	Wet Electrostatic Precipitator for #45 Boiler	Control Device	
CD-104 (PB)	LPG Flare	Process	
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Control Device	
CD-109	Tail Gas Incinerator (TGU-1)	Control Device	
~~CD-113 (PB)~~	~~Backup Sulfur Tail Gas Unit Catalytic Oxidizer - Reduction Control System (BUTGU)~~ (Removed)	~~Control Device~~	
CD-114 (PB)	TGU 2 Incinerator	Control Device	
CD-115 (GP)	1232 FCCU SCR	Control Device	
CD-116 (GP)	1232 FCCU Wet Gas Scrubber	Control Device	
P-510 (PB)	Tank #36, IFR	Process	
P-015 (GP)	Tank #285, IFR	Process	
P-026 (GP)	Tank #1208, IFR	Process	
P-117 (GP) – CD012	1231 Flare – Unit 1232	Process	
P-118 (GP) – CD013	1232 Flare – Unit 1232	Process	
P-119 (GP) (CD-014)	433 Flare	Process	
P-120 (GP)	FCCU, Unit 1232 Regenerator	Process	
P-130 (GP)	Barge Loading – Girard Point Wharf	Process	
P-144 (GP)	Tank #219	Process	
P-163 (GP)	Tank #1209, IFR	Process	
P-165 (GP)	Tank #1212	Process	
P-537 (PB)	Tank #162,EFR	Process	
P-541 (PB)	Tank #178, EFR	Process	
P-590 (PB)	Tank #843, EFR	Process	

P-594 (PB)	Tank #847, IFR	Process	
P-595 (PB)	Tank # 848, EFR	Process	
P-603 (PB)	Tank #885, IFR	Process	
P-604 (PB)	Tank #886, IFR	Process	
P-636 (PB)	Marine Barge Loading	Process	
P-637 (GP)	Butane Railcar Loading/Unloading	Process	
P-642 (PB) CD111	Flare, North Flare in South Yard	Process	
P-643 (PB) (CD-112)	Flare, South Flare in South Yard	Process	
P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities	Process	
~~P-646 (PB)~~	~~Flares (2), Emergency Sulfur Plant~~ (To Be Removed)	~~Process~~	
P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	Process	
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	Process	
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	Process	
P-662 (PB)	Alkylation Unit 869	Process	
S-249 (GP)	Point of Air Emission Used by P-163 (Tank #1209)	Point of Air Emission	
S-250 (GP)	Point of Air Emission Used by P-165 (Tank #1212)	Point of Air Emission	
S-225 (GP)	Point of Air Emission Used by P-026 (Tank #1208)	Point of Air Emission	
S-251 (GP)	Point of Air Emission Used by P-144 (Tank #219)	Point of Air Emission	
S-126 (GP)	Point of Air Emission Used by CU-022 (#45 Boiler)	Point of Air Emission	
S-127 (PB)	Point of Air Emission Used by CU-025 (Boiler No. 1)	Point of Air Emission	
S-979 (PB)	Point of Air Emission Used by P-644, Two (2) Crude Rail Car Unloading Facilities	Point of Air Emission	
S-8703 (PB)	Point of Air Emission Used by CU-140 (Unit 870 H3 Heater)	Point of Air Emission	
S-3413 (GP)	Point of Air Emission Used by EM-002	Point of Air Emission	
S-3414 (GP)	Point of Air Emission Used by EM-003	Point of Air Emission	
FP-020	Butane Terminal Firewater System Pump #1 (JX6H-UFADF0)	Process	
FP-021	Butane Terminal Firewater System Pump #2 (JX6H-UFADF0)	Process	

Section 4 - Source Group (optional)

4.1 Source Group Definition - NA

This section applies to new Title V Operating Permit applications only.

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

Group No.	Unit ID (for source(s) in this group)
01	No. 3 Boilerhouse (All Group 01 boilers except CU-025 (PB), Boiler No. 1)

4.2 Applicable Requirements for Source Groups - NA

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
01	AMS Plan Approval No. 06050A dated 3/20/2015. Condition 10.	The #3 Boiler House shall only burn refinery fuel gas.	PES Complies with this requirement.
01	AMS Plan Approval No. 15271 dated 4/25/2017. Condition 6.	Nitrogen Oxides (NOx) emissions from No. 3 Boilerhouse shall not exceed 970.5 tons in any 12-month rolling period.	PES Complies with this requirement.

01	AMS Plan Approval No. 15271 dated 4/25/2017. Condition 34.	No. 3 Boilerhouse rolling 12-month emissions on a monthly basis to demonstrate compliance with the emission limits. NOx emissions shall be determined based on CEM data. Other emissions shall be determined based on AMS-approved stack test data, AP-42 emissions factors, or other AMS-approved emission factors. When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used.	PES Complies with this Requirement.

Section 4 - Source Group (optional)

4.1 Source Group Definition - NA

This section applies to new Title V Operating Permit applications only.

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

Group No.	Unit ID (for source(s) in this group)
03	(GP) P-117, 1231 Flare – Unit 1232
03	(GP) P-118, 1232 Flare – Unit 1232
03	(GP) P-119, 433 Flare
03	(PB) P-642, Flare, North Flare in South Yard
03	(PB) P-643, Flare, South Flare in South Yard
03	~~(PB) P-646, Emergency Sulfur Plant~~ (TO BE REMOVED)
03	(PB) CD-104, LPG Flare

4.2 Applicable Requirements for Source Groups - NA

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
03 (Applies to all Group 03 sources)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 60 Subpart Ja	Work Practice Standards Please incorporate the following conditions from Plan Approval Nos. IP18-000260 & IP18-000263: 13	PES complies with these requirements.

03 (Applies to the following Group 03 sources: P-117, P-118, P-119, P-642, and P-643)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 63 Subpart CC	Work Practice Standards Please incorporate the following conditions from Plan Approval Nos. IP18-000260 & IP18-000263: 21 – 26, 31 - 35	PES complies with these requirements.
03 (Applies to all Group 03 sources)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 60 Subpart Ja	Monitoring Requirements Please incorporate the following conditions from Plan Approval Nos. IP18-000260 & IP18-000263: 14 - 20	PES complies with these requirements.
03 (Applies to the following Group 03 sources: P-117, P-118, P-119, P-642, and P-643)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 63 Subpart CC	Monitoring Requirements Please incorporate the following conditions from Plan Approval Nos. IP18-000260 & IP18-000263: 27 – 30, 38 - 42	PES complies with these requirements.
03 (Applies to all Group 03 sources)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 60 Subpart Ja	Recordkeeping Requirements N/A	N/A.
03 (Applies to the following Group 03 sources: P-117, P-118, P-119, P-642, and P-643)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 63 Subpart CC	Recordkeeping Requirements Please incorporate the following conditions from Plan Approval Nos. IP18-000260 & IP18-000263: 36	PES complies with these requirements.

03 (Applies to all Group 03 sources)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 60 Subpart Ja	Reporting Requirements N/A	N/A
03 (Applies to the following Group 03 sources: P-117, P-118, P-119, P-642, and P-643)	Plan Approval Nos. IP18-000260 & IP18-000263 Dated 26 September 2018 40 CFR 63 Subpart CC	Reporting Requirements Please incorporate the following conditions from Plan Approval Nos. IP18-000260 & IP18-000263: 37	PES complies with these requirements.
03 (Applies to the following Group 03 sources: CD-104)	USEPA Alternative Monitoring Procedure AMP Approval Dated 15 April 2010	The Permittee will sample and analyze propane products produced at the Point Breeze Propane Terminal for hydrogen sulfide content on a daily basis, at a minimum, and report to EPA any analysis showing a hydrogen sulfide content of 20 ppm or greater along with a description of the investigation conducted by the Permittee to determine the cause of the high sulfur condition and the investigation results [Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010].	PES Complies with this requirement.
03 (Applies to the following Group 03 sources: CD-104)	USEPA Alternative Monitoring Procedure AMP Approval Dated 15 April 2010	The investigation into propane product hydrogen sulfide content (as described in Condition D.4.(d)(32)) must be conducted immediately upon the Permittee's knowledge of the high sulfur condition in the propane products. All reports to EPA Region III must be sent to: James W. Hagedorn Environmental Scientist EPA Region III Office of Air Enforcement and Compliance Assistance Mail Code 3AP20 1650 Arch Street Philadelphia, Pennsylvania 19103	PES Complies with this requirement.

Section 4 - Source Group (optional)

4.1 Source Group Definition - NA

This section applies to new Title V Operating Permit applications only.

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

Group No.	Unit ID (for source(s) in this group)
05	P-659 (PB) - North Claus Sulfur Recovery Plant – Unit 867
05	P-660 (PB) - South Claus Sulfur Recovery Plant – Unit 867
05	CD-108 - Amine Tail Gas Scrubber – Reduction Control System
05	CD-109 - Tail Gas Incinerator (TGU-1)
05	CD-114 - TGU 2 Incinerator
05	~~CD-113 (PB) - Backup Sulfur Tail Gas Unit Catalytic Oxidizer - Reduction Control System (BUTGU)~~ (REMOVED)

4.2 Applicable Requirements for Source Groups - NA

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
05	NESHAP Subpart UUU 40 CFR § 63.1568(a)(1)(i)	Emissions of SO2 shall not exceed a concentration of 250 ppm SO2 by volume on a dry basis at zero percent excess air on a rolling 12-hour average; or operate the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis), except during startup or shutdown conditions.	PES Complies with this requirement.

05	NESHAP Subpart UUU 63.1568(a)(1)(i), (2), and (4)(i-iii)	During periods of startup and shutdown, shall comply with 63.1568(a)(4)(i) by meeting emission limitations in 63.1568(a)(1)(i); comply with 63.1568(a)(4)(ii) by sending any shutdown purge gases to the flare; or comply with 63.1568(4)(iii) by sending any startup or shutdown purge gases to the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis).	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-018 (GP)

b. Company Designation: # 37 Boiler

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Erie City

e. Model No.: Chevron/Gulf Design

f. Source Description: Boiler

g. Rated Heat Input/Thruput: 495 MMBTU/hr

h. Installation Date: 1952

i. Exhaust Temperature ~ 216 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 155,468 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-018 (GP)	# 37 Boiler	S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	495 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	RACT Plan Approval Dated 9 February 2016	Ultra low NOX burners are installed on #37 boiler; sources proposing installation of Ultra low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform combustion tuning annually, which "shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5). Limitation for No.3 BH established by CEMS based on 30 day rolling average set at 495 MMBTU/hr for #37 boiler. Installation of FGR. 0.040 Lbs. NOx/MMBTU 30_day rolling average 0.10 lbs. NOx/MMBTU daily average	PES Complies with this Requirement
Refinery Fuel Gas	Plan Approval IP16-000264 RACT 2 Conditions 2. and 5. Dated 30 December 2016	0.25 lbs/MMBtu NOx limit – 30-operating-day rolling average 1 ton VOC per rolling 12-month	PES Complies with this Requirement by condition 10 of Plan Approval IP16-000264
Refinery Fuel Gas	Plan Approval No. 15271 Update to Condition D.2.(e)(5)(ii) Dated 25 April 2017	When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used.	PES Complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-020 (GP)

b. Company Designation: # 39 Boiler

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Erie City

e. Model No.: Chevron/Gulf Design

f. Source Description: Boiler

g. Rated Heat Input/Thruput: 495 MMBTU/hr

h. Installation Date: 1952

i. Exhaust Temperature ~ 216 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 155,468 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-020 (GP)	# 39 Boiler	S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	495 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	RACT Plan Approval Dated 9 February 2016	Ultra low NOX burners are installed on #37 boiler; sources proposing installation of Ultra low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform combustion tuning annually, which "shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5). Limitation for No.3 BH established by CEMS based on 30 day rolling average set at 495 MMBTU/hr for #37 boiler. Installation of FGR. 0.040 Lbs. NOx/MMBTU 30-day rolling average 0.10 lbs. NOx/MMBTU daily average	PES Complies with this Requirement
Refinery Fuel Gas	Plan Approval IP16-000264 RACT 2 Conditions 2. and 5. **Dated 30** December 20**16**	0.25 lbs/MMBtu NOx limit – 30-operating-day rolling average 1 ton VOC per rolling 12-month	PES Complies with this Requirement by condition 10 of Plan Approval IP16-000264.
Refinery Fuel Gas	Plan Approval No. 15271 Update to Condition D.2.(e)(5)(ii) Dated 25 April 2017	When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used.	PES Complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-021 (GP)

b. Company Designation: # 40 Boiler

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Erie City

e. Model No.: Chevron/Gulf Design

f. Source Description: Boiler

g. Rated Heat Input/Thruput: 660 MMBTU/hr

h. Installation Date: 1954

i. Exhaust Temperature ~ 216 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 207,290 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-021 (GP)	# 40 Boiler	S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	660 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	RACT Plan Approval Dated 9 February 2016	Ultra low NOX burners are installed on #37 boiler; sources proposing installation of Ultra low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform combustion tuning annually, which "shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5). Limitation for No.3 BH established by CEMS based on 30 day rolling average set at 495 MMBTU/hr for #37 boiler. Installation of FG 0.040 lbs. NOx/MMBtu rolling 30-day average 0.10 lbs. NOx/MMBTU daily average	PES Complies with this Requirement
Refinery Fuel Gas	Plan Approval IP16-000264 RACT 2 Conditions 2. and 5. Dated 30 December 2016	0.25 lbs/MMBtu NOx limit – 30-operating-day rolling average 2.7 ton VOC per rolling 12-month	PES Complies with this Requirement by condition 10 of Plan Approval IP16-000264
Refinery Fuel Gas	Plan Approval 15271 Update to Condition D.2.(e)(5)(ii) Dated 25 April 2017	When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used.	PES Complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-022 (GP)

b. Company Designation: # 45 Boiler

c. Plan Approval/Installation Permit or Operating Permit No.: 14149

New Source approved in 2014 per Plan Approval No. 14149 to be added to Title V/State Operating Permit No. V06-016

d. Manufacturer: Rentech Boiler Systems

e. Model No.: 2001-21

f. Source Description: Steam Boiler

g. Rated Heat Input/Thruput: 350 MMBTU/hr

h. Installation Date: Used Rentech Boiler, Relocated from Sunoco Inc. (R&M) Eagle Point Refinery in 2014

i. Exhaust Temperature ~ 216 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 110,054 ACFM

5.2 CAM Information

Yes No

☒ ☐ Emissions unit uses a control device to achieve compliance.

☒ ☐ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-022 (GP)	# 45 Boiler	CD-017	Wet Electrostatic Precipitator	100	NA	NA
CD-017	Wet Electrostatic Precipitator	CD-015	CO Oxidation Catalyst	100	NA	NA
CD-015	CO Oxidation Catalyst	CD-016	NOx Selective Oxidation Catalytic Recovery	100	NA	NA
CD-016*	NOx Selective Oxidation Catalytic Recovery	S-126 (GP)	Used by CU-022, 45 Boiler	100	NA	NA

*Ammonia is turned off sometimes.

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	350 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas/Natural Gas	PA 14149 Condition 1. Dated 2 September 2014	The boiler (Boiler #45) shall be installed, maintained, and operated in accordance with the manufacturer's specifications and the specifications in the application.	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 2. Dated 2 September 2014 Plan Approval 15247 to Amend Plan Approval 14149 Dated 19 May 2016	Emissions from the Boiler #45 shall not exceed the following: NOx 5.06 TPY SO2 15.15 TPY CO 5.69 TPY VOC 0.00094 lb/MMBtu 1.44 TPY PM 0.0040 lb/MMBtu 6.13 TPY H2SO4 2.32 TPY Pb 7.61E-04 TPY Ammonia 3.44 TPY GHG (CO2e) 182,774 TPY	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 4. Dated 2 September 2014	The boiler (Boiler #45) CO emissions shall not exceed: (a) 3.90 ppmvd @7% O2 [25 PA Code 127.1] (b) 1% by volume of exhaust gasses	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 5. Dated 2 September 2014	Ammonia slip from Boiler #45 shall not exceed 5.0 ppmvd @3% O2	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 6. Dated 2 September 2014	The Permittee shall only burn refinery fuel gas or natural gas in Boiler #45. The H2S in the fuel gas burnt in the boiler shall not be in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and 60 ppmv determined daily on a 365 successive calendar day rolling average basis.	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 7. [25 Pa Code §123.41] Dated 2 September 2014	The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: (a) Equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour (b) Equal to or greater than 60% at any time	PES Complies with this Requirement.

Refinery Gas/Natural Gas	PA 14149 Condition 9. Dated 2 September 2014	Boiler #45 shall be installed and be operated with low NOx burners, flue gas recirculation, CO oxidation catalyst, selective catalytic reduction, and wet electrostatic precipitator.	PES Complies with this Requirement
Refinery Gas/Natural Gas	PA 14149 Condition 10. [40 CFR 60.48b(b)] Dated 2 September 2014	The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration of NOx and O2 emission discharged to the atmosphere. The CEMs shall meet NOx and O2 Performance Specs in 40 CFR 60 Appendix and 25 PA Code Chapter 139.	PES Complies with this Requirement
Refinery Gas/Natural Gas	PA 14149 Condition 11. Dated 2 September 2014	The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.107a(a)(2).	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 12. Dated 2 September 2014	The Permittee shall conduct tune-up of Boiler #45 every 5 years to demonstrate continuous compliance as specified in [40 CFR 63.7540(a)(10)]	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 13. Dated 2 September 2014	The Permittee shall comply with the requirement of NOx Budget Source in 25 Pa Code 145.	PES Complies with this Requirement.
Refinery Gas/Natural Gas	PA 14149 Condition 14. Dated 2 September 2014	The Permittee shall conduct stack tests to determine compliance as follows: (a) Compliance with CO, PM/PM10/PM2.5, and Ammonia emissions shall be demonstrated every 5 years from the previous stack test. (b) The operating parameter (max voltage, max ammonia injection, and min inlet temp) may be modified through subsequent AMS approved stack tests.	PES Complies with this Requirement
Refinery Gas/Natural Gas	PA 14149 Condition 15 Dated 2 September 2014	The Permittee shall conduct annual checks of CO level in stack using handheld instrument to assure performance of CO oxidation catalyst.	PES Complies with this Requirement
Refinery Gas/Natural Gas	PA 14149 Condition 16 Dated 2 September 2014	The Permittee shall monitor and keep records according to [25 Pa Code §127.12b(c)]	PES Complies with this Requirement

Refinery Gas/Natural Gas	PA 14149 Condition 17 Dated 2 September 2014	The Permittee shall, within 2 hours of any occurrence of any malfunction of Boiler #45 which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within 2 working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of the malfunction(s) and any corrective action.	PES complies with this Requirement
Refinery Gas	Plan Approval 15247 to Amend Plan Approval 14149 Dated 19 May 2016	The boiler may not exceed a 30 day rolling average NOx limit of 0.012 lb/MMBtu. The 30 day rolling limit assures compliance with 40 CFR 60.102a(g)(2)(i). Allow a NOx emission limit of 10.0 lbs/hr during start-ups, shutdowns, and maintenance periods. Periods of start-up, shut downs, and maintenance shall not exceed 200 hours per rolling 12 month period. Clarify emission limit, compliance methods, and calculation methods for emission NOx emission limits regarding start-ups and shut-downs.	PES complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-025 (PB)

b. Company Designation: No. 1 Boiler – Small Warehouse Boiler

c. Plan Approval/Installation Permit or Operating Permit No.: 11276

Source approved in 2012 per Installation Permit No. 11276 to be added to Title V/State Operating Permit No. V06-016

d. Manufacturer: Cleaver Brooks

e. Model No.: CB800-125

f. Source Description: Boiler to heat warehouse space

g. Rated Heat Input/Thruput: 5.23 MMBTU/hr

h. Installation Date: Boiler in place since late 1982, AMS requested it to be permitted in 2011

i. Exhaust Temperature: Not Available Units:

j. Exhaust % Moisture: Not Available

k. Exhaust Flow Volume: Not Available ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-022 (GP)	No. 1 Boiler	S-127 (PB)	No. 1 Boiler Stack	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Fuel Oil No. 2	Not Applicable	5.23 MMBTU/hr	Not Applicable
Natural Gas	Not Applicable	5.23 MMBTU/hr	Not Applicable

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
Fuel Oil No. 2		15 ppm by weight		

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	1. Boiler No. 1 shall be installed, operated and maintained in accordance with both the manufacturer's specifications and the specifications in the application	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	2. Particulate matter emissions from the boiler may not exceed 0.10 lbs/MMBTU. [AMR II Sec. V.2]	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	3. Carbon Monoxide (CO) emissions from boiler may not exceed 1 % by volume of exhaust gases. [AMR VII I]	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	4. PES may not permit the emission into the outdoor atmosphere of visible aircontaminants in such a manner that the opacity of the emission is either of the following: [25Pa Code §123.41] (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour. (b) Equal to or greater than 60% at any time.	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	5. The boiler shall only burn or No. 2 fuel oil or natural gas.	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMR III Section 3-207, Sale of Fuel Oil Effective 07/01/2015	6. The maximum sulfur content of #2 fuel oil shall be 15 ppm by weight. [25 Pa Code §123.22(e) & AMR Ill Sec. I & Ill]	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	7. The Permittee shall monitor and keep records of visible emissions for the boiler by using a daily visual check of the exhaust stack during fuel oil burning. The visual check does not need to meet the requirements of U.S.E. P.A Reference Method 9. If visible emissions are detected, adjustments shall be made to the unit to eliminate the visible emissions or a certified smoke reader shall be used to determine the opacity of the emissions.	PES Complies with this Requirement

Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	8. The boiler is not subject to any requirements of 40 CFR 63 Subpart DODOO as defined in 40 CFR 63.7506(c)(2).	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	9. The Permittee shall monitor and record monthly fuel usage and keep documenting the sulfur content of fuel oil.	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	10. The Permittee shall keep records of the daily visual checks for the boiler.	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	11. All records shall be kept for a period of five years and produced upon request.	PES Complies with this Requirement
Fuel Oil No. 2/Natural Gas	AMS Installation Permit 11276 dated 02/06/2012	12. Any violation of an emission limitation shall be reported by phone call or facsimile transmission to AMS within 24 hours of detection and followed by written notification within thirty-one days.	PES Complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-004 (GP)

b. Company Designation: Unit 1232 B-104 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Petrochem

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 70 MMBTU/hr

h. Installation Date: 1954

i. Exhaust Temperature ~ 482 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 57,835 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-004 (GP)	Unit 1232 B-104 Heater	S-111(GP)	Point of Air Emission Used by CU-004, B-104 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	70 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	1232 Heater B-104 is limited to refinery fuel gas and is capped at the existing heat input limit. ULNB are installed on Unit 1232 B-104 heater to comply with RACT requirements. 1232 Heater B-104 must comply with a NOx emission limit of 0.177 NOx lb/MMBtu by quarterly stack sampling with a portable NOx analyzer. After one year, PES may petition AMS for semi-annual monitoring. At any time, AMS may require three one-hour stack tests. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this requirement.
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-005 (GP)

b. Company Designation: Unit 1332 H-1 Debutanizer Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V95-038

d. Manufacturer: Petrochem

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 45 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 246 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 23,487 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	S-112(GP)	Point of Air Emission Used by CU-005, H-1 Debutanizer HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	45 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	25 PA §129.99(i)(2)(v)	PES shall continue quarterly combustion tuning for 1332 H-1 as a more stringent case-by-case RACT II compliance schedule.	PES Complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-006 (GP)

b. Company Designation: Unit 1332 H-602 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V95-038

d. Manufacturer: Petrochem

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 49 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 482 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 20,009 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-006 (GP)	Unit 1332 H-602 Heater	S-113 (GP)	Point of Air Emission Used by CU-006, H-602 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	49 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	25 PA §129.99(i)(2)(v)	PES shall continue quarterly combustion tuning for 1332 H-602 as a more stringent case-by-case RACT II compliance schedule.	PES Complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-007 (GP)

b. Company Designation: Unit 1332 H-601 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V95-038

d. Manufacturer: Petrochem

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 48 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 388 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 23,371 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-007 (GP)	Unit 1332 H-601 Heater	S-114 (GP)	Point of Air Emission Used by CU-007, H-601 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	48 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	25 PA §129.99(i)(2)(v)	PES shall continue quarterly combustion tuning for 1332 H-601 as a more stringent case-by-case RACT II compliance schedule.	PES Complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-009 (GP)

b. Company Designation: Unit 1332 H-2 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Petrochem

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 60 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 509 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 32,568 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-009 (GP)	Unit 1332 H-2 Heater	S-116 (GP)	Point of Air Emission Used by CU-009, H-2 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	60 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	Heater 1332 H-2 must comply with a NOx emission limit of 0.04 NOx lb/MMBtu by quarterly stack sampling with a portable NOx analyzer. After one year, PES may petition AMS for semi-annual monitoring. At any time, AMS may require three one-hour stack tests.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	ULNB systems are installed on 1332 Heater H-2 to control NOx emissions. PES shall use combustion tuning to comply with RACT requirements for 1332 H-2. Annual combustion tuning shall be performed by December 31st of year not to exceed 12 months between tunings. PES shall monitor all fuel input to Heater 1332 H-2 on a daily basis to insure capacity limits are not exceeded or PES shall install fuel limiting devices on the heater to keep capacities below allowable limits. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement.
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery	Plan Approval No. 15253 Dated 22 September 2016	NOx Emissions (a) NOx emissions shall not exceed 0.04 lb/MMBtu based on the average of three stack test runs (b) NOX emissions shall not exceed 10.51 tons per rolling 12 month period.	PES will comply with this Requirement
Refinery	Plan Approval No. 15253 Dated 22 September 2016	VOC emissions shall not exceed 1.36 tons per rolling 12 month period. Compliance shall be demonstrated by an AMS approved stack test.	Application. PES will comply with this Requirement
Refinery	Plan Approval No. 15253 Dated 22 September 2016	Operational Limits. (d) Firing duty shall not exceed 60 MMBtu per rolling 365 day period. (e) Firing duty shall not exceed 525,600 MMBtu per rolling 365 day period.	Application PES will comply with this Requirement

Refinery Gas	IP16000142 Dated 17 October 2016	3. The heater shall be equipped with ULNBs and shall achieve a NOx emission rate of 0.04 lbs/MMBtu at 3% Oxygen at full design load, 3-run average. 4. CO emissions from the heater shall not exceed 400 ppmdv at 3% oxygen, 3-run average. 5. PM emissions from the heater shall not exceed 0.10 lbs/MMBtu gross heat input. 6. SO2 emissions from the heater shall not exceed 0.53 lbs/MMBtu at any time or 0.33 lbs/MMBtu on a rolling 365-day average. 7. H2S content of refinery fuel gas burned in the heater shall not exceed 0.10 grains per dry scf. Assures compliance with condition 6. 8. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: (a) >= 20% for a period or periods aggregating more than 3 minutes in any one hour. (b) >60% at any time. 9. The heater shall be installed, maintained, and operated in accordance with manufacturer's specifications. 10. PES shall conduct annual tune-ups on the heater meeting the requirement of 40 CFR 63.7549(a)(10) 11. Within 60 days of achieving max production rate, but no later than 180 days after re-starting the heater, PES shall conduct performance test to demonstrate compliance with the NOx emission limit specified in Condition #4. The NOx and CO stack tests must be conducted simultaneously. The stack test protocol shall be submitted to AMS for approval at least 30 days before the test date and the test results shall be submitted within 60 days after the test. 12. PES shall monitor and record concentration of H2S in the refinery fuel gas with a CEMs. The monitoring system shall meet the requirements of 40 CFR 60.105(a) and 25 PA Code Chapter 139. 13. PES shall install and operate a fuel flow monitor on the heater. 14. PES shall analyze fuel gas samples for heating value daily.	PES complies with this Requirement.

Refinery Gas	IP16000142 Dated 17 October 2016	15. PES shall keep the following records for the heater: (a) Continuous H2S monitoring system records. (b) Records of daily fuel gas consumption, heating value, and sulfur content. (c) Stack test results. These records shall be kept for a minimum of 5 years and be produced upon request by AMS. 16. PES shall submit all notifications required by 40 CFR 63.7545 17. PES shall submit excess emissions reports in accordance with 40 CFR 60.7(c), including all rolling 3-hour periods during which the average concentration of H2S in fuel gas burned in the heater exceeded 0.1 grain per dscf. 18. PES shall submit annual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD.	
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from 1332 H-2 shall be less than 1 ton per rolling 12 month period. Compliance shall be monitored for the heater on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 PA Code Chapter 139 and the Pennsylvania Source Testing Manual.	PES complies with this Requirement.
Refinery Gas	Plan Approval No. 16013 Condition 11 Dated 11 July 2017	Allow H2S monitoring of the fuel gas supplied to the 1332 H2 Heater at the Girard Point Mix Drum (V-10001) in lieu of the original H2S CEM installed at 1332 H-2 Heater under Plan Approval No. 05214.	PES complies with this Requirement.
Refinery Gas	Plan Approval No. 16013 Condition 1 Dated 11 July 2017	This Plan Approval allows the removal of the H2S CEM at the 1332 H2 Heater Unit.	PES complies with this Requirement.
Refinery Gas	Plan Approval No. 16013 Condition 11 Dated 11 July 2017	The heater shall be equipped with Ultra Low NOx burners and shall achieve a NOx emission rate of 0.04 lbs/MMBTU at 3% oxygen at full design load, 3-run average. [25 PA Code § 127.1, assures compliance with the RACT Plan Approval dated 2/19/2016]	PES complies with this Requirement.

Refinery Gas	Plan Approval No. 16013 Condition 11 Dated 11 July 2017	Carbon Monoxide (CO) emissions from the heater shall not exceed 400 ppmdv at 3% oxygen, 3-run average. [40 CFR 63 Subpart DDDDD, Table 1] Particulate matter emissions from the heater shall not exceed 0.10 lbs/MMBTU gross heat input. [AMR II. Section V.2] 6. Sulfur Dioxide (SO2) emissions from the heater shall not exceed 0.53 lbs/MMBTU at any time or 0.33 lbs/MMBTU on a rolling 365-day average. [SO2 Operating Permit No. SO2-95-039] 7. The Hydrogen Sulfide content of refinery fuel gas burned in the heater shall not exceed 0.10 grains per dry standard cubic foot. [40 CFR 60.104(a)(1) – assures compliance with Condition 6] PES shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 40 CFR 60.105(a)(4) and 25 PA Code Chapter 139. (a) The H2S in the refinery fuel used for the 1332 H2 heater has shall be monitored at the H2S CEM at the GP Mix Drum (V-100010) and shall be certified [Application]. (b) The Girard Point fuel gas shall be the only source of fuel supplied to the 1332 H-2 Heater. [Application]	PES complies with this Requirement.

Refinery Gas	Plan Approval No. 16013 Condition 11 Dated 11 July 2017	PES shall comply with the RACT Permit requirements for the 1332 H-2 Heater.[RACT Plan Approval dated 2/9/2016] (a) PES will use combustion tuning to comply with RACT requirements for the 1332 H-2 Heater. (b) PES shall monitor all fuel input to all heaters and boilers with BTU limitations on a daily basis to insure capacity limits are not exceeded or PES shall install fuel limiting devices on the heaters or boilers to keep capacities below allowable. (c) Compliance with emission limits for 1332 H2 Heater (0.040 lbs/MMBTU/hr) shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at a ny time, require three one-hour stack tests. PES shall submit excess emissions reports in accordance with 40 CFR 60.7(c), including all rolling 3-hour periods during which the average concentration of H2S in fuel gas burned in the heater exceeded 0.1 grains per dscf. [40 CFR 60.105(e)(3)] 18. PES shall submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD. 19. PES shall submit immediate startup, shutdown, and malfunction repots in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.	PES complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-010 (GP)

b. Company Designation: Unit 1332 H-401 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: UOP

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 233 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 143 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 65,890 ACFM

5.2 CAM Information

Yes	No	
☒	☐	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Notes
Scenario 1:					
CU-010 (GP)	Unit 1332 H-401 Heater	CD-008	NOx SCR for Unit 1332 Heaters H-401/400	100	This exhaust scenario occurs 95% of the time or more, i.e. when the unit is operating under normal conditions.
CD-008	NOx SCR for Unit 1332 Heaters H-401/400	S-117 (GP)	Point of Air Emission Used by CU-010, H-401 HTR and CU-011, H-400 HTR	100	

Scenario 2:					
CU-010 (GP)	Unit 1332 H-401 Heater	S-117A (GP)	Point of Air Emission Used by CU-010, H-401 HTR. Back-up stack (dampers normally closed)	30-35%	This exhaust scenario occurs rarely but up to 5% of the time, i.e. during natural draft periods and when repairs are necessary to the SCR. The exhaust from CU-010 (GP) bypasses the SCR in this circumstance.
CU-010 (GP)	Unit 1332 H-401 Heater	S-117B (GP)	Point of Air Emission Used by CU-010, H-401 HTR. Back-up stack (dampers normally closed)	30-35%	
CU-010 (GP)	Unit 1332 H-401 Heater	S-117C (GP)	Point of Air Emission Used by CU-010, H-401 HTR. Back-up stack (dampers normally closed)	30-35%	

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	233 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used

Refinery Fuel Gas	RACT Plan Approval Dated 9 February 2016	PES will use combustion tuning to comply with RACT requirements for the following heaters: Unit 1332 Sources proposing combustion tuning to comply with RACT requirements of 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Process heater limits: 0.06 lbs NOx/MMBTU on a rolling 365 day average, 0.15 lbs NOX/MMBTU daily average PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	IP16-000264 Dated 30 December 2016	NOx emissions from 1332 H-401 shall not exceed 0.25 lbs/MMBtu heat input on a rolling 30 operating day average. Compliance shall be determined using an AMS-approved CEMS that meets the requirements of 25 Pa Code Chapter 139, the Pennsylvania Continuous Source Monitoring Manual (Revision 7), and 25 Pa Code §129.100(a)(1).	PES complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-011 (GP)

b. Company Designation: Unit 1332 H-400 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: UOP

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 186 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 254 Units ºC

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 52,599 ACFM

5.2 CAM Information

Yes	No	
☒	☐	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Notes
Scenario 1:					
CU-011 (GP)	Unit 1332 H-400 Heater	CD-008	NOx SCR for Unit 1332 Heaters H-401/400	100	This exhaust scenario occurs 95% of the time or more, i.e. when the unit is operating under normal conditions.
CD-008	NOx SCR for Unit 1332 Heaters H-401/400	S-117 (GP)	Point of Air Emission Used by CU-010, H-401 HTR and CU-011, H-400 HTR	100	

Scenario 2:						
CU-011 (GP)	Unit 1332 H-400 Heater	S-118A (GP)	Point of Air Emission Used by CU-011, H-400 HTR. Back-up stack (dampers normally closed)	30-35%	This exhaust scenario occurs rarely but up to 5% of the time, i.e. during natural draft periods and when repairs are necessary to the SCR. The exhaust from CU-011 (GP) bypasses the SCR in this circumstance.	
CU-011 (GP)	Unit 1332 H-400 Heater	S-118B (GP)	Point of Air Emission Used by CU-011, H-400 HTR. Back-up stack (dampers normally closed)	30-35%		
CU-011 (GP)	Unit 1332 H-400 Heater	S-118C (GP)	Point of Air Emission Used by CU-011, H-400 HTR. Back-up stack (dampers normally closed)	30-35%		

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	186 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used

Refinery	RACT Plan Approval Dated 9 February 2016	PES will use combustion tuning to comply with RACT requirements for the following heaters: Unit 1332” Sources proposing combustion tuning to comply with RACT requirements of 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Process heater limits: 0.06 lbs NOx/MMBTU on a rolling 365 day average, 0.15 lbs NOX/MMBTU daily average PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	IP16-000264 Dated 30 December 2016	NOx emissions from 1332 H-400 shall not exceed 0.25 lbs/MMBtu heat input on a rolling 30 operating day average. Compliance shall be determined using an AMS-approved CEMS that meets the requirements of 25 Pa Code Chapter 139, the Pennsylvania Continuous Source Monitoring Manual (Revision 7), and 25 Pa Code §129.100(a)(1).	PES complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-012 (GP)

b. Company Designation: Unit 1332 H-3 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Petrochem

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 43 MMBTU/hr

h. Installation Date: 1958

i. Exhaust Temperature ~ 364 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 16,037 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-012 (GP)	Unit 1332 H-3 Heater	S-119 (GP)	Point of Air Emission Used by CU-012, H-3 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	43 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery	Plan Approval No. 15253 Dated 22 September 2016	NOx Emissions (a) NOX emissions shall not exceed 17.67 tons per rolling 12 month period. Compliance shall be demonstrated by an AMS approved stack test.	Application. PES will comply with this Requirement
Refinery	Plan Approval No. 15253 Dated 22 September 2016	VOC Emissions (b) VOC emissions shall not exceed 0.97 tons per rolling 12 month period. Compliance shall be demonstrated by an AMS approved stack test.	Application. PES will comply with this Requirement
Refinery	Plan Approval No. 15253 Dated 22 September 2016	Operational Limits. (c) Firing duty shall not exceed 43.40 MMBtu/hr on daily average basis. (d) Firing duty shall not exceed 376,680 MMBtu per rolling 365 day period.	Application PES will comply with this Requirement
Refinery	Plan Approval No. 15253 Dated 22 September 2016	The Permittee shall conduct a tune-up on each process heater annually as specified in 40 CFR 63.7540.	PES will comply with this Requirement.
Refinery	Plan Approval No. 15253 Dated 22 September 2016	Keep monthly records to demonstrate compliance with above emissions limits. Compliance will be based on AMS-approved stack tests.	PES will comply with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-013 (GP)

b. Company Designation: Unit 137 F-1 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Foster Wheeler

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 415 MMBTU/hr

h. Installation Date: 1952

i. Exhaust Temperature ~ 177 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 120,555 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☒ ☐ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-013 (GP)	Unit 137 F-1 Heater	S-120 (GP)	Point of Air Emission Used by CU-013, F-1 HTR Used by CU-014, F-2 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	415 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	137 Heater F1 will use combustion tuning to comply with RACT requirements. 137 F1 is limited to refinery fuel gas and heat input is capped at 415 MMBtu/hr. Fuel input shall be monitored daily to ensure compliance with capacity limits or PES shall install a fuel limiting device. Combustion tuning must be performed annually by December 31st of each year and not to exceed 12 months between tunings. The final NOx RACT limit for 137 F1 was determined by department approved CEMS to be 0.230 lbs. NOx/MMBtu. Compliance is based on a 30-day rolling average based on hourly averages of CEM data. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this requirement.
Refinery Gas	Plan Approval IP16-000264 RACT 2 Conditions 3. Dated 30 December 2016	NOx emissions from Unit 137 F-1 Heater shall not exceed 0.23 lbs/MMBtu heat input on a rolling 30 operating day average.	PES complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-014 (GP)

b. Company Designation: Unit 137 F-2 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Foster Wheeler

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 155 MMBTU/hr

h. Installation Date: 1952

i. Exhaust Temperature ~ 177 Units oC

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 49,942 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-014 (GP)	Unit 137 F-2 Heater	S-120 (GP)	Point of Air Emission Used by CU-013, F-1 HTR Used by CU-014, F-2 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	155 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	Fuel input shall be monitored daily to ensure compliance with capacity limits or PES shall install a fuel limiting device. Combustion tuning must be performed annually by December 31st of each year and not to exceed 12 months between tunings. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Process heater limits: heat input capacity at 155 MMBtu/hr Compliance with emission limits for combustion sources listed below shall be determined by quarterly stack sampling with a portable NOX analyzer" PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this Requirement
Refinery Gas	AMS IP16000264 Condition 2. Dated 30 December 2016	NOx emissions from Unit 137 F-2 Heater shall not exceed 0.25 lbs/MMBtu heat input on a 30 operating day average	PES complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-015 (GP)

b. Company Designation: Unit 137 F-3 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 60 MMBTU/hr

h. Installation Date: 1974

i. Exhaust Temperature ~ 232 Units ºC

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 14,510 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-015 (GP)	Unit 137 F-3 Heater	S-122 (GP)	Point of Air Emission Used by CU-015, F-3 HTR	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	60 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	RACT Plan Approval Dated 9 February 2016	(C) Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Compliance with emission limits shall be determined by quarterly stack sampling with a portable NOX analyzer Limitation: 0.060 lbs NOx/MMBTU For units installing ULNB, PES shall conduct performance tests for NOX. The results of these tests have been submitted to AMS PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-016 (GP)

b. Company Designation: Unit 231 B-101 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: MW Kellog

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 104.5 MMBTU/hr

h. Installation Date: 1957

i. Exhaust Temperature ~ 288 Units ºC

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 36,560 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-016 (GP)	Unit 231 B-101 Heater	S-123A (GP)	Point of Air Emission Used by CU-016, B-101 HTR	30-35%	NA	NA
CU-016 (GP)	Unit 231 B-101 Heater	S-123B (GP)	Point of Air Emission Used by CU-016, B-101 HTR	30-35%	NA	NA
CU-016 (GP)	Unit 231 B-101 Heater	S-123C (GP)	Point of Air Emission Used by CU-016, B-101 HTR	30-35%	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	104.5 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. 19 February 2014	Updated heater short term firing rate limit to 104.5 MMBtu/hr. 2. Emissions from 231 B101 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 12.8 TPY SO2 0.8 TPY TPM 3.1 TPY CO 34.4 TPY VOC Superseded GHG 49,243 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. 19 February 2014	3. NOx emissions shall not exceed 0.03 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.20 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 8.6 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater] 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. B101 shall only burn refinery gas. 8. Unit 231 B101 Heater shall not exceed 856,000 MMBTU on a rolling 365-day basis 9. The Petmittee shall Install Ultra Low-NOx Burners (ULNBs) on the Unit 231 B101. The NOx emission limits are not applicable until the ULNBs have been installed. 11. The Permittee shall perform an annual adjustment or tune-up. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily. .	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.03 lbs/MMBtu PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 231 B101 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-017 (GP)

b. Company Designation: Unit 433 Isostripper H-1 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Foster Wheeler

e. Model No.: Chevron/Gulf Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 260 MMBTU/hr

h. Installation Date: 1973

i. Exhaust Temperature ~ 232 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6 %

k. Exhaust Flow Volume: ~ 78,922 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	S-124 (GP)	Point of Air Emission Used by CU-017, H-1 Iso Stripper Heater	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	260 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2014	Ultra-low NOX burner (ULNB) systems are installed to control NOX emissions: Unit 433 H-1 Heater "Sources proposing installing ULNB to comply with RACT requirements of the 25 Pa Code 129.91(f) shall perform combustion tuning annually by December 31st of each year not to exceed 12 months between tunings." PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this requirement.

Refinery Gas	Plan Approval No. 06050A Dated 20 March 2015	During periods of start-up and shutdown, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. Startup shall be defined as that period of time from initiation of the heater operation until the unit reaches steady state. Shutdown shall be defined as the cessation of the heater operation. Each period shall not exceed 8 hours. Shutdown and startup periods are limited to 40 hours per 12 month rolling period combined. During periods of chemical washing of the 433 Unit, the lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. The total chemical washing and dryout periods shall not exceed 144 hours per rolling 24 month period. The air dry out period time is defined as the time required to operate the Heater at very low firing rates when compressed air or nitrogen is injected into the unit and the temperature increased to evaporate free water in the system Free water must be removed prior to re-introducing acid into the unit, and is evidenced by no longer finding any water at low point bleeders.	PES complies with this requirement.
Refinery Gas	AMS IP16-000264 Dated 30 December 2016	NOx emissions shall not exceed 0.25 lbs/MMBtu on a rolling 30 operating day average. Compliance shall be determined using an AMS-approved CEMS that meets the requirements of PA Code Chapter 139.	PES complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-101 (PB)

b. Company Designation: Unit 210 H-101 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Born Engineering

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 192 MMBTU/hr

h. Installation Date: Dec-64

i. Exhaust Temperature ~ 338 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 76,435 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-101 (PB)	H-101 Heater	S-801 (PB)	Point of Air Emission Used by CU-101, Unit 210A, HTR H101	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	192 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. 19 February 2014	Updated heater short term firing rate limit to 192 MMBtu/hr. 2. Emissions from 210 H-101 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 73.1 TPY SO2 2.7 TPY TPM 6.1 TPY CO 66.9 TPY VOC Superseded GHG 95,847 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. 19 February 2014	3. NOx emissions shall not exceed 0.089 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.19 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 15.7 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater] 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. The heater shall only burn refinery gas. 8. Unit 210 H-101 Heater shall not exceed 1,643,000 MMBTU on a rolling 365-day basis 11. The Permittee shall perform an annual adjustment or tune-up. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.089 lbs/MMBtu. Compliance shall be based on stack sampling with a portable NOx analyzer. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 210 H-101 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-102 (PB)

b. Company Designation: Unit 210 H-201 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Born Engineering

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 254 MMBTU/hr

h. Installation Date: May-73

i. Exhaust Temperature ~ 246 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 117,282 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-102 (PB)	H-201 Heater	S-802 (PB)	Point of Air Emission Used by CU-102, Unit 210B, HTR H201	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	254 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	Updated heater short term firing rate limit to 254 MMBtu/hr. 2. Emissions from 210 H-201 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 32.6 TPY SO2 3.2 TPY TPM 8.0 TPY CO 88 .8 TPY VOC Superseded GHG 126,707 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	3. NOx emissions shall not exceed 0.030 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.10 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 20.8 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater] 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. The heater shall only burn refinery gas. 8. Unit 210 H-201 Heater shall not exceed 2,172,000 MMBTU on a rolling 365-day basis 11. The Permittee shall perform an annual adjustment or tune-up. 15. Compliance with NOx shall be based on a rolling 365-day average and NOx CEMS data. 16. Compliance with the 12-month limits shall be monitored and recorded on a monthly basis and shall be based on heat input, NOx CEMs data, and results from AMS-approved stack tests. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.03 lbs/MMBtu on a 365-day rolling average. Compliance shall be determined by an AMS-approved CEM measuring NOx and O2. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 210 H-201 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual NOx emissions from Unit 210 H-201 Heater shall not exceed 0.25 lbs/MMBtu heat input on a rolling 30 operating day average.	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-103 (PB)

b. Company Designation: Unit 210 13H-1 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Born Engineering

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 235.4 MMBTU/hr

h. Installation Date: May-73

i. Exhaust Temperature ~ 354 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 106,528 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-103 (PB)	13H-1 Heater	S-803 (PB)	Point of Air Emission Used by CU-103, Unit 210C, HTR 13H1	50	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	235.4 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	Plan Approval No. 15271 Dated 25 April 2017	PES shall burn only refinery fuel gas and/or natural gas in the 210 Unit 13H1 Heater from the date of issuance of this plan approval. The SO2 emissions from this heater shall not exceed 11.01 tons in any rolling 12-month period. PES shall maintain the following records: Monthly records for heater 13H1 to demonstrate compliance with the SO2 emission limit based on daily analysis of H2S content in the refinery fuel gas used.	PES complies with this Requirement
Refinery Gas	RACT Plan Approval Dated 9 February 2016	Compliance with NOx emission limits shall be determined with a portable NOx analyzer. NOx emissions from Unit 210 HTR 13H1 shall not exceed 0.104 lbs/MMBtu. C) Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement

Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-109 (PB)

b. Company Designation: Unit 860 2H-2 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 69.8 MMBTU/hr

h. Installation Date: Mar-67

i. Exhaust Temperature ~ 350 Units ^{o}C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~ 97,602 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-109 (PB)	2H-2 Heater	S-807 (PB)	Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4	50	NA	NA
CU-109 (PB)	2H-2 Heater	S-808 (PB)	Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4	50	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	69.8 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	PES will use combustion tuning to comply with RACT requirements for the following heaters: Unit 860 Sources proposing combustion tuning to comply with RACT requirements of 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Compliance with emission limits for combustion sources listed below shall be determined by quarterly stack sampling with a portable NOX analyzer. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Refinery Gas	AMS IP16-000264 Dated 30 December 2016	NOx emissions shall not exceed 0.25 lbs/MMBtu heat input. Compliance with this emission limit shall be determined based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual.	PES Complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-110 (PB)

b. Company Designation: Unit 860 2H-3 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 174.7 MMBTU/hr

h. Installation Date: Mar-67

i. Exhaust Temperature ~ 350 Units ^{o}C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~157,046 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-110 (PB)	2H-3 Heater	S-809 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5	50	NA	NA
CU-110 (PB)	2H-3 Heater	S-810 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5	50	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	174.67 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery	RACT Plan Approval Dated 9 February 2016	Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Compliance with emission limits shall be determined by quarterly stack sampling with a portable NOX analyzer Limitation: 0.163 lbs NOx/MMBTU PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-111 (PB)

b. Company Designation: Unit 860 2H-4 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 99.4 MMBTU/hr

h. Installation Date: Mar-67

i. Exhaust Temperature ~ 350 Units °C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~ 97,602 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-111 (PB)	2H-4 Heater	S-807 (PB)	Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4	50	NA	NA
CU-111 (PB)	2H-4 Heater	S-808 (PB)	Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4	50	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	99.4 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery	RACT Plan Approval Dated February 9 2016	Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Compliance with emission limits shall be determined by quarterly stack sampling with a portable NOX analyzer" PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	AMS IP16-000264 Dated 30 December 2016	NOx emissions shall not exceed 0.25 lbs/MMBtu heat input.	PES Complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-112 (PB)

b. Company Designation: Unit 860 2H-5 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 155 MMBTU/hr

h. Installation Date: Mar-67

i. Exhaust Temperature ~ 350 Units ^{o}C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~ 157,046 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-112 (PB)	2H-5 Heater	S-809 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5	50	NA	NA
CU-112 (PB)	2H-5 Heater	S-810 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5	50	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	174.7 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery	RACT Plan Approval Dated February 9 2016	Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Compliance with emission limits shall be determined by quarterly stack sampling with a portable NOX analyzer Limitation: 0.163 lbs NOx/MMBTU PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-114 (PB)

b. Company Designation: Unit 860 2H-7 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 59 MMBTU/hr

h. Installation Date: Mar-67

i. Exhaust Temperature ~ 360 Units °C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~ 26,629 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-114 (PB)	2H-7 Heater	S-812 (PB)	Point of Air Emission Used by CU-114, Unit 860, HTR 2H7	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	59 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery	RACT Plan Approval Dated February 9 2016	Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. Compliance with emission limits shall be determined by quarterly stack sampling with a portable NOX analyzer. Limitation: 0.157 lbs NOx/MMBTU PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES Complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-115 (PB)

b. Company Designation: Unit 860 2H-8 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V95-038

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Heater

g. Rated Heat Input/Thruput: 49.6 MMBTU/hr

h. Installation Date: Mar-67

i. Exhaust Temperature ~ 353 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 24,008 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-115 (PB)	2H-8 Heater	S-813 (PB)	Point of Air Emission Used by CU-115, Unit 860, HTR 2H8	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	49.6 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	25 PA §129.99(i)(2)(v)	PES shall continue quarterly combustion tuning for 860 2H-8 as a more stringent case-by-case RACT II compliance schedule.	PES Complies with this Requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-118 (PB)

b. Company Designation: Unit 864 PH-1 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 80 MMBTU/hr

h. Installation Date: Aug-71

i. Exhaust Temperature ~ 765 Units ^{o}F

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~ 37,796 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-118 (PB)	PH-1 Heater	S-818 (PB)	Point of Air Emission Used by CU-118, Unit 864, HTR PH1	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	80 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated February 9 2016	Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. NOx emissions compliance shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at any time, require three one-hour stack tests. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this requirement.
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Emissions from the 864 PH-1 heater shall not exceed the following limits. (a) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs. (b) NOx emissions shall not exceed 18.40 tons per rolling 12 month period. (c) CO emissions shall not exceed 25.04 tons per rolling 12 month period. (d) Firing duty shall not exceed 80.0 MMBtu/hr on a daily average basis. (e) Firing duty shall not exceed 613,200 MMBtu per rolling 365-day period.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Unit 864 PH-1 shall be equipped with low NOx burners (LNB) meeting the emission limits above.	PES will comply with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-123 (PB)

b. Company Designation: Unit 864 PH-7 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 45.5 MMBTU/hr

h. Installation Date: Aug-71

i. Exhaust Temperature ~ 337 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 20,536 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-123 (PB)	PH-7 Heater	S-822 (PB)	Point of Air Emission Used by CU-123, Unit 864, HTR PH7	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	45.5 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Emissions from the 864 PH-7 heater shall not exceed the following limits. (f) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs. (g) NOx emissions shall not exceed 9.99 tons per rolling 12 month period. (h) CO emissions shall not exceed 13.59 tons per rolling 12 month period. (i) Firing duty shall not exceed 45.5 MMBtu/hr on a daily average basis. (j) Firing duty shall not exceed 332,880 MMBtu per rolling 365-day period.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Unit 864 PH-7 shall be equipped with low NOx burners (LNB) meeting the emission limits above.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	PES shall use U.S.E.P.A. Reference Method 25A for VOC and Performance Specification 7, Method 11 for H2S testing.	PES will comply with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-124 (PB)

b. Company Designation: Unit 864 PH-11 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 74 MMBTU/hr

h. Installation Date: Aug-71

i. Exhaust Temperature ~ 413 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 33,834 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-124 (PB)	PH-11 Heater	S-823 (PB)	Point of Air Emission Used by CU-124, Unit 864, HTR PH11	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	74 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions compliance shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at any time, require three one-hour stack tests. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this requirement.
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	PES shall use U.S.E.P.A. Reference Method 25A for VOC and Performance Specification 7, Method 11 for H2S testing.	PES will comply with this requirement.

Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Emissions from the 864 PH-11 heater shall not exceed the following limits. (k) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs. (l) NOx emissions shall not exceed 15.24 tons per rolling 12 month period. (m) CO emissions shall not exceed 20.75 tons per rolling 12 month period. (n) Firing duty shall not exceed 74.0 MMBtu/hr on a daily average basis. (o) Firing duty shall not exceed 508,080 MMBtu per rolling 365-day period.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Unit 864 PH-11 shall be equipped with low NOx burners (LNB) meeting the emission limits above.	PES will comply with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-125 (PB)

b. Company Designation: Unit 864 PH-12 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Selas

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 85.1 MMBTU/hr

h. Installation Date: Aug-71

i. Exhaust Temperature ~ 382 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 42,580 ACFM

5.2 CAM Information

Yes No

☐ ☒ Emissions unit uses a control device to achieve compliance.

☐ ☒ Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-125 (PB)	PH-12 Heater	S-824 (PB)	Point of Air Emission Used by CU-125, Unit 864, HTR PH12	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	85.1 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions compliance shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at any time, require three one-hour stack tests. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this requirement.
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	PES shall use U.S.E.P.A. Reference Method 25A for VOC and Performance Specification 7, Method 11 for H2S testing.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Emissions from the 864 PH-12 heater shall not exceed the following limits. (p) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs. (q) NOx emissions shall not exceed 16.56 tons per rolling 12 month period. (r) CO emissions shall not exceed 22.54 tons per rolling 12 month period. (s) Firing duty shall not exceed 85.1 MMBtu/hr on a daily average basis. (t) Firing duty shall not exceed 551,880 MMBtu per rolling 365-day period.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Unit 864 PH-12 shall be equipped with low NOx burners (LNB) meeting the emission limits above.	PES will comply with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-126 (PB)

b. Company Designation: Unit 865 Heater 11H-1

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Born Engineering

e. Model No.: ARCO Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 83.7 MMBTU/hr

h. Installation Date: May-73

i. Exhaust Temperature ~ 316 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ~ 32,461 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-126 (PB)	11H-1Heater	S-825 (PB)	Point of Air Emission Used by CU-126, Unit 865, HTR 11H1	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	87.3 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right. ☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	Updated heater short term firing rate limit to 87.3 MMBtu/hr. 2. Emissions from 865 11H1 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 10.5 TPY SO2 0.7 TPY TPM 2.6 TPY CO 28.5 TPY VOC Superseded GHG 40,777 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	3. NOx emissions shall not exceed 0.03 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.10 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 7.2 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater] 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. 11H1 shall only burn refinery gas. 8. Unit 865 11H1 Heater shall not exceed 699,000 MMBTU on a rolling 365-day basis 9. The Permittee shall Install Ultra Low-NOx Burners (ULNBs) on the Unit 865 11H1. The NOx emission limits are not applicable until the ULNBs have been installed. 11. The Permittee shall perform an annual adjustment or tune-up. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.113 lbs/MMBtu. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 865 11H-1 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-127 (PB)

b. Company Designation: Unit 865 Heater 11H-2 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer:

e. Model No.:

f. Source Description:

g. Rated Heat Input/Thruput: 64.2 MMBTU/hr

h. Installation Date: May-73

i. Exhaust Temperature ~ 316 Units °C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-127 (PB)	11H-2 Heater	S-826 (PB)	Point of Air Emission Used by CU-127, Unit 865, HTR 11H2	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	64.2 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right. ☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	Updated heater short term firing rate limit to 64.2 MMBtu/hr. 2. Emissions from 865 11H2 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 28.3 TPY SO2 0.5 TPY TPM 1.8 TPY CO 20.4 TPY VOC Superseded GHG 29,168 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	3. NOx emissions shall not exceed 0.113 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.10 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 5.3 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater**]** 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. 11H2 shall only burn refinery gas. 8. Unit 865 11H2 Heater shall not exceed 500,000 MMBTU on a rolling 365-day basis 11. The Permittee shall perform an annual adjustment or tune-up. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.113 lbs/MMBtu. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 865 11H-2 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-128 (PB)

b. Company Designation: Unit 866 12H-1 Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer:

e. Model No.:

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 61.2 MMBTU/hr

h. Installation Date: May-73

i. Exhaust Temperature ~ 316 Units ^{o}C

j. Exhaust % Moisture ~ 4 – 6%

k. Exhaust Flow Volume: ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-128 (PB)	12H-1 Heater	S-827 (PB)	Point of Air Emission Used by CU-128, Unit 866, HTR 12H1	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	61.2 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA				

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	Updated heater short term firing rate limit to 61.2 MMBtu/hr. 2. Emissions from 866 12H1 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 25.8 TPY SO2 0.5 TPY TPM 1.7 TPY CO 18.6 TPY VOC Superseded GHG 26,601 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 February 2014	3. NOx emissions shall not exceed 0.113 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.10 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 5.0 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater**]** 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. 12H1 shall only burn refinery gas. 8. Unit 866 12H1 Heater shall not exceed 456,000 MMBTU on a rolling 365-day basis 11. The Permittee shall perform an annual adjustment or tune-up. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.113 lbs/MMBtu. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 866 12H-1 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-129 (PB)

b. Company Designation: Unit 868 8H-101 Heater Tulsa Heater Inc Refinery Fuel Gas Heater

c. Plan Approval/Installation Permit or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Tulsa Heater, Inc.

e. Model No.: Series HEVD

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 60.0 MMBTU/hr

h. Installation Date: 2003

i. Exhaust Temperature ~ 260 Units ^{o}C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~18,918 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked “Yes”)

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-129 (PB)	8H-101 Heater Tulsa Heater Inc Refinery Fuel Gas Heater	S-828 (PB)	Point of Air Emission Used by CU-129, FCCU 868, HTR 8H101	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas	NA	60.0 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 December 2014	Updated heater short term firing rate limit to 60.0 MMBtu/hr. 2. Emissions from 868 8H101 shall not exceed the following limits in tons per rolling 12-month period, calculated monthly. NOx 27.1 TPY SO2 0.6 TPY TPM 1.7 TPY CO 18.9 TPY VOC Superseded GHG 27,054 TPY	PES complies with this Requirement
Refinery Fuel Gas	AMS Plan Approval No. 12195. Dated 19 December 2014	3. NOx emissions shall not exceed 0.113 lbs/MMBtu. 4. PM emissions may not exceed the following: 0.10 lbs/MMBTU [AMR II Section V.1 – assures compliance with 25 Pa. Code 123.11]. 5. CO emissions may not exceed 4.9 lbs/hour. Ensures compliance with AMR VIII, Section 11.6 for this heater**]** 6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)] 7. 8H-101 shall only burn refinery gas. 8. Unit 868 8H-101 Heater shall not exceed 480,000 MMBTU on a rolling 365-day basis 11. The Permittee shall perform an annual adjustment or tune-up. 21. Monitor and record the MMBTU heat input hourly and on a rolling 365-day basis, calculated daily.	PES complies with this Requirement

Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.113 lbs/MMBtu. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.
Refinery Gas	IP16-000264 Dated 30 December 2016	VOC emissions from Unit 868 8H-101 Heater shall be less than 1 ton per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual	PES complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-137 (PB)

b. Company Designation: H1 Heater – Unit 870, Low Sulfur Hydrodesulfurization Plant

c. Plan Approval/Installation Permit or Operating Permit No.: Existing source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Tulsa Heater, Inc.

e. Model No.: Sunoco Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 97 MMBTU/hr

h. Installation Date: 2004

i. Exhaust Temperature ~ 428 Units ^{o}C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~40,870 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-137 (PB)	H1 Heater – Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	S-8701 (PB)	Point of Air Emission Used by CU-137, Unit 870, H1 Heater	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas/Natural Gas	NA	97 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: NA

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA						

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.035 lbs/MMBtu. Ultra-low NOx burner (ULNB) systems are installed on Unit 870 H1 to control NOx emissions. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Emissions from the 870 H-1 heater shall not exceed the following limits. (u) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs. (v) NOx emissions shall not exceed 12.32 tons per rolling 12 month period. (w) VOC emissions shall not exceed 0.17 tons per rolling 12 month period. (x) Firing duty shall not exceed 97.0 MMBtu/hr on a daily average basis. (y) Firing duty shall not exceed 849,720 MMBtu per rolling 365-day period.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Conduct a tune-up on 870 H-1 annually as specified in 40 CFR 63.7540. Install a new continuous H_2S monitor and recorder for the fuel gas burned in the 870 Heaters H-1, H-2, and H-3. The performance evaluation of the H_2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No. 15271 Dated 25 April 2017	Existing Tier 2 Limits to incorporate for 870 H1: NOx: 3.4 lb/hr Superseded CO: 14.04 lb/hr 61.50 tpy VOC: 0.52 lb/hr Superseded SO_2: 3.88 lb/hr 16.99 tpy PM/PM10: 0.18 lb/hr 0.79 tpy	PES complies with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	New 870 H1 Tier 3 Limits: (b) NOx emissions shall not exceed 12.32 tons per rolling 12 month period. (c) VOC emissions shall not exceed 0.17 tons per rolling 12 month period. (d) Firing duty shall not exceed 97.0 MMBtu/hr on a daily average basis. (e) Firing duty shall not exceed 849,720 MMBtu on a rolling 365-day basis.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No. 15271 Dated 25 April 2017	23.(a)(ii) PES shall conduct a stack test for CO every five (5) years or upon request from AMS.	PES complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-138 (PB)

b. Company Designation: H2 Heater – Unit 870, Low Sulfur Hydrodesulfurization Plant

c. Plan Approval/Installation Permit or Operating Permit No.: Existing source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Tulsa Heater, Inc.

e. Model No.: Sunoco Specified Design

f. Source Description: Process Heater

g. Rated Heat Input/Thruput: 53 MMBTU/hr

h. Installation Date: 2004

i. Exhaust Temperature ~ 600 Units ^{o}C

j. Exhaust % Moisture ~ 4-6%

k. Exhaust Flow Volume: ~ 22,429 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-138 (PB)	H2 Heater – Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	S-8702 (PB)	Point of Air Emission Used by CU-137, Unit 870, H2 Heater	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Gas/Natural Gas	NA	53 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.035 lbs/MMBtu. Ultra-low NOx burner (ULNB) systems are installed on Unit 870 H2 to control NOx emissions. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES will comply with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES will comply with this requirement.

Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Emissions from the 870 H-2 heater shall not exceed the following limits. (a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs. (b) NOx emissions shall not exceed 6.50 tons per rolling 12 month period. (c) VOC emissions shall not exceed 0.21 tons per rolling 12 month period. (d) Firing duty shall not exceed 53.0 MMBtu/hr on a daily average basis. (e) Firing duty shall not exceed 464,280 MMBtu per rolling 365-day period.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	Conduct a tune-up on 870 H-2 annually as specified in 40 CFR 63.7540. Install a new continuous H_2S monitor and recorder for the fuel gas burned in the 870 Heaters H-1, H-2, and H-3. The performance evaluation of the H_2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No. 15271 Dated 25 April 2017	Existing Tier 2 Limits to incorporate for 870 H2: NOx: 1.86 lb/hr Superseded CO: 4.37 lb/hr 19.13 tpy VOC: 0.29 lb/hr Superseded SO_2: 2.12 lb/hr 9.29 tpy PM/PM10: 0.1 lb/hr 0.43 tpy	PES complies with this requirement.
Refinery Gas	AMS Plan Approval No.15253 Dated 22 September 2016 Ammended by: AMS Plan Approval No IP16-000234 Dated 20 December 2018	New 870 H2 Tier 3 Limits: (b) NOx emissions shall not exceed 6.50 tons per rolling 12 month period. (c) VOC emissions shall not exceed 0.21 tons per rolling 12 month period. (d) Firing duty shall not exceed 53.0 MMBtu/hr on a daily average basis. (e) Firing duty shall not exceed 464,280 MMBtu on a rolling 365-day basis.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No. 15271 Dated 25 April 2017	23.(a)(ii) PES shall conduct a stack test for CO every five (5) years or upon request from AMS.	PES complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-139 (PB)

b. Company Designation: Unit 859 Heater 1H-1

c. Plan Approval/Installation Permit or Operating Permit No.: Existing source in Title V/State Operating Permit No. V06-016

d. Manufacturer:

e. Model No.:

f. Source Description: Hydrocracker Unit 859 Heater 1H1 (98 MMBtu/hr – installed 2009)

g. Rated Heat Input/Thruput: 98 MMBTU/hr

h. Installation Date: 2009

i. Exhaust Temperature _____ Units °

j. Exhaust % Moisture ~ 4 – 8%

k. Exhaust Flow Volume: _____ ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-139 (PB)	Unit 859 Heater 1H-1	S-8703 (PB)	Point of Air Emission Used by CU-139, Unit 859 1H-1	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Fuel Gas	NA	98 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	RACT Plan Approval Dated 9 February 2016	NOx emissions shall not exceed 0.020 lbs/MMBtu. Ultra-low NOx burner (ULNB) systems are installed on Unit 859 1H-1 to control NOx emissions. PES will use combustion tuning to comply with RACT requirements for Unit 859 Heater 1H-1. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. (D) Sources proposing installation of Ultra-low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform the annual combustion tuning by Dec. 31st of every year not to exceed 12 months between tunings. PES shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 – 129.94 are met. This data or information required to determine compliance shall be recorded and maintained in a timeframe consistent with the averaging period of the requirement. Records shall be retained for at least two years and shall be made available to the Department on request.	PES complies with this Requirement
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES Complies with this requirement.

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-140 (PB)

b. Company Designation: Unit 870 Heater H-3

c. Plan Approval/Installation Permit or Operating Permit No.: New Source approved in 2016 per Plan Approval No. 15253 to be added to Title V/State Operating Permit No. V06-016

d. Manufacturer: Not applicable

e. Model No.: Not applicable

f. Source Description: LSG Unit 870 H-3 Process Heater

g. Rated Heat Input/Thruput: 110.0 MMBTU/hr

h. Installation Date: Used heater relocated from Sunoco Inc. (R&M) Eagle Point in 2016

i. Exhaust Temperature 425 Units ºF

j. Exhaust % Moisture 0 %

k. Exhaust Flow Volume: 27,000 ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CU-139 (PB)	Unit 859 Heater 1H-1	S-8703 (PB)	Point of Air Emission Used by CU-139, Unit 859 1H-1	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Fuel Gas	NA	98 MMBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas	25 Pa. §129.100.(a)(4)	PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.	PES will comply with this requirement.
Refinery Gas	AMS Plan Approval No. 15253, Condition 11 Dated 22 September 2016	The 870 H-3 heater shall not exceed the following limits: (a) NOx emissions shall not exceed 0.03 lb/MMBtu based on the average of three stack test runs. (b) NOx emissions shall not exceed 11.96 tons per rolling 12 month period. (c) CO emissions shall not exceed 11.96 tons per rolling 12 month period. (d) Firing duty shall not exceed 91.0 MMBtu/hr on a daily average basis. (e) Firing duty shall not exceed 797,160 MMBtu per rolling 365-day period.	PES will comply with this Requirement
Refinery Gas	AMS Plan Approval No. 15253, Condition 25 Dated 22 September 2016	For Unit 870 H-3 Heater, within 60 days of achieving maximum capacity, but nolonger than 180 days after start-up, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emission limits from 11(a), (b), and (c). The NOx and CO tests must be conducted simultaneously.	PES will comply with this requirement.

Refinery Gas	AMS Plan Approval No. 15253 Dated 22 September 2016	The 870 H-3 Heater shall be installed with ULNB meeting the NOx emission limit listed above [Best Available Technology, 25 Pa. Code §127.1] The Permittee shall operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.106(e)(1) and 25 PA Code Chapter 139. (a) The Permittee shall install a new continuous H2S monitor and recorder for the fuel gases burned in the 870 Heaters H-1, H-2, and H-3. A Phase I application will be submitted to and approved by AMS prior to installation in accordance with 25 PA Code Chapter 139 and the PA Continuous Monitoring Manual, Revision 7. (b) Fuel gas combustion devices having a common source of fuel gas may be monitored at one location if monitoring at this location accurately represents the concentration of H2S in the fuel gas burned. (c) The performance evaluation of the H2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.	PES will comply with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: EM-002 (GP)

b. Company Designation: Flood Control RICE at GP 2nd and J

c. Plan Approval/Installation Permit or Operating Permit No.: New Source approved in 2018 per IP18-000373 to be added to Title V/State Operating Permit No. V06-016

d. Manufacturer: John Deer

e. Model No.: 6068HF 285 - 2012

f. Source Description: Flood Control RICE For flood control at GP 2nd and J

g. Rated Heat Input/Thruput: 374.0 MBTU/hr

h. Installation Date: 2018

i. Exhaust Temperature: Not Available Units: ____

j. Exhaust % Moisture: ____

k. Exhaust Flow Volume: ____ ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
EM-002 (GP)	Flood Control RICE at GP 2nd and J	S-3413 (GP)	Point of Air Emission Used by EM-002	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Diesel	NA	374 MBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: 500 on Emergency Basis

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Diesel				500		

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Diesel	IP18-000373 Dated 11/9/2018	Each flood control RICE shall be installed, operated, and maintained in accordance with both the manufacturer's specification and the specifications in the application (as approved herein).	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Nitrogen Oxides (NOx) emissions from each flood control RICE shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period. Assures compliance with the Plan Approval Exemption, 25 Pa Code § 127.14(a)(8)	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Carbon Monoxide (CO) emissions from each flood control RICE shall not exceed 1% by volume of exhaust gases. [AMR VIII]	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Particulate Matter (PM) emissions from each flood control RICE shall not exceed 0.04 grain per dry standard cubic foot. [25 Pa Code §123.13(c)(1)(i)]	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41] (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour; (b) Equal to or greater than 60% at any time.	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	In addition to the emission requirements of Conditions 2 thru 5, the 147 hp flood control RICE shall comply with the following emission requirements: (a) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine] (b) CO emissions shall not exceed 5.0 g/kW-hr or 3.7 g/hp-hr; [Tier 3 Engine] (c) PM emissions shall not exceed 0.30 g/kW-hr or 0.23 g/hp-hr. [Tier 3 Engine]	PES Complies with this Requirement

Diesel	IP18-000373 Dated 11/9/2018	Each flood control RICE shall only burn ultra low sulfur diesel fuel. The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm).	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Each flood control RICE shall comply with the following: (a) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. (b) Each flood control RICE may be operated during storm events for emergency water pumping to control flood. (c) Each flood control RICE may be operated for the purposes specified in Conditions 9(a) for up to 100 hours per calendar year. (d) Each flood control RICE shall operate less than 500 hours per rolling 12 month period for all operation.	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	PES shall keep records of the following: (a) NOx emission calculations or verification to demonstrate compliance with Condition 2. Verification may be based on operating hours and manufacturer's specifications or other AMS-approved emission factors; (b) Fuel type used and fuel manifests to demonstrate compliance with Condition 8; (c) Operating hours of each RICE in accordance with Conditions 9(a). (d) EPA Tier rating of each temporary RICE.	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	All records shall be kept for five (5) years and be produced upon request by Air Management Services.	PES Complies with this Requirement

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source in this site. Duplicate this section as needed).

For renewals, complete this section if a new combustion source is listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: EM-003 (GP)

b. Company Designation: Flood Control RICE at GP 2-separator

c. Plan Approval/Installation Permit or Operating Permit No.: New Source approved in 2018 per IP18-000374 to be added to Title V/State Operating Permit No. V06-016

d. Manufacturer: Caterpillar

e. Model No.: C9 2012

f. Source Description: Flood Control RICE For flood control at GP 2-separator

g. Rated Heat Input/Thruput: 700.0 MBTU/hr

h. Installation Date: 2018

i. Exhaust Temperature: Not Available Units:

j. Exhaust % Moisture:

k. Exhaust Flow Volume: ACFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
EM-003 (GP)	Flood Control RICE at GP 2-separator	S-3414 (GP)	Point of Air Emission Used by EM-003	100	NA	NA

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Diesel	NA	374 MBTU/hr	NA

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.3 of the application.

Maximum amount of hours of source operation per year: 500 on Emergency Basis

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Diesel				500		

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Diesel	IP18-000373 Dated 11/9/2018	Each flood control RICE shall be installed, operated, and maintained in accordance with both the manufacturer's specification and the specifications in the application (as approved herein).	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Nitrogen Oxides (NOx) emissions from each flood control RICE shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period. Assures compliance with the Plan Approval Exemption, 25 Pa Code § 127.14(a)(8)	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Carbon Monoxide (CO) emissions from each flood control RICE shall not exceed 1% by volume of exhaust gases. [AMR VIII]	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Particulate Matter (PM) emissions from each flood control RICE shall not exceed 0.04 grain per dry standard cubic foot. [25 Pa Code §123.13(c)(1)(i)]	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41] (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour; (b) Equal to or greater than 60% at any time.	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	In addition to the emission requirements of Conditions 2 thru 5, the 275 hp flood control RICE shall comply with the following emission requirements: (a) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine] (b) CO emissions shall not exceed 3.5 g/kW-hr or 2.6 g/hp-hr; [Tier 3 Engine] (c) PM emissions shall not exceed 0.20 g/kW-hr or 0.15 g/hp-hr. [Tier 3 Engine]	PES Complies with this Requirement

Diesel	IP18-000373 Dated 11/9/2018	Each flood control RICE shall only burn ultra low sulfur diesel fuel. The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm).	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	Each flood control RICE shall comply with the following: (a) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. (b) Each flood control RICE may be operated during storm events for emergency water pumping to control flood. (c) Each flood control RICE may be operated for the purposes specified in Conditions 9(a) for up to 100 hours per calendar year. (d) Each flood control RICE shall operate less than 500 hours per rolling 12 month period for all operation.	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	PES shall keep records of the following: (a) NOx emission calculations or verification to demonstrate compliance with Condition 2. Verification may be based on operating hours and manufacturer's specifications or other AMS-approved emission factors; (b) Fuel type used and fuel manifests to demonstrate compliance with Condition 8; (c) Operating hours of each RICE in accordance with Conditions 9(a). (d) EPA Tier rating of each temporary RICE.	PES Complies with this Requirement
Diesel	IP18-000373 Dated 11/9/2018	All records shall be kept for five (5) years and be produced upon request by Air Management Services.	PES Complies with this Requirement

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-120 (GP)

b. Company Designation: FCCU, Unit 1232 Regenerator

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Not Available

e. Model No.: Not Available

f. Source Description: FCCU, Unit 1232 Regenerator

g. Rated Heat Input/Thruput: 90,000 Barrels per day (365-day average)
100,000 Barrels per day (any single day)

h. Installation Date: 1964

i. Exhaust Temperature: 140 Units: °F

j. Exhaust % Moisture: Not Available

k. Exhaust Flow Volume: 450000 ACFM

7.2 CAM Information

Yes	No	
☒	☐	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

Emission unit is subject to an emission limitation or standard for NO_x, SO_2, and CO for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1

Potential precontrol emissions of VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act (See Addendum 3).

(Addendum 3 must be completed if both are checked “Yes”)

7.3 Exhaust System Components:

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Notes
Exhaust Scenario 1:					
P-120 (GP)	FCCU, Unit 1232 Regenerator	CD-004	Control Device CO Boiler	100	This exhaust scenario occurs 95% of the time or more, i.e. when the unit is operating under normal conditions.
CD-004	Control Device CO Boiler	CD-115	Control Device 1232 FCCU WGS System	100	
CD-115	Control Device 1232 FCCU WGS System	S-156 (GP)	Point of Air Emission Used by P-120, 1232 FCCU	100	
Exhaust Scenario 2:					
P-120 (GP)	FCCU, Unit 1232 Regenerator	CD-115	Control Device 1232 FCCU WGS System	100	This exhaust scenario occurs rarely but up to 5% of the time, i.e. when the unit is in Full-Burn operation and repairs are necessary on the CO Boiler. The exhaust from P-120 (GP) bypasses the CO Boiler in this circumstance.
CD-115	Control Device 1232 FCCU WGS System	S-156 (GP)	Point of Air Emission Used by P-120, 1232 FCCU	100	

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
FCCU Feed	Not Applicable	90,000 Barrels per day (365-day average) 100,000 Barrels per day (any single day)	Not Applicable

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
Not Applicable				

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Not Applicable						

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
FCCU Feed	RACT Plan Approval Condition 2(F) Dated 9 February 2016	The 1232 FCCU shall have Selective Catalytic Reduction (SCR). NOx emissions shall not exceed 30 ppmdv @ 0% oxygen on a 7-day rolling average and 208.28 tons per rolling 365-day period. The 1232 FCCU shall be operated with good combustion practices. A NOx Continuous Emission Monitoring System (CEMS) shall be operated on the unit.	PES complies with this requirement.
FCCU Feed	RACT Plan Approval Condition 2(G) Dated 9 February 2016	The 1232 FCCU shall vent to the CO Boiler when operating in partial-bum mode and shall follow good combustion practices.	PES complies with this requirement.
FCCU Feed	40 CFR 63 Subpart UUU (40 CFR 63.1565 for organic HAP emissions from catalytic cracking units)	For CO and inorganic HAP emissions during startup, shutdown and hot standby, the following control device parameters will be used to comply with the inorganic HAP work practice standards specified in 40 CFR Parts 63.1565(a)(5): a. CO emissions from the catalyst regenerator vent or CO Boiler must not exceed 500 ppmv (dry basis); or b. Maintain the oxygen (O2) concentration in the exhaust gas from the catalyst regenerator at or above 1 volume percent (dry basis).	PES complies with this requirement.

FCCU Feed	40 CFR 63 Subpart UUU (40 CFR 63.1564 for metal HAP emissions from catalytic cracking units)	The Permittee shall prepare an operation, maintenance, and monitoring plan (OMMP) according to the requirements in 40 CFR 63.1574(f) and operate at all times according to the procedures in the plan for each FCCU. [40 CFR63.1564(a)(3)] The Permittee shall demonstrate initial compliance by submitting the OMMP to Air Management Services as part of the Notification of Compliance Status. [40 CFR 63.1564(b)(6)]. The Permittee shall demonstrate continuous compliance by operating and maintaining records to document conformance with the procedures in the OMMP [40 CFR 63.1564(c)(2)].	PES complies with this requirement.
FCCU Feed	40 CFR 63 Subpart UUU (40 CFR 63.1571(a)(5), performance tests and initial compliance demonstrations for FCCUs)	The Permittee shall conduct a periodic performance test for PM or Ni for each catalytic cracking unit at least once every 5 years according to the requirements in Table 4 of 40 CFR Subpart UUU. The Permittee must conduct the first periodic performance test no later than August 1, 2017 or within 150 days of startup of a new unit.	PES complies with this requirement.

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

PES shall process a maximum of 90,000 barrels per day calculated on a 365 day rolling average basis. However, the FCCU may not process more than 100,000 barrels in any given day

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
See Section 7.8	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-594 (PB)

b. Company Designation: Point Breeze Tank #847, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: NA

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-594 (PB)	Process	S-929 (PB)	Point of Air Emission Used by P-594, Tank # 847	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Crude Oil - N/A Permit issued for the installation of geodesic domes on storage tank	General Permit Nos. 15184 - 15190 Issued: 08/24/2015	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-603 (PB)

b. Company Designation: Point Breeze Tank #885, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: NA

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-603 (PB)	Process	S-938 (PB)	Point of Air Emission Used by P-603, Tank # 885	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Crude Oil - N/A Permit issued for the installation of geodesic domes on storage tank	General Permit Nos. 15184 - 15190 Issued: 08/24/2015	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-604 (PB)

b. Company Designation: Point Breeze Tank #886, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: NA

i. Exhaust Temperature NA Units NA

j. Exhaust % Moisture NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-604 (PB)	Process	S-939 (PB)	Point of Air Emission Used by P-604, Tank # 886	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Crude Oil - N/A Permit issued for the installation of geodesic domes on storage tank	General Permit Nos. 15184 - 15190 Issued: 08/24/2015	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-643 (PB) (CD-112)

b. Company Designation: Flare, South Flare in South Yard

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Not Available

e. Model No.: Not Available

f. Source Description: Flare Process (Control Device)

g. Rated Heat Input/Thruput: Not Applicable

h. Installation Date: 1973

i. Exhaust Temperature: Not Applicable Units: Not Applicable

j. Exhaust % Moisture: Not Applicable

k. Exhaust Flow Volume: Not Applicable ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-643 (PB)	Process Flare, South Flare in South Yard	S-977 (PB)	Point of Air Emission Used by P-643, South Flare in South Yard Used by P-662, 869 Alkylation Unit	100%	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Refinery Fuel Gas	30600106	Not Available	Not Available

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
Refinery Fuel Gas	Not Applicable	Not Applicable	Not Applicable	Not Applicable

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Not Applicable						

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right. ☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas	Plan Approval No. 15271 Condition 14 Dated 25 April 2017 [CFR 60.104(a)(i)]	The Hydrogen Sulfide content of the fuel gas burned in the heaters and the South flare shall not exceed 0.1 grains per dry standard cubic foot or the concentration of SO2 emissions in the stack gases shall not exceed 20 ppmv (dry basis, zero percent excess air) [CFR 60.104(a)(i)]	PES complies with this requirement.
Refinery Fuel Gas	Plan Approval No. 15271 Condition 15(c) Dated 25 April 2017 [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]	The flare shall be operated with a minimum of a 98% Combustion Efficiency at all times when waste gases are vented to it. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]	PES complies with this requirement.
Refinery Fuel Gas	Plan Approval No. 15271 Condition 15(e) Dated 25 April 2017	PES shall operate and maintain a flare gas recovery system to prevent continuous or routine combustion in the flare. [Consent Decree, Use of the flare gas recovery system obviates the need to continuously monitor emissions as otherwise required by 40 CFR 60.105(a)(4)] (i) Periodic maintenance shall be conducted for flare gas recovery systems. (ii) All reasonable measures shall be taken to minimize emissions during the periodic maintenance on a flare gas recovery system is being performed. (iii) The flare gas recovery system may be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes.	PES complies with this requirement.

Refinery Fuel Gas	Plan Approval No. 15271 Condition 15(i) Dated 25 April 2017	The Permittee shall develop and implement a written flare management plan no later than the November 11, 2015 in accordance with 40 CFR 60.103a . (i) The Permittee shall conduct a root cause analysis and a corrective action analysis for each of the following [Consent Decree and 40 CFR 103a(c)] (ii) Any time the SO2 emission exceeds 227 kilograms (kg) (500 lbs) in any 24-hour period (iii) Any discharge to the flare in excess of 14,160 standard cubic meter (m3) (500,000 standard cubic feet (scf)) above the baseline, determined in 40 CFR 60.103a(a)(4)	PES complies with this requirement.

Refinery Fuel Gas	Plan Approval No. 15271 Condition 15(j) Dated 25 April 2017	The Permittee shall complete a root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified Condition (i) above. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are as follows: [40 CFR 60.103a(d)] (i) If a single continuous discharge meets any of the conditions specified in Condition 23(i)(i)-(iii) for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted. (ii) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions in Condition (i)(i) - (iii), a single root cause analysis and corrective action analysis may be conducted. (iii) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in 40 CFR 60.103a(a)(5) were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in §60.108a(c)(6) and reported as described in §60.108a(d)(5). (iv) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in 40 CFR 60.103a(c)(1)(i)-(iii) in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted. (v) Except as provided above in Condition (i) above, if discharges occur that meet any of the conditions specified in Condition (i above for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.	PES complies with this requirement.

Refinery Fuel Gas	Plan Approval No. 15271 Condition 15(k) Dated 25 April 2017	The Permittee shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to Condition (j) above in accordance with the following applicable requirements: [40 CFR 60.103a(e)] (i) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the Permittee concludes that corrective action should not be conducted, the Permittee shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 CFR §60.108a(c)(6)(ix). (ii) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable. (iii) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the Permittee shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 CFR §60.108a(c)(6)(x).	PES complies with this requirement.
Refinery Fuel Gas	Plan Approval No. 15271 Condition 26 Dated 25 April 2017	PES shall on a daily basis monitor and record the quantity and heating value of the refinery fuel gas that is combusted in the flare.	PES complies with this requirement.

Refinery Fuel Gas	Plan Approval No. 15271 Condition 35 Dated 25 April 2017	PES shall keep the following records for the flare: (c) The date, time, and duration of each flaring incident, the cause of the flaring incident, the flow rate of gases being sent to the flare during each flaring incident, and the amount of each pollutant emitted during each incident. (d) Discharges greater than 500 lb SO2 in any 24-hour period from the flare. Records shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds. The records shall include information as required in 40 CFR 60.108a(c)(6). [Consent Decree and 40 CFR 60.108a(c)(6)] (e) A copy of the Flare Management Plan.[40 CFR 60.108a(c)(1)] (f) If the monitoring option in 40 CFR 60.107a(e)(2) is used, the Permittee shall keep records of the H2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H2S ratios, the calculated 10-day average total sulfur-to-H2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H2S ratio. [40 CFR 60.108a(c)(7)] (i) Root cause analysis (ii) Stack tests conducted on the flare.	PES complies with this requirement
Refinery Fuel Gas	Plan Approval No. 15271 Condition 39 Dated 25 April 2017 [CFR 60.105(e)(3), 40 CFR 60.7(c)]	PES shall report semiannually all rolling 3-hour periods during which the average concentration of H2S in fuel gas exceeded 0.1 grains per dscf or all rolling 3-hour periods during which the average concentration of S02 in the stack exceeded 20 ppmv (dry basis, zero percent excess air).	PES complies with this requirement

Refinery Fuel Gas	Plan Approval No. 15271 Condition 42 Dated 25 April 2017	For the South Flare, (a) PES shall submit an excess emissions reports for all periods of excess emissions as defined in 40 CFR 60.107a(i)(2)(i) in accordance with 40 CFR 60.108a(d) (b) All notifications required in 40 CFR 60 Subpart Ja shall be submitted to the following address: [40 CFR60.103a(b)(3)] U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to refinerynsps@epa.gov (e) The Permittee shall submit CEM report for the H2S to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.	PES complies with this requirement

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

Not Applicable

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
Not Applicable	Not Applicable	Not Applicable

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: ~~P-646 (PB)~~ b. Company Designation: ~~Flares (2), Emergency Sulfur Plant~~

c. Plan Approval or Operating Permit No.: ~~Existing Source in Title V/State Operating Permit No. V06-016~~

d. Manufacturer: ~~NA~~ e. Model No.: ~~NA~~

f. Source Description: ~~Flare Process (Emergency Device)~~ This source is being removed from the facility.

g. Rated Heat Input/Thruput: ~~NA~~ h. Installation Date: ~~Replaced, 2005~~

i. Exhaust Temperature ~~NA~~ Units ~~NA~~ j. Exhaust % Moisture ~~NA~~ k. Exhaust Flow Volume: ~~NA~~ ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
~~P-643 (PB)~~	~~Process Flare, South Flare in South Yard~~	~~S-977 (PB)~~	~~Point of Air Emission Used by P-643, South Flare in South Yard Used by P-662, 869 Alkylation Unit~~	~~100%~~	~~NA~~	~~NA~~

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
~~Refinery Fuel Gas~~	~~NA~~	~~NA~~	~~NA~~

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
~~Refinery Fuel Gas~~	~~NA~~	~~NA~~	~~NA~~	~~300 BTU/scf or higher~~

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
~~NA~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~	~~NA~~

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.
For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Refinery Fuel Gas			NA – Source is being removed from Title V Permit

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

~~NA~~

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
~~NA~~	~~NA~~	~~NA~~

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-661 (PB)

b. Company Designation: Fluid Catalytic Cracking Regenerator – Unit 868

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: Not Available

e. Model No.: Not Available

f. Source Description: Fluid Catalytic Cracking Regenerator – Unit 868

g. Rated Heat Input/Thruput: 50,000 BBL/Day

h. Installation Date: ~ 1981

i. Exhaust Temperature: Not Available Units: Not Available

j. Exhaust % Moisture: Not Available

k. Exhaust Flow Volume: Not Available ACFM

7.2 CAM Information

Yes	No	
☒	☐	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

Emission unit is subject to an emission limitation or standard for NO_x, SO_2, and CO for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1

Potential precontrol emissions of VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act (See Addendum 3).

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	CD-110	Control Device Electrostatic Precipitator	100	NA	NA
CD-110	Control Device Electrostatic Precipitator (Includes Ammonia Injection, as described in Plan Approval IP16-000225)	S-985 (PB)	Point of Air Emission Used by P-661, FCCU (Unit 868)	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Not Applicable	Not Applicable	50,000 BBL/Day	Not Applicable

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
Not Applicable				

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Not Applicable						

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
FCCU Feed	RACT Plan Approval Condition No. 2(E) Dated 9 February 2016 Plan Approval IP16-000225 Condition 4 Dated 30 April 2018	The 868 FCCU NOx emissions shall be limited to 100 ppmdv @ 0% oxygen on a 7-day rolling average 130.2 tons per rolling 365-day period.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 2 Dated 30 April 2018	Ammonia slip may not exceed 5.55 lb/hr.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 3 Dated 30 April 2018	Ammonia emissions from the 868 FCCU shall not exceed 16.6 tons per rolling 12-month period.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 5 Dated 30 April 2018	Please incorporate changes to Table 21(a)(1) in the Title V Permit according to the table in Condition 5 of Plan Approval IP16-000225.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 6 [AMR II, Section VII] Dated 30 April 2018	At all times, Particulate Matter emissions from the 868 FCCU shall not exceed 40 pounds per hour. [AMR II, Section VII]	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 7 Dated 30 April 2018	The Permittee shall maintain the inlet velocity to the primary internal cyclones of the catalytic cracking unit catalyst regenerator at or above 20 feet per second (hourly average) during startup and shutdown. [Application]	PES complies with this requirement.

FCCU Feed	Plan Approval IP16-000225 Condition 8 Dated 30 April 2018 40 CFR 63.1565 (Subpart UUU)	The Permittee shall maintain the hourly average oxygen (O2) concentration in the exhaust gas from the 868 FCCU catalyst regenerator at or above 1 volume percent (dry basis) during start-up, shut-down, and hot standby. [Application, 40 CFR Subpart UUU]	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 9 Dated 30 April 2018	The 868 FCCU CO emissions shall be limited to 100 ppmvd at 0% O2 on a 365-day rolling average basis. [Consent Decree Order 05-02866, on March 21, 2006]	PES complies with this requirement.

FCCU Feed	Plan Approval IP16-000225 Condition 14 Dated 30 April 2018	PES shall conduct a performance test at the exhaust stack to establish emission factors and demonstrate compliance with Condition 2 for NH3. NH3 emissions shall be determined using the average of 3 one-hour tests per the EPA Reference Method CTM 027 or ASTM Method D6348-03.The performance test shall be conducted no later than 90 days after start-up. PES shall submit a stack test protocol to Air Management Services (AMS) at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing. If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, PES shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates. (a) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, PES must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher rate. (b) The 19% ammonia solution injection rate may not exceed a rate established under an AMS approved stack test that assures the ammonia slip level is not exceeded. The initial maximum rate shall be 7 gallons/hr until a different rate is established and approved by AMS. The ammonia slip rate (lb/hr) is expected to vary with injection rate. Therefore, compliance with the 12-month rolling ammonia limit (Condition 3) will be based upon source test results and a method approved by AMS. (c) If no NH3 is being added, NH3 emissions are assumed to be negligible.	PES complies with this requirement.

FCCU Feed	Plan Approval IP16-000225 Condition 15 Dated 30 April 2018 [PA RACT]	PES shall monitor and keep records of ammonia emissions on a monthly basis to demonstrate compliance with Condition 3. The compliance demonstration shall be based on AMS-approved stack tests. PES shall monitor and record daily ammonia usage, and continuously monitor and record the ammonia injection rate to ensure compliance with Condition 2.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 16 Dated 30 April 2018	PES shall keep the ammonia stack test records.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 18 Dated 30 April 2018	The Permittee shall install instrument to continuously monitor O2 level in the regenerator exhaust for correcting the data for excess air.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 22 Dated 30 April 2018	The Permittee shall keep continuous emission records for O2 level in the regenerator exhaust.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 23 Dated 30 April 2018	The Permittee shall continuously monitor and record the inlet velocity to the primary cyclones of the catalytic cracking unit catalyst regenerator during periods of start-up, shut-down and hot standby for the 868 FCCU.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 24 Dated 30 April 2018	The Permittee shall keep records of all periods of start-up, shut-down, and hot standby for the 868 FCCU.	PES complies with this requirement.
FCCU Feed	Plan Approval IP16-000225 Condition 25 Dated 30 April 2018	The Permittee shall keep records demonstrating compliance with the emission limits in this plan approval. (a) Compliance with ammonia, PM, and HC limits shall be based on AMS-approved stack tests. (b) Compliance with SO2, CO, and NOx limits shall be based on CEMS and continuous flow monitor data. Records shall be in the same units and averaging periods as the emission limits.	PES complies with this requirement.

FCCU Feed	Plan Approval IP16-000225 Condition 26 Dated 30 April 2018	All records shall be kept for a minimum period of 5 years and produced upon request by AMS.	PES complies with this requirement.
FCCU Feed	40 CFR 63 Subpart UUU (40 CFR 63.1564 for metal HAP emissions from catalytic cracking units) Plan Approval IP16-000225 Condition 13 Dated 30 April 2018	The Permittee shall prepare an operation, maintenance, and monitoring plan (OMMP) according to the requirements in 40 CFR 63.1574(f) and operate at all times according to the procedures in the plan for each FCCU. [40 CFR63.1564(a)(3)] The Permittee shall demonstrate initial compliance by submitting the OMMP to Air Management Services as part of the Notification of Compliance Status. [40 CFR 63.1564(b)(6)]. The Permittee shall demonstrate continuous compliance by operating and maintaining records to document conformance with the procedures in the OMMP [40 CFR 63.1564(c)(2)].	PES complies with this requirement.
FCCU Feed	40 CFR 63 Subpart UUU (40 CFR 63.1571(a)(5), performance tests and initial compliance demonstrations for FCCUs)	The Permittee shall conduct a periodic performance test for PM or Ni for each catalytic cracking unit at least once every 5 years according to the requirements in Table 4 of 40 CFR Subpart UUU.	PES complies with this requirement.

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

PES shall process a maximum of 47,500 barrels per day calculated on a 365 day rolling average basis. However, the FCCU may not process more than 50,000 barrels in any given day.

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
Not Applicable	Not Applicable	Not Applicable

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-662 (PB) b. Company Designation: Alkylation Unit 869

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V16-016

d. Manufacturer: Not Available e. Model No.: Not Available

f. Source Description: Process

g. Rated Heat Input/Thruput: Not Applicable h. Installation Date: 1990

i. Exhaust Temperature: Not Available Units: Not Available j. Exhaust % Moisture: Not Available k. Exhaust Flow Volume: Not Available ACFM

7.2 CAM Information

Yes	No	
☒	☐	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☒	☐	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

Emission unit is not subject to an emission limitation or standard for NOx, CO, VOC, PM, and SO2.

Emission unit is subject to an emission limitation or standard for HAPs which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1 (See Addendum 3).

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-662 (PB)	Alkylation Unit 869	CD-111 (P-642) Or CD-112 (P-643)	Control Device North Flare in South Yard Used by P-662 South Flare in South Yard Used by P-662	100	NA	NA
CD-111 (P-642) Or CD-112 (P-643)	Control Device North Flare in South Yard Used by P-662 South Flare in South Yard Used by P-662	S-976 (PB) Or S-977 (PB)	Point of Air Emission Used by P-642, North Flare in South Yard Used by P-643, South Flare in South Yard	100	NA	NA

P-662 (PB)	Alkylation Unit 869	S-986 (PB)	Point of Air Emission Used by P-662, Alkylation Unit 869	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Olefin Feed	Not Applicable	8,500 barrels per stream day	Not Applicable
Olefin Feed	Not Applicable	2,737,500 barrels in any 12-month rolling period	Not Applicable

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
Not Applicable				

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Olefin Feed	Not Applicable	Not Applicable	Not Applicable	Not Applicable	8,500	Barrels per stream day
Olefin Feed	Not Applicable	Not Applicable	Not Applicable	Not Applicable	2,737,500	Barrels in any 12-month rolling period

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Olefin Feed	AMS Plan Approval No. IP17-000086 Condition 2 Dated 17 October 2017	For Unit 869 Alkylation plant, Olefin feed shall not exceed 8,500 barrels per day and 2,737,500 barrels in any 12-month rolling period.	

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

Olefin feed to the 869 Alkylation plant shall not exceed 8,500 barrels per stream day and 2.737,500 barrels in any 12-month rolling period.

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
Not Applicable	Not Applicable	Not Applicable

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: CD-004

b. Company Designation: CO Boiler

c. Plan Approval or Operating Permit No.: Existing Control Device in Title V/State Operating Permit No. V06-016

d. Manufacturer: UOP

e. Model No.: Field Constructed

f. Source Description: CO Boiler

g. Rated Heat Input/Thruput: 580 MMBtu/hr

h. Installation Date: 1955

i. Exhaust Temperature ~ 430 Units ^{o}F

j. Exhaust % Moisture ~ 12%

k. Exhaust Flow Volume: 544,288 ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
CD-004	Control Device CO Boiler	CD-115	Control Device 1232 FCCU WGS System	100	Not Available	Not Available
CD-115	Control Device 1232 FCCU WGS System	S-156 (GP)	Point of Air Emission Used by P-120, 1232 FCCU	100	Not Available	Not Available

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
FCCU Feed	Not Available	90,000 Barrels per day (365-day average) 100,000 Barrels per day (any single day)	Not Available

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
Not Applicable				

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Not Applicable						

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

Not Applicable

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
Not Applicable		

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-636 (PB)

b. Company Designation: Marine Barge Loading

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: ~~NA~~

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: NA

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-636 (PB)	Process	~~CD-103~~ Control Device Removed	~~Control Device~~ ~~Refinery Fuel Gas System – Boilers and Heaters~~	~~NA~~	~~NA~~	~~NA~~
P-636 (PB)	Process	S-970 (PB)	Point of Air Emission Used by P-636, Barge Loading	NA	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
NA	NA	NA	NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Loading Fuels / Products	RACT Plan Approval Issued: 2/9/16	Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4psi or greater	PES Complies with this limitation
Loading Fuels / Products	RACT Plan Approval Issued: 2/9/16	VOC Emissions from Point Breeze Loading shall not exceed 25.99 tons per rolling 12-month period	PES Complies with this limitation

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-541 (PB)

b. Company Designation: Tank # 178, EFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1974

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-541 (PB)	Process	S-876 (PB)	Point of Air Emission Used by P-541, Tank # 178	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
~~Reformer Feed~~ Gasoline Blending Components		NA	NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Gasoline Blending Components	Plan Approval No. 15271 Condition 18 Dated 25 April 2017	PES shall not store VOC liquids that have a Reid vapor pressure greater than 10 psia in the storage tank.	PES Complies with this requirement* *Limit currently exists in Title V; tank has been reactivated according to Plan Approval
Gasoline Blending Components	Plan Approval No. 15271 Condition 33 Dated 25 April 2017	PES shall on a monthly basis keep records of the emissions from all new or reactivated sources covered by this plan approval to demonstrate compliance with the emission limits listed in Table 1a. of Plan Approval No.15271	PES Complies with this requirement* *Limit currently exists in Title V; tank has been reactivated according to Plan Approval
Gasoline Blending Components	Plan Approval No. 15271 Condition 40 Dated 25 April 2017	For the storage tank, PES shall follow reporting procedures specified in 40 CFR 60.115(b) and 116(b).	PES Complies with this requirement* *Limit currently exists in Title V; tank has been reactivated according to Plan Approval
Gasoline Blending Components	Plan Approval No. 15271 Condition 24 Dated 25 April 2017	PES shall follow testing procedures specified in 40 CFR 60.113b. If a failure is detected, PES shall repair the items or empty and remove the storage vessel from service within 45 days. If this cannot be done in 45 days, AMS shall be notified and a 30-day extension may be requested from AMS. PES shall assure that either the equipment is repaired or the tank is emptied within the 30 additional days.	PES Complies with this requirement* *Limit currently exists in Title V; tank has been reactivated according to Plan Approval

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-590 (PB)

b. Company Designation: Tank # 843, EFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1954

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-590 (PB)	Process	S-925 (PB)	Point of Air Emission Used by P-590, Tank # 843	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Crude Oil or Crude Oil Prep Tank – N/A, changing from crude oil prep tank to crude oil service tank	General Plan Approval and General Operating Permit Application General Permit No. 08044 Dated: January 7, 2013	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-015 (GP)

b. Company Designation: Tank # 285, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1971

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-015 (GP)	Process	S-214 (GP)	Point of Air Emission Used by P-015, Tank # 285	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Gasoline Components			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Gasoline Components – NA	General Plan Approval and General Operating Permit Application General Permit No. 14228 Issued: 9/24/2014	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-510 (PB) (mislabeled as P-010 on permit)

b. Company Designation: Tank # PB-36, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process – Existing EFR Reactivated as IFR with addition of dome.

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1993

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-510 (GP)	Process	S-845 (GP)	Point of Air Emission Used by P-510, Tank # 36	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Gasoline Components			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Gasoline Components – NA Issued to return P-510 with external roof to gasoline component service	General Plan Approval and General Operating Permit Application General Permit No. 14237 Issued: 8/29/14	General Permit Conditions – All in current TVOP	PES Complies with these limitations
Gasoline Components – NA Issued to repair, modify, and reactivate P-510 with Internal Floating Roof (Dome) to gasoline component service	General Plan Approval and General Operating Permit Application General Permit No. 15101 Issued: 03/24/2015	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-537 (PB)

b. Company Designation: Tank # 162, EFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1908

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-537 (PB)	Process	S-872 (PB)	Point of Air Emission Used by P-537, Tank # 162	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Gasoline Components			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Gasoline Components – NA Issued to modify / reactive P-537 to Gasoline and Gasoline Components Service	General Plan Approval and General Operating Permit Application General Permit No. IP-1600009 Issued: 3/9/16	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-130 (GP)

b. Company Designation: Barge Loading – Girard Point

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: NA

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-130 (GP)	Process	S-143 (GP)	Point of Air Emission Used by P-130, Barge Loading	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Gasoline Components			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Crude Oil	RACT Plan Approval Issued: 2/9/2016	Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder.	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-595 (PB) (Reactivated tank)

b. Company Designation: Point Breeze Tank #848

c. Plan Approval or Operating Permit No.: New Source, GP IP17-000514

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date:

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-595 (PB)	Process	To Be Determined	To Be Determined	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Distillate Components			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Distillate Components – N/A Reactivated for distillate component service	General Permit IP17-000514 Issued: 01/08/2018	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: FP-020 (Fire Pump)

b. Company Designation: Butane Terminal Firewater System Pump #1 (JX6H-UFADF0)

c. Plan Approval or Operating Permit No.: New Source, AMS Installation Permit Nos.: 14219-14220

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date:

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
FP-020 (PB)	Process	To Be Determined	To Be Determined	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Diesel			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Diesel	AMS Installation Permit No.: 14219-14220 Issued: 08/11/2014	No new limitations – All limitations from Fire Pump Installation Permit already incorporated in TVOP V06-016	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: FP-021 (Fire Pump)

b. Company Designation: Butane Terminal Firewater System Pump #2 (JX6H-UFADF0)

c. Plan Approval or Operating Permit No.: New Source, AMS Installation Permit Nos.: 14219-14220

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date:

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
FP-021	Process	To Be Determined	To Be Determined	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Diesel			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Diesel	AMS Installation Permit No.: 14219-14220 Issued: 08/11/2014	No new limitations – All limitations from Fire Pump Installation Permit already incorporated in TVOP V06-016	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-637 (GP)

b. Company Designation: Butane Railcar Loading/Unloading

c. Plan Approval or Operating Permit No.: New Source, AMS Installation Permit No.: 14045

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 2015

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
Unit ID To Be Determined	Butane Railcar Loading/ Unloading	P-117 (GP) – CD012 & P-118 (GP) – CD013	1231 Flare – Unit 1232 & 1232 Flare – Unit 1232	100	2015	NA
P-117 (GP) – CD012 & P-118 (GP) – CD013	1231 Flare – Unit 1232 & 1232 Flare – Unit 1232	S-153 (GP) & S-154 (GP)	Used by P-117, 1231 Flare & Used by P-118, 1232 Flare			

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Butane			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	Volatile Organic Compounds (VOC) emissions from the railcar butane loading/unloading operation shall be less than 2.7 tons on rolling 12-month period [Plan Approval Exemption]	PES Complies with these limitations
Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	The Permittee shall only process butane/isobutane/n-butane/butylene streams at railcar loading/unloading stations.	PES Complies with these limitations
Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	The loading/unloading hoses and pipes shall be vented to the 1231/1232 flare and depressurized to 5-7 psig prior to disconnecting from the station.	PES Complies with these limitations
Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	All connections shall be equipped with fittings which shall be vapor tight and will automatically and immediately close upon disconnection so as to prevent organic material emissions.	PES Complies with these limitations
Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	No person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts. nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V Sec XIII] (a) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the AMS; or (b) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.	PES Complies with these limitations

Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	The Permittee shall monitor and keep records of VOC emissions on monthly and rolling 12-month basis. VOC emission shall be based on number of loading/unloading operations per day, number of venting to atmosphere, and the following emission factors or other AMS approved factors. a) Stinger: 0.008 lb/hose (all loading/unloading events) b) Vapor hose: 0.1 lb/hose (only when opening hose to atmosphere) c) Product hose: 0.2 lb/hose (only when opening hose to atmosphere)	PES Complies with these limitations
Butane	AMS Installation Permit No.: 14045 Issued: 04/08/2014	The fugitive emission shall be monitored and recorded on quarterly basis in accordance with the LDAR program for all valves, flanges, and connectors in VOC service.	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-644 (PB)

b. Company Designation: Two (2) Crude Rail Car Unloading Facilities

c. Plan Approval or Operating Permit No.: New Source, AMS Installation Permit No.: 13020B

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 2015

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities	S-979 (PB)	Point of Air Emission Used by P-644, Two (2) Crude Rail Car Unloading Facilities	100		

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Butane			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015	Fugitive VOC emissions from each crude rail car unloading facility shall not exceed 500 lbs per rolling 12-month period.	PES Complies with this limitation.
Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015 [AMR V Sec IV]	All pumps handling organic materials having a vapor pressure of 1.5 pounds per square inch absolute or greater at ambient conditions shall have mechanical seals, or other components of equal or greater efficiency approved by AMS.	PES Complies with this limitation.
Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015	PES shall only unload using vapor tight connections and when vapor recovery system is in operation.	PES Complies with this limitation.
Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015 [AMR V Sec XX]	PES shall take any steps necessary to eliminate any emission from this operation that could create odor beyond its facility boundary.	PES Complies with this limitation.
Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015 [AMR V, Consent Decree, PA Code 129.58]	PES shall incorporate all components of fugitive source into the Refinery's current Leak Detection and Repair Program. The leak inspection program shall be in accordance with 25 PA Code 129.58, AMR V, and the Consent Decree. A visual check for leaks shall be performed at the beginning of each transfer, and PES shall continue to visually monitor for leaks during the transfer.	PES Complies with this limitation.

Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015	PES shall monitor and record the following for crude oil transfer operations in a format that is acceptable to AMS: (a) On monthly basis monitor and record crude throughput at the 137 Crude Unit and the 210 Crude Unit. (b) Calculate monthly fugitive VOC emission from all valves, pumps compressors, safety pressure relief devices or other process equipment components to demonstrate compliance with Condition 2. (i) Verification shall be based on EPA 1995 Protocol for Equipment Leak Emission Estimates, Table 2-12, or subsequent AMS approved factors. (c) On a monthly basis, record the following: (i) The true vapor pressure and Reid Vapor Pressure of the crude oil loaded. (ii) Any daily malfunctions that occur during the transfer operation. (iii) Quantity of crude oil loaded during malfunctions	PES Complies with this limitation.
Crude Oil	AMS Installation Permit No.: 13020B Amended: 20 March 2015 Consent Decree	PES shall submit semi-annual reports as required by the Global Consent Decree issued as part of Civil Action No. 05-02866.	PES Complies with this limitation.

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-163 (GP)

b. Company Designation: Girard Point Tank #1209, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1960

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-163 (GP)	Process	S-249 (GP)	Point of Air Emission used by P-163 (GP), Tank # 1209	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Benzene			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Benzene - N/A Permit issued for tank reactivation to store benzene with internal floating roof	General Permit Nos. IP17000004 Issued: 01/20/2017	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-165 (GP)

b. Company Designation: Girard Point Tank #1212

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1960

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-165 (GP)	Process	S-250 (GP)	Point of Air Emission used by P-165 (GP), Tank # 1212	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Cumene			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Cumene - N/A Permit issued for reactivation of Tank GP 1212 (P-165) to Cumene Service	General Permit Nos. IP-16000034 Issued: 04/26/2016	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-026 (GP)

b. Company Designation: Girard Point Tank #1208, IFR

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA

e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA

h. Installation Date: 1960

i. Exhaust Temperature: NA Units: NA

j. Exhaust % Moisture: NA

k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-026 (GP)	Process	S-225 (GP)	Point of Air Emission used by P-026 (GP), Tank # 1208	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Benzene			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Benzene - N/A Permit issued for tank reactivation to store benzene with internal floating roof	General Permit Nos. IP17000004 Issued: 01/20/2017	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, complete this section if a new process is listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-144 (GP) b. Company Designation: Girard Point Tank #219

c. Plan Approval or Operating Permit No.: Existing Source in Title V/State Operating Permit No. V06-016

d. Manufacturer: NA e. Model No.: NA

f. Source Description: Process

g. Rated Heat Input/Thruput: NA h. Installation Date: 1965

i. Exhaust Temperature NA Units NA j. Exhaust % Moisture NA k. Exhaust Flow Volume: NA ACFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential **precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.**

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit ID	Unit Description	To Unit ID	Unit Description	Percent Flow	Begin Date	End Date
P-144 (GP)	Process	S-251 (GP)	Point of Air Emission used by P-144 (GP), Tank # 219	100	NA	NA

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Cutter Stock			NA

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)
NA	NA	NA	NA	NA

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
NA	NA	NA	NA	NA	NA	NA

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
Cutter Stock - N/A Permit issued for tank reactivation to store Cutter Stock	General Permit Nos. IP17-000133 Issued: 05/15/2017	General Permit Conditions – All in current TVOP	PES Complies with these limitations

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

NA

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials
NA	NA	NA

7.10 Request for Confidentiality

Do you request that the information on this page be considered kept confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirements of 25 Pa. Code§ 127.411(d).

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, only list new control devices not included in the current Title V Operating Permit.

8.1 General Control Device Information

a. Unit ID: CD-008 (GP)

b. Company Designation: NOx SCR for Unit 1332 Heaters H-400/401

c. Used by Source(s): CU-010 and CU-011

d. Type: Selective Catalytic Reduction

e. Pressure Drop in H_20: Not Applicable

f. Capture Efficiency: Not Applicable

g. Scrubber Flow Rate (GPM): Not Applicable

h. Manufacturer: Not Applicable

i. Model No.: Not Applicable

j. Installation Date: Not Applicable

k. Control Device Efficiency Estimates for this control device: Not Applicable

Pollutant or CAS No.	Estimated Control Efficiency	Basis for Efficiency Estimate
NOx	Not Applicable	Not Applicable

8.2 Control Device Efficiencies for Hazardous Air Pollutants

Unit ID No.	Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Estimate

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, only list new control devices not included in the current Title V Operating Permit.

8.1 General Control Device Information

a. Unit ID: CD-015

b. Company Designation: CO Oxidation Catalyst on Boiler No. 45

c. Used by Source(s): CU-022

d. Type: Catalytic Reduction

e. Pressure Drop in H_20: Not Applicable

f. Capture Efficiency: Not Applicable

g. Scrubber Flow Rate (GPM): Not Applicable

h. Manufacturer: Durr Environmental, Inc.

i. Model No.: Sunoco specified design

j. Installation Date: 2014

k. Control Device Efficiency Estimates for this control device: 90%

Pollutant or CAS No.	Estimated Control Efficiency	Basis for Efficiency Estimate
CO	90%	Design Efficiency at 561 °F

8.2 Control Device Efficiencies for Hazardous Air Pollutants

Unit ID No.	Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Estimate

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, only list new control devices not included in the current Title V Operating Permit.

8.1 General Control Device Information

a. Unit ID: CD-016

b. Company Designation: Selective Catalytic Reduction on Boiler No. 45

c. Used by Source(s): CU-022

d. Type: Catalytic Reduction

e. Pressure Drop in H_20: Not Applicable

f. Capture Efficiency: Not Applicable

g. Scrubber Flow Rate (GPM): Not Applicable

h. Manufacturer: Durr Environmental, Inc.

i. Model No.: Sunoco specified design

j. Installation Date: 2014

k. Control Device Efficiency Estimates for this control device: 92.5%

Pollutant or CAS No.	Estimated Control Efficiency	Basis for Efficiency Estimate
NOx	92.5%	Design Efficiency at 560 °F

8.2 Control Device Efficiencies for Hazardous Air Pollutants

Unit ID No.	Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Estimate

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, only list new control devices not included in the current Title V Operating Permit.

8.1 General Control Device Information

a. Unit ID: CD-017

b. Company Designation: Wet Electrostatic Precipitator for Boiler No. 45

c. Used by Source(s): CU-022

d. Type: Single Stage Wet Electrostatic Precipitator

e. Pressure Drop in H_20: Across Collector Only

f. Capture Efficiency: Not Available

g. Scrubber Flow Rate (GPM): Not Applicable

h. Manufacturer: PPC Industries

i. Model No.: 12R-144-234

j. Installation Date: 2014

k. Control Device Efficiency Estimates for this control device: Not Available

Pollutant or CAS No.	Estimated Control Efficiency	Basis for Efficiency Estimate
PM/PM10/PM2.5	Not Available	

8.2 Control Device Efficiencies for Hazardous Air Pollutants

Unit ID No.	Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Estimate

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, only list new control devices not included in the current Title V Operating Permit.

8.1 General Control Device Information

a. Unit ID: CD-115

b. Company Designation: Selective Catalytic Reduction (SCR) System

c. Used by Source(s): P-120 (GP)

d. Type: 1232 FCCU SCR System

e. Pressure Drop in H_20: NA

f. Capture Efficiency: NA

g. Scrubber Flow Rate (GPM): NA

h. Manufacturer: Mitsubishi (TBD)

i. Model No.: TBD

j. Installation Date: 2006

k. Control Device Efficiency Estimates for this control device: NA

Pollutant or CAS No.	Estimated Control Efficiency	Basis for Efficiency Estimate
NA – Refinery meets the stack emission limitation for S-156 (GP) pursuant to Plan Approval No. 04322.	NA	NA

8.2 Control Device Efficiencies for Hazardous Air Pollutants

Unit ID No.	Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Estimate
NA – Refinery meets the stack emission limitation for S-156 (GP) pursuant to Plan Approval No. 04322.	NA	NA	NA	NA

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, only list new control devices not included in the current Title V Operating Permit.

8.1 General Control Device Information

a. Unit ID: CD-116

b. Company Designation: Wet Gas Scrubber (WGS) System

c. Used by Source(s): P-120 (GP)

d. Type: 1232 FCCU WGS System

e. Pressure Drop in H_20: Not Available

f. Capture Efficiency: Not Available

g. Scrubber Flow Rate (GPM): Not Available

h. Manufacturer: Belco Technologies Corp.

i. Model No.: Not Available

j. Installation Date: 2006

k. Control Device Efficiency Estimates for this control device: Not Available

Pollutant or CAS No.	Estimated Control Efficiency	Basis for Efficiency Estimate
NA – Refinery meets the stack emission limitation for S-156 (GP) pursuant to Plan Approval No. 04322.		

8.2 Control Device Efficiencies for Hazardous Air Pollutants

Unit ID No.	Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Estimate
NA – Refinery meets the stack emission limitation for S-156 (GP) pursuant to Plan Approval No. 04322.				

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, list new stack/flue information not specified in the current Title V Operating Permit.

9.1 General Stack/Vent Information

a. Unit ID: S-249 (GP) b. Company Designation: Point of Air Emission Used by P-163

c. Discharge Type: Fugitive

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: P-163 (Tank #1209) at GP

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

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a. Unit ID: S-250 (GP) b. Company Designation: Point of Air Emission used by P-165

c. Discharge Type: Fugitive

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Not Available Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: P-165 (Tank #1212) at GP

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, list new stack/flue information not specified in the current Title V Operating Permit.

9.1 General Stack/Vent Information

a. Unit ID: S-225 (GP) b. Company Designation: Point of Air Emission Used by P-026

c. Discharge Type: Fugitive

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: P-026 (Tank #1208) at GP

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

---

a. Unit ID: S-251 (GP) b. Company Designation: Point of Air Emission used by P-144

c. Discharge Type: Fugitive

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Not Available Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: P-144 (Tank #219) at GP

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, list new stack/flue information not specified in the current Title V Operating Permit.

9.1 General Stack/Vent Information

a. Unit ID: S-126 (GP) b. Company Designation: Point of Air Emission Used by CU-022, No. 3 Boilerhouse 45 Boiler

c. Discharge Type: Vertical

d. Diameter (ft): Not Available Height (ft): 150 Base Elevation (ft): Not Available

e. Exhaust Temperature: ~ 144 ^{o}F Exhaust % Moisture: ~ 4-6% Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: ~ 85,600 ACFM Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: CU-022, No. 3 Boilerhouse, 45 Boiler

j. UTM Zone: 18 UTM North: 4417.939 km UTM East: 483.129 km

k. Method of Obtaining UTM: Transverse Mercator Calculator

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a. Unit ID: S-8703 (PB) b. Company Designation: Point of Air Emission Used by CU-140, Unit 870, H3 Heater

c. Discharge Type: Vertical

d. Diameter (ft): 6 Height (ft): 150 Base Elevation (ft): Not Available

e. Exhaust Temperature: ~ 425 ^{o}F Exhaust % Moisture: ~ 0% Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: ~ 27,000 ACFM Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): ~1,500

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: CU-140, Unit 870, H3 Heater

j. UTM Zone: 18 UTM North: 4417.939 km UTM East: 483.129 km

k. Method of Obtaining UTM: Transverse Mercator Calculator

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, list new stack/flue information not specified in the current Title V Operating Permit.

9.1 General Stack/Vent Information

a. Unit ID: S-979 (PB) b. Company Designation: Point of Air Emission Used by P-644, Two (2) Crude Rail Car Unloading Facilities

c. Discharge Type: Fugitive

d. Diameter (ft): Not Applicable Height (ft): Not Applicable Base Elevation (ft): Not Applicable

e. Exhaust Temperature: Not Applicable Exhaust % Moisture: Not Applicable Exhaust Velocity (ft/sec): Not Applicable

f. Exhaust Volume: Not Applicable ACFM Exhaust Volume: Not Applicable SCFM

g. Distance to Nearest Property Line (ft): Not Applicable

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: P-644, Two (2) Crude Rail Car Unloading Facilities

j. UTM Zone: Not Applicable UTM North: Not Applicable UTM East: Not Applicable

k. Method of Obtaining UTM: Not Applicable

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a. Unit ID: S-127 (PB) b. Company Designation: Point of Air Emission used by CU-025,Warehouse Boiler No. 1

c. Discharge Type: Vertical

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Not Available Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: CU-025 (PB), Warehouse Boiler No. 1

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, list new stack/flue information not specified in the current Title V Operating Permit.

9.1 General Stack/Vent Information

a. Unit ID: S-3413 (GP) b. Company Designation: Point of Air Emission Used by EM-002

c. Discharge Type: Vertical Stack

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: EM-002 Flood Control RICE at GP 2nd and J

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

---

a. Unit ID: S-3414 (GP) b. Company Designation: Point of Air Emission used by EM-003

c. Discharge Type: Vertical Stack

d. Diameter (ft): Not Available Height (ft): Not Available Base Elevation (ft): Not Available

e. Exhaust Temperature: Not Available Exhaust % Moisture: Not Available Exhaust Velocity (ft/sec): Not Available

f. Exhaust Volume: Not Available ACFM Not Available Exhaust Volume: Not Available SCFM

g. Distance to Nearest Property Line (ft): Not Available

h. Weather Cap?: ☐ Yes ☒ No

i. Used by Sources: EM-003 Flood Control RICE at GP 2-separator

j. UTM Zone: Not Available UTM North: Not Available UTM East: Not Available

k. Method of Obtaining UTM: Not Available

Section 10 - Fuel Material Location (FML) Information (optional)

For renewals, list new fuel material location information not specified in the current Title V Operating Permit.

10.1 Fuel Material Location Information - NA

a. FML ID No.: Not Applicable b. Name: _____

c. Capacity: _____ Units: _____ d. Fuel: _____

e. Maximum Fuel Characteristics: If fuel is coal, what is the moisture content? _____

% Ash _____ % Sulfur: _____ BTU Content: _____ Units: _____

f. Used by Source(s):

_____

_____

---

a. FML ID No.: _____ b. Name: _____

c. Capacity: _____ Units: _____ d. Fuel: _____

e. Maximum Fuel Characteristics: If fuel is coal, what is the moisture content? _____

% Ash _____ % Sulfur: _____ BTU Content: _____ Units: _____

f. Used by Source(s):

_____

_____

---

a. FML ID No.: _____ b. Name: _____

c. Capacity: _____ Units: _____ d. Fuel: _____

e. Maximum Fuel Characteristics: If fuel is coal, what is the moisture content? _____

% Ash _____ % Sulfur: _____ BTU Content: _____ Units: _____

f. Used by Source(s):

_____

_____

Section 11 - Compliance Plan for the Facility

		Yes	No
11.1	Will your facility be in compliance with all applicable requirements at the time of permit issuance and continue to comply with these requirements during the permit duration?	☒	☐
11.2	Will your facility be in compliance with all applicable requirements presently scheduled to take effect during the term of the permit?	☒	☐
11.3	Will these requirements be met by the regulatory required dates?	☒	☐

If you checked "No" in Part 11.1, 11.2 or 11.3, answer the following questions:

11.4 Identify applicable requirement(s) for which compliance is not or will not be achieved:

Source ID No.	Citation No.

11.4.2 Briefly describe how compliance with this/these applicable requirement(s) will be achieved:

11.4.3. Provide a detailed schedule of compliance for the noncomplying sources or activities identified in this section of the application. Include an enforceable sequence of corrective actions with milestone and projected compliance dates.

Date	Action/Milestone

11.4.4. Indicate the submittal frequency l for the progress report (s): _____

11.4.5. Starting date for the submittal of the progress report(s): _____

Section 12 - Compliance Certification

12.1 Schedule for Compliance Certification Submission

a. Frequency of Submittal: Annual

b. Schedule specified in current Title V Operating Permit or proposed starting date:

Annual Compliance Certification shall be submitted by March 1 of each year for the period of the previous calendar year.

Semiannual Monitoring Deviation Report shall be submitted Jan 31 and Jul 31 for the respective previous six month period.

12.2 Monitoring Compliance

Is the site identified in this application in compliance with all applicable requirements and compliance certification requirements:

☒ Yes ☐ No

If "No", describe which requirements are not being met:

12.3 Certification of Compliance

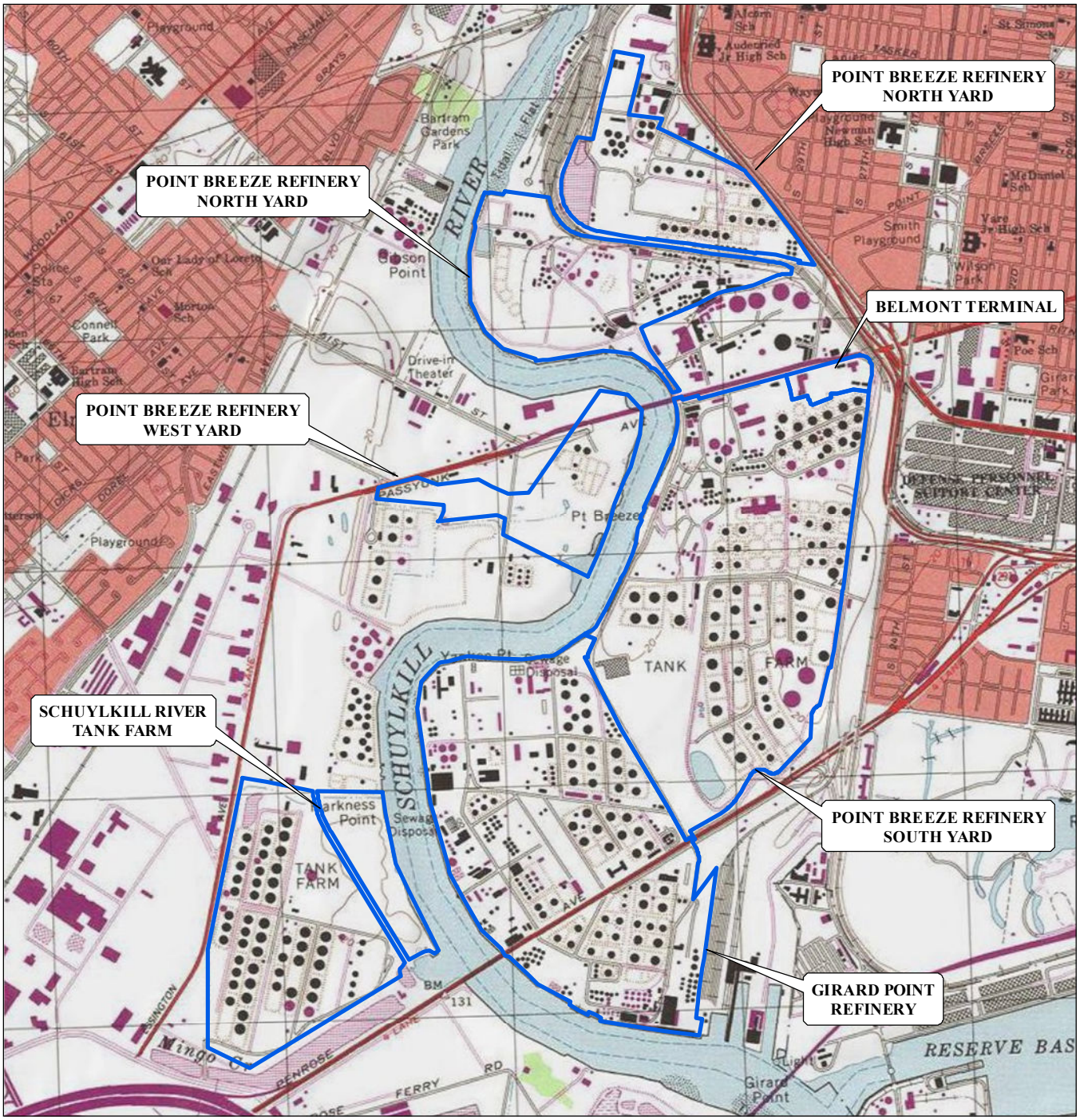
Subject to the penalties of Title 18 Pa. C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I certify that I have the authority to submit this Permit Application on behalf of the applicant herein and that based on information and belief formed after reasonable inquiry, the statements and information contained in this application is correct to the best of my knowledge.

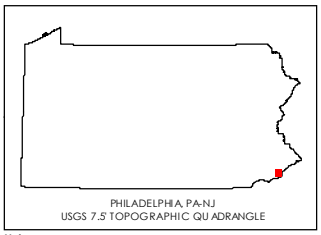
(Signed) Mark O. Brandon Date 12/17/19

Name (Typed) Mark O. Brandon

Title: Vice President and General Manager

Attachment B
Site Location Map/Process Flow Diagrams





Legend

PHILADELPHIA REFINING COMPLEX

0 1,100 2,200 Feet

1:26,400 (at original document size of 8.5x11)

N

Stantec

EVERGREEN

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Sources: Stantec, USGS
3. Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

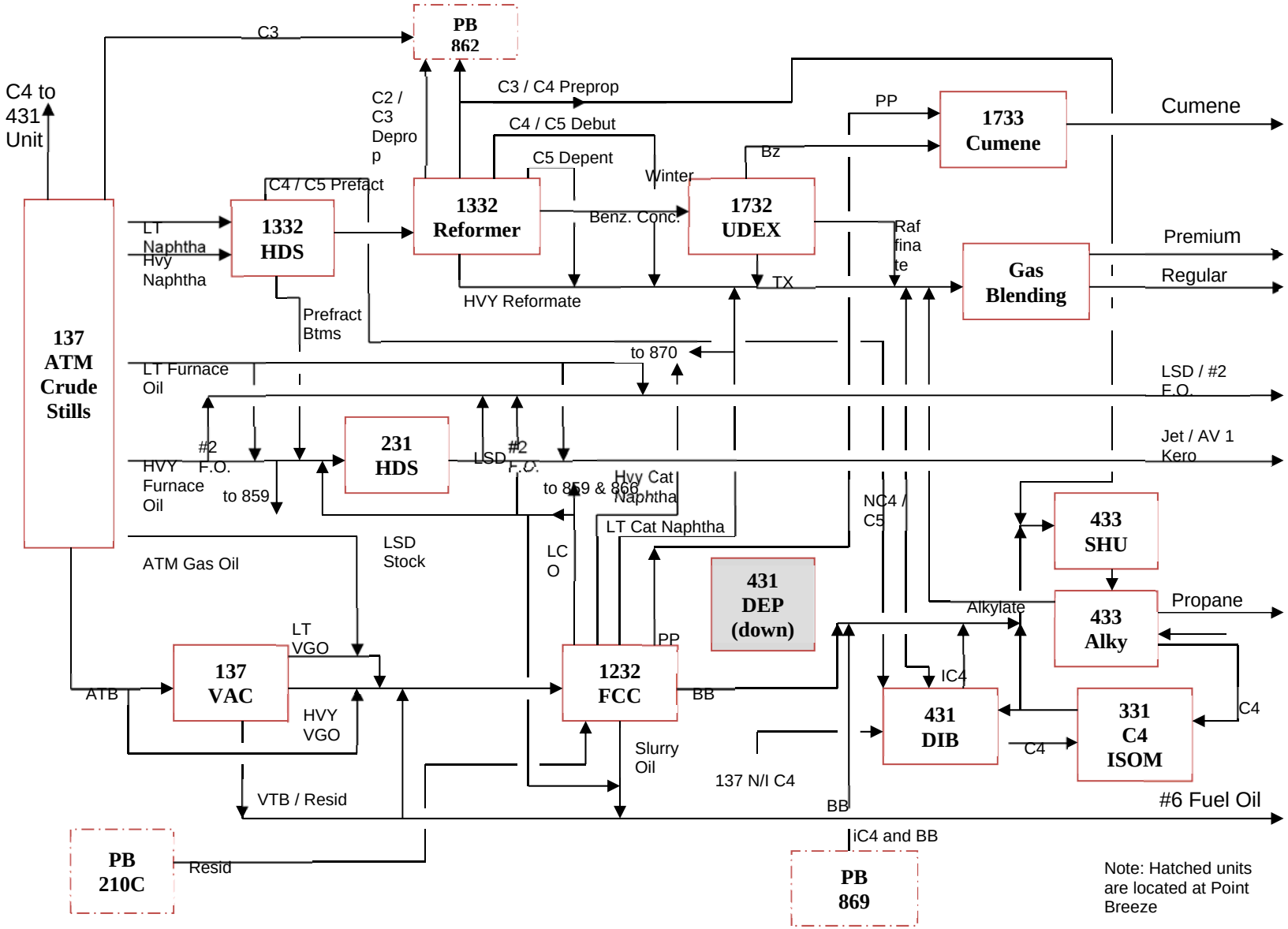
Project Location
City of Philadelphia,
Philadelphia County,
Pennsylvania

213402429
Prepared by GWC on 8/10/2018
Technical Review by JLM on 8/13/2018
Independent Review by DPH on 8/17/2018

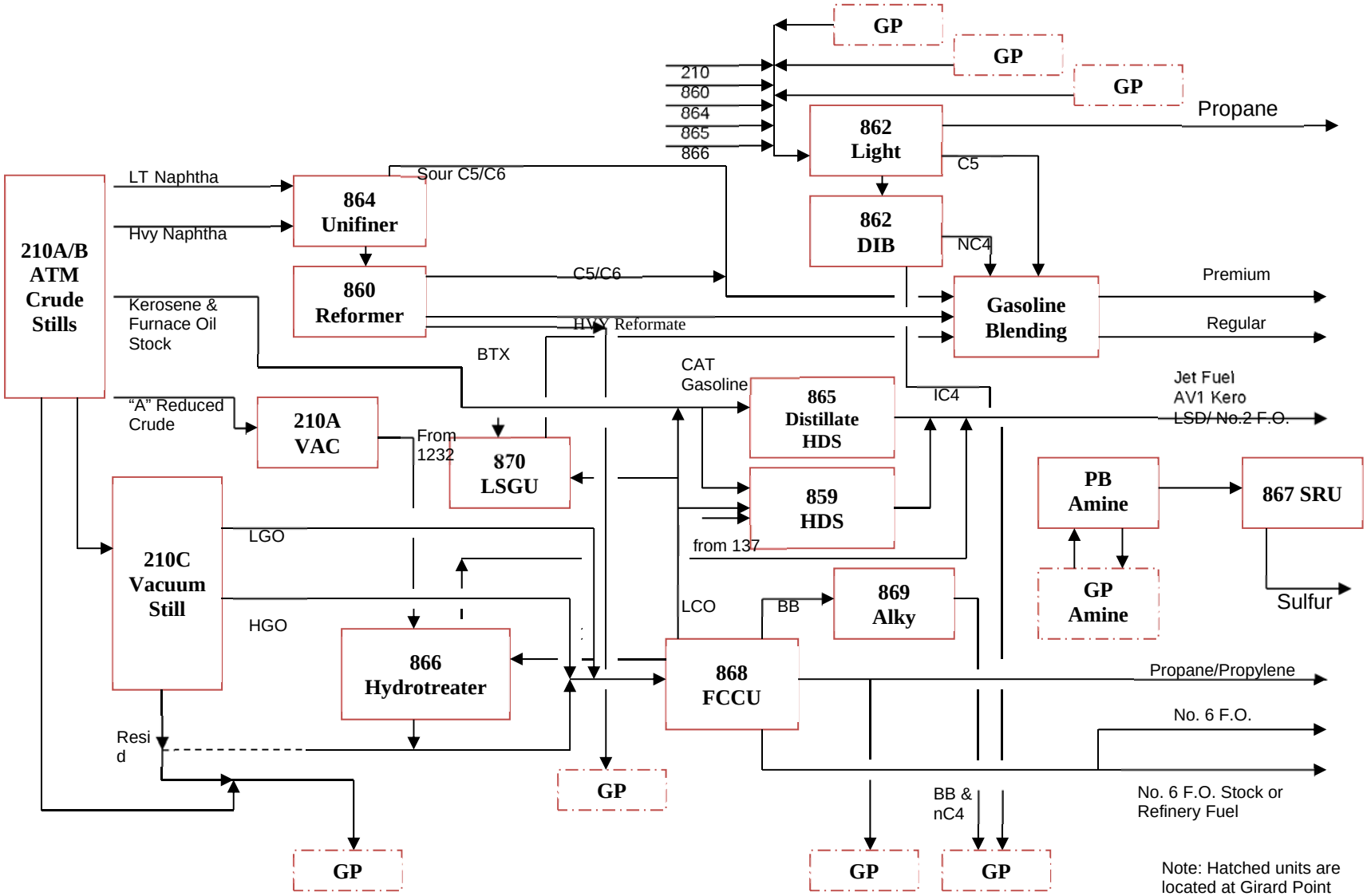
Client/Project
PHILADELPHIA REFINERY OPERATIONS, A SERIES OF EVERGREEN RESOURCES GROUP, LLC
PHILADELPHIA REFINING COMPLEX
3144 PASSYUNK AVENUE, PHILADELPHIA, PA 19145

Figure No.
1

Title
SITE LOCATION MAP



PROCESS FLOW DIAGRAM FOR THE PHILADELPHIA ENERGY SOLUTIONS REFINERY GIRARD POINT



PROCESS FLOW DIAGRAM FOR THE PHILADELPHIA ENERGY SOLUTIONS REFINERY POINT BREEZE

Attachment C
AMS Addendum 1 Method of Compliance Worksheets

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**16-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☒	Group of Sources	Group ID	**Group 01: Boilers**
☐	Single Source	Unit ID	**All Boilers except CU-025 (PB) Warehouse Boiler No. 1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Quarterly Stack Checks**
Monitoring Device Location	**Boilerhouse stack S-125**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx emissions by use of a CEMS so that emissions of NOx do not exceed the new limits outlined in Plan Approval IP16-000264, Conditions 2. and 5. PES shall monitor in accordance with Plan Approval IP16-000264 Conditions 8. and 10.

How will data be reported? **Exceedances will be reported.**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NOx and O2 will be recorded by use of the CEMS per Condition 34. of Plan Approval No. 15271.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. 123 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall have boiler #45 comply with visible emissions requirements.

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 127 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Handheld Instrument**
Monitoring Device Location	**Boilerhouse stack S-126**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor CO and ammonia emissions, and stack CO check using a handheld instrument.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall use a handheld instrument annually to test performance of CO oxidation catalyst. Compliance with CO, PM, and Ammonia emissions will be demonstrated every 5 years by stack test. Operating parameters may be modified through subsequent stack tests.**
Reference Test Method Citation	**Plan Approval No. 14149, Conditions 14 and 15.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records for a period of 5 years of CO checks with a handheld instrument, and emissions of CO and ammonia from the #45 boiler.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

CO emissions from the #45 boiler shall not exceed 3.90 ppmvd @ 7% O2.

Ammonia slip form the boiler shall not exceed 5.0 ppmvd @ 3% O2.

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. 145 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**NOx & O2 CEM**
Monitoring Device Location	**Boilerhouse Stack S-125**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall allow Boiler #45 to comply with TVOP V06-016 Condition D.2.(d)(7).

How will data be reported? **As described in the Condition above.**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**H2S in fuel gas CEM.**
Monitoring Device Location	**Boilerhouse stack S-126.**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S with a CEMS before fuel is burned per Plan Approval 14149 Condition 11.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall comply with Plan Aproval 14149 Conditions 6, limiting H2S content of fuel.

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AIR MANAGEMENT SERVICES

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**NOx and O2 CEM.**
Monitoring Device Location	**Boilerhouse stack S-126.**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx and O2 with a CEMS per Plan Approval 14149 Condition 10.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 63 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Not Applicable**

Monitoring Device Location **Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct tune-ups on #45 boiler as described in the TVOP V06-06 Condition D.3.(b)(12)

CITY OF PHILADELPHIA
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AIR MANAGEMENT SERVICES

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-022 - #45 Boiler**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **AMR VIII Section II Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Handheld Instrument**
Monitoring Device Location	**Boilerhouse stack S-125**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor CO and ammonia emissions, and stack CO check using a handheld instrument.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall use a handheld instrument annually to test performance of CO oxidation catalyst. Compliance with CO, PM, and Ammonia emissions will be demonstrated every 5 years by stack test. Operating parameters may be modified through subsequent stack tests.**
Reference Test Method Citation	**Plan Approval No. 14149, Conditions 14 and 15.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records for a period of 5 years of CO checks with a handheld instrument, and emissions of CO and ammonia from the #45 boiler.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall not allow CO emissions from the #45 boiler to exceed 1% by volume of exhaust gases.

CITY OF PHILADELPHIA
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PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

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FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-025 - Warehouse Boiler No. 1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. 123 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Not Applicable**

Monitoring Device Location **Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall have Boiler No. 1 comply with visible emissions requirements.

CITY OF PHILADELPHIA
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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-025 – Warehouse Boiler No. 1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **AMR III Section I & III Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor fuel usage per AMS Installation Permit IP 11276 Condition 9.

How will data be reported? **On request from AMS.**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of fuel usage per AMS IP 11276 conditions 9. And 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall not allow Boiler No. 1 to burn fuel with sulfur content greater than 15 ppm by weight.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 01 - Boilers**
☒	Single Source	Unit ID	**CU-025 – Warehouse Boiler No. 1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **AMR VIII Section II Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall not allow CO emissions from Boiler No. 1 to exceed 1% by volume of exhaust gases.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-004 – 1232 Heater B-104**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Handheld**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per AMS RACT Plan Approval dated 2/9/16 Condition 4.C.

How will data be reported? **Not Applicable, Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-004 – 1232 Heater B-104**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage**
Monitoring Device Location	**Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor Fuel Input per the RACT Plan Approval Condition 2. D.

How will data be reported? **Not Applicable, Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-005 – 1332 Heater H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable, Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

"PES shall continue quarterly combustion tuning as a case-by-case RACT II determination per 25 PA §129.99(i)(2)(v)"

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-006 – 1332 Heater H-602**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable, Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

"PES shall continue quarterly combustion tuning as a case-by-case RACT II determination per 25 PA §129.99(i)(2)(v)"

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-007 – 1332 Heater H-601**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Not Applicable**

Monitoring Device Location **Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable, Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

"PES shall continue quarterly combustion tuning as a case-by-case RACT II determination per 25 PA §129.99(i)(2)(v)"

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-009 – 1332 Heater H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 127 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Not Applicable**

Monitoring Device Location **Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall equip ULNBs to achieve compliance with the NOx emission limit per Plan Approval 16013 Condition 3.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-009 – 1332 Heater H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Sampling**

Monitoring Device Location **Handheld**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer, per AMS RACT Plan Approval dated 2/9/16, Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**

Reference Test Method Citation **The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-009 – 1332 Heater H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage**
Monitoring Device Location	**Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor fuel input per the RACT Plan Approval Condition 2. D.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-009 – 1332 Heater H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **GP Fuel Gas Mix Drum (V-10001)**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor fuel to the heater per Plan Approval 15253 Condition 29.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **PES source tests shall be consistent with US EPA test methods.**

Reference Test Method Citation **AMS Plan Approval 15253 Condition 27.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of H2S content of fuel per AMS Permit 16013 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-009 – 1332 Heater H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **GP Fuel Gas Mix Drum (V-10001)**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor fuel to the heater per Plan Approval 15253 Condition 29.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **PES source tests shall be consistent with US EPA test methods.**

Reference Test Method Citation **AMS Plan Approval 15253 Condition 27.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of H2S content of fuel per AMS Permit 16013 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-009 – 1332 Heater H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 63 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of tune-ups per AMS Plan Approval 15253 Condition 30.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall submit notifications and compliance reports per AMS Permit 16000142 Conditions 16. and 18 and startup, shutdown, and malfunction reports per AMS Permit 16013 Condition 19.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct a tune-up per AMS Plan Approval 15253 Condition 21.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-010 – 1332 Heater H-401**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **Unit Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx emissions with a CEMS per AMS Permit 16000264 Condition 8.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall use combustion tuning to comply with the RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-011 – 1332 Heater H-400**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **Unit Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx emissions with a CEMS per AMS Permit 16000264 Condition 8.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall use combustion tuning to comply with the RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-012 – 1332 Heater H-3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 63 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of tune-ups per AMS Plan Approval No. 15253 Condition 30.(h)

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct a tune-up per AMS Plan Approval No. 15253 Condition 21.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-013 – 137 Heater F1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEMS**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx emissions via CEMS per the RACT Plan Approval Condition 4. B.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5. and AMS Permit 16000264 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall use combustion tuning to comply with the RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-013 – 137 Heater F1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage**
Monitoring Device Location	**Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S fuel content daily per the RACT Plan Approval Condition 2. D.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5. and AMS Permit 16000264 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-014 – 137 Heater F2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEMS**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx emissions via CEMS per AMS Plan Approval No. 16000264 Condition 8.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Conditions 5. and AMS Permit 16000264 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall use combustion tuning to comply with the RACT Plan Approval Condition 3. B.

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SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-014 – 137 Heater F2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage**
Monitoring Device Location	**Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor fuel input daily per the RACT Plan Approval Condition 2. D.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Conditions 5. and AMS Permit 16000264 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s). **Not Applicable**

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SECTION A. APPLICABLE REQUIREMENT

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Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-015 – 137 Heater F3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall use combustion tuning to comply with the RACT Plan Approval Condition 3. D.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-016 – 231 Heater B-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per Plan Approval 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-016 – 231 Heater B-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☒	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage, Stack Test, Sampling**
Monitoring Device Location	**Fuel Inlet, ---, Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor the MMBTU heat input per Plan Approval 12195 Condition 21.
PES shall monitor VOC emissions per AMS Permit 16000264 Condition 10.
PES shall determine compliance with a portable NOx analyzer per AMS RACT Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Submit quarterly reports for the CEMS per AMS Plan Approval 12195 Condition 25.

Reporting Start Date **Currently Reporting**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per Plan Approval 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-016 – 231 Heater B-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall only burn Refinery Fuel gas to the standards described in Plan Approval 12195 Condition 7.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-017 – 433 Heater H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 123 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☒ Testing ☐ Reporting
☒ Record Keeping ☒ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **Heater Outlet**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall comply with NOx and O2 CEMS requirements per Plan Approval 06050A Condition 14.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Filterable PM measured via Method 5 and Condensable PM measured via Method 202**

Reference Test Method Citation **AMS Permit 06050A**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall record NOx and O2 emissions per Plan Approval 06050A Condition 14.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall comply with visible emissions standards per AMS Plan Approval 06050A Condition 6.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-017 – 433 Heater H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS RACT Plan Approval Condition 3. D.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-101 – 210 Heater H-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☒ Testing ☐ Reporting
☒ Record Keeping ☒ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Sampling**

Monitoring Device Location **Handheld**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**

Reference Test Method Citation **The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per Plan Approval 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-101 – 210 Heater H-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Fuel Usage**

Monitoring Device Location **Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor VOC compliance per AMS Permit No. 16000264 Condition 10.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS Plan Approval IP16-000264 dated 12/30/16 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

CITY OF PHILADELPHIA
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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-101 – 210 Heater H-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 PA 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **----**

Monitoring Device Location **Heater Inlet**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor the MMBTU heat input per Plan Approval No. 12195 Condition 21.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall record the MMBTU heat input per Plan Approval No. 12195 Condition 21.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall not burn any fuel as described in AMS Plan Approval No. 12195 Condition 7.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-101 – 210 Heater H-101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 PA 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Fuel Usage**

Monitoring Device Location **Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor compliance with VOC emission limits per AMS Permit 16000264 Condition 10.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall record the MMBTU heat input per Plan Approval No. 12195 Condition 21.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-102 – 210 Heater H-201**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEMS**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor NOx compliance per AMS RACT Plan Approval Condition 4. B.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per Plan Approval 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-102 – 210 Heater H-201**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Stack Test**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor VOC compliance per AMS Permit 16000264 Condition 10.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS Plan Approval IP16-000264 dated 12/30/16 Condition 11.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-102 – 210 Heater H-201**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 PA 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEMS**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

CU-101 shall be equipped with a NOx and O2 CEMS per Plan Approval No. 12195 Condition 14.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall report excess emissions per AMS Plan Approval No. 12195 Condition 26.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-102 – 210 Heater H-201**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 PA 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**CEMS**
Monitoring Device Location	**PB Fuel Gas Mix Drum (1V148)**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor the H2S content of Fuel Gas per AMS Plan Approval No. 12195 Condition 18.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall report excess emissions per AMS Plan Approval No. 12195 Condition 26.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall not burn any fuel as described in AMS Plan Approval No. 12195 Condition 7.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-102 – 210 Heater H-201**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 PA 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Fuel Usage**

Monitoring Device Location **Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor the MMBTU heat input per Plan Approval No. 12195 Condition 21.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall report excess emissions per AMS Plan Approval No. 12195 Condition 26.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-102 – 210 Heater H-201**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 PA 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Fuel Usage**
Monitoring Device Location	**Heater Fuel Line**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor compliance with VOC emission limits per AMS Permit 16000264 Condition 10.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall report excess emissions per AMS Plan Approval No. 12195 Condition 26.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-103 – 210 Heater 13H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES will determine compliance with a portable NOx analyzer per RACT Plan Approval Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-109 – 860 Heater 2H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance using a portable NOx analyzer per RACT Plan Approval Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-110 – 860 Heater 2H-3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval Condition 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-111 – 860 Heater 2H-4**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-112 – 860 Heater 2H-5**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

CITY OF PHILADELPHIA
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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-114 – 860 Heater 2H-7**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

Monitoring Device Type (stack test, CEM, etc.)

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-115 – 860 Heater 2H-8**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable, Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

"PES shall continue quarterly combustion tuning as a case-by-case RACT II determination per 25 PA §129.99(i)(2)(v)"

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-118 – 864 Heater PH-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-118 – 864 Heater PH-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**VOC emissions shall be based on stack tests per AMS Plan Approval No. 15253 Condition 27.**
Reference Test Method Citation	**U.S.E.P.A. Reference Method 25A shall be used for VOC.** **Performance Specification 7, Method 11.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-123 – 864 Heater PH-7**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**VOC emissions shall be based on stack tests per AMS Plan Approval No. 15253 Condition 27.**
Reference Test Method Citation	**U.S.E.P.A. Reference Method 25A shall be used for VOC. Performance Specification 7, Method 11.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-124 – 864 Heater PH-11**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-124 – 864 Heater PH-11**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**VOC emissions shall be based on stack tests per AMS Plan Approval No. 15253 Condition 27.**
Reference Test Method Citation	**U.S.E.P.A. Reference Method 25A shall be used for VOC.** **Performance Specification 7, Method 11.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-125 – 864 Heater PH-12**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-125 – 864 Heater PH-12**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**VOC emissions shall be based on stack tests per AMS Plan Approval No. 15253 Condition 27.**
Reference Test Method Citation	**U.S.E.P.A. Reference Method 25A shall be used for VOC. Performance Specification 7, Method 11.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-126 – 865 Heater 11H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS Plan Approval No. 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-127 – 865 Heater 11H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS Plan Approval No. 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-127 – 865 Heater 11H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Stack Test**
Monitoring Device Location	**Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

VOC emissions are calculated on a monthly basis on heat input and emission factors based on AMS-approved stack tests.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-127 – 865 Heater 11H-2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **PB Fuel Gas Mix Drum (1V148)**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in the fuel gas being burned in 865 Heater 11H-2 per AMS plan approval 12195 Condition 18.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

CITY OF PHILADELPHIA
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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-128 – 866 Heater 12H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS Plan Approval No. 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-128 – 866 Heater 12H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Stack Test**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

VOC emissions are calculated on a monthly basis on heat input and emission factors based on AMS-approved stack tests.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-128 – 866 Heater 12H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **PB Fuel gas Mix Drum (1V148)**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in the fuel gas being burned in 866 Heater 12H-1 per AMS plan approval 12195 Condition 18.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-129 – 868 Heater 8H101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS Plan Approval No. 12195 Condition 11.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-129 – 868 Heater 8H101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **PB Fuel gas Mix Drum (1V148)**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in the fuel gas being burned in 868 Heater 8H101 per AMS plan approval 12195 Condition 18.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-129 – 868 Heater 8H101**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Stack Test**

Monitoring Device Location **Heater Stack**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

VOC emissions shall be monitored on a monthly basis on heat input and emission factors based on AMS-approved stack tests.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-137 – 870 Heater H1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS RACT Plan Approval Condition 3. D.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-137 – 870 Heater H1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☒	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **H2S CEM at Unit 870 Heaters**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **PES shall perform tests to demonstrate compliance with VOC emission limits per AMS Plan Approval No. 15253 Condition 27.**
PES shall conduct a stack test for CO every five (5) years per AMS Plan Approval 15271 Condition 23.(a)(ii).

Reference Test Method Citation **USEPA Reference Method 25A for VOC.**
25 Pa. 139 Source Testing Manual.

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall submit CEM reports per AMS Plan Approval No. 15253 Condition 31.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-137 – 870 Heater H1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☒ Testing ☒ Reporting
☒ Record Keeping ☒ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**CEM**
Monitoring Device Location	**H2S CEM at Unit 870 Heaters**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29. This CEMS shall include an oxygen monitor per AMS Plan Approval No. 15271 Condition 28.

How will data be reported? **Exceedances will be reported.**

SECTION C. TESTING

Reference Test Method Description	**PES shall evaluate H2S content of fuel gas per AMS Plan Approval No. 15253 Condition 29(c).** **PES shall conduct a stack test for CO every five (5) years per AMS Plan Approval 15271 Condition 23.(a)(ii).**
Reference Test Method Citation	**Performance Specification 7, Method 11.** **25 Pa. 139 Source Testing Manual.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall report H2S fuel content exceedances per AMS Plan Approval No. 15271 Condition 39.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall only burn natural gas or refinery gas per AMS Plan Approval No. 15253 Condition 16.

PES shall not burn any fuel gas exceeding H2S standards per AMS Plan Approval No. 15271 Conditions 13. and 14.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-137 – 870 Heater H1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 63 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of tune-ups per AMS Plan Approval No. 15253 Condition 30.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct a tune-up on the heater per AMS Plan Approval No. 15253 Condition 21.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-138 – 870 Heater H2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS RACT Plan Approval Condition 3. D.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-138 – 870 Heater H2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☒	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**CEM**
Monitoring Device Location	**H2S CEM at Unit 870 Heaters**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall perform tests to demonstrate compliance with VOC emission limits per AMS Plan Approval No. 15253 Condition 27.** **PES shall conduct a stack test for CO every five (5) years per AMS Plan Approval 15271 Condition 23.(a)(ii).**
Reference Test Method Citation	**USEPA Reference Method 25A for VOC.** **25 Pa. 139 Source Testing Manual**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall submit CEM reports per AMS Plan Approval 15253 Condition 31.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Not Applicable

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-138 – 870 Heater H2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☒ Testing ☒ Reporting
☒ Record Keeping ☒ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **H2S CEM at Unit 870 Heaters**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29. This CEMS shall include an oxygen monitor per AMS Plan Approval No. 15271 Condition 28.

How will data be reported? **Exceedances will be reported.**

SECTION C. TESTING

Reference Test Method Description **PES shall evaluate H2S content of fuel gas per AMS Plan Approval No. 15253 Condition 29(c).**
PES shall conduct a stack test for CO every five (5) years per AMS Plan Approval 15271 Condition 23.(a)(ii).

Reference Test Method Citation **Performance Specification 7, Method 11.**
25 Pa. 139 Source Testing Manual.

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall report H2S fuel content exceedances per AMS Plan Approval No. 15271 Condition 39.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall only burn natural gas or refinery gas per AMS Plan Approval No. 15253 Condition 16.
PES shall not burn any fuel gas exceeding H2S standards per AMS Plan Approval No. 15271 Conditions 13. and 14.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-138 – 870 Heater H2**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 63 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of tune-ups per AMS Plan Approval No. 15253 Condition 30.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct a tune-up on the heater per AMS Plan Approval No. 15253 Condition 21.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-139 – 859 Heater 1H-1**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Sampling**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall determine compliance with a portable NOx analyzer per RACT Plan Approval 4.C.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**PES shall conduct a stack every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations.**
Reference Test Method Citation	**The test shall be in accordance with Chapter 139, Subchapter A.**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records according to the AMS RACT Plan Approval dated 2/9/16 Condition 5.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct an annual tune-up per AMS RACT Plan Approval Condition 3. B.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-140 – 870 Heater H-3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 127 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Not Applicable**

Monitoring Device Location **Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall install ULNBs to comply with NOx emission limits per AMS Plan Approval 15253 Condition 17.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-140 – 870 Heater H3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 139 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☒ Testing ☐ Reporting
☐ Record Keeping ☐ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **CEM**

Monitoring Device Location **H2S CEM at Unit 870 Heaters**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor H2S content in fuel gas per AMS Plan Approval No. 15253 Condition 29.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description

PES shall perform tests to demonstrate compliance with NOx, CO, and VOC emission limits per AMS Plan Approval No. 15253 Condition 27.

PES shall conduct an initial stack test within 60 days of achieving maximum capacity, but no longer than 180 days after start-up to determine compliance with emission limits

Reference Test Method Citation

USEPA Reference Method 7E for NOx.

USEPA Reference Method 10 for CO.

USEPA Reference Method 25A for VOC.

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES shall submit CEM reports per AMS Plan Approval 15253 Condition 31.

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD
Describe any work practice standard(s). **Not Applicable**

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SECTION A. APPLICABLE REQUIREMENT

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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-140 – 870 Heater H-3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 127 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall install ULNBs to comply with NOx emission limits per AMS Plan Approval 15253 Condition 17.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 02 - Heaters**
☒	Single Source	Unit ID	**CU-140 – 870 Heater H-3**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 63 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of tune-ups per AMS Plan Approval No 15253 Condition 30 (h).

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall conduct and annual tune-up per AMS Plan Approval No. 15253 Condition 21.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 27 - Emergency Generators and Fire Pumps**
☒	Single Source	Unit ID	**EM-002 (GP) – Flood Control RICE at GP 2nd and J**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code §127**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) **Not Applicable**

Monitoring Device Location **Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description **Not Applicable**

Reference Test Method Citation **Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of NOx emission calculations per AMS IP18-000373 Condition 10(a).

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall restrict operation of EM-002 (GP) per AMS IP18-000373 Condition 9.(d).

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 27 - Emergency Generators and Fire Pumps**
☒	Single Source	Unit ID	**EM-003 (GP) – Flood Control RICE at GP 2-separator**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code §127**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall keep records of NOx emission calculations per AMS IP18-000374 Condition 10(a).

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall restrict operation of EM-003 (GP) per AMS IP18-000374 Condition 9.(d).

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☒	Group of Sources	Group ID	Group 03 - Flares
☐	Single Source	Unit ID	P-117, P-118, P-119, P-642, P-643, P-646, CD-104
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 60 Subpart Ja (§60.100a - §60.109a)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	CEMS/CPMS
Monitoring Device Location	Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Conditions 14-20

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Conditions 14-20

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Condition 13.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☒	Group of Sources	Group ID	Group 03 - Flares, Except for CD-104 (LPG Flare)
☐	Single Source	Unit ID	P-117, P-118, P-119, P-642, P-643, P-646
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 63 Subpart CC (§63.670 - §63.671)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	CEMS/CPMS
Monitoring Device Location	Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Conditions 27-30, 38-42.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Conditions 27-30, 38-42.

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Condition 36.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Condition 37.

Reporting Start Date Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Condition 37.

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Conditions 21-26, 31-35.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☒	Group of Sources	Group ID	Group 03 - Flares
☐	Single Source	Unit ID	CD-104 – LPG Flare
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 60 Subpart Ja (§60.100a - §60.109a)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	CPMS
Monitoring Device Location	CD-104 - LPG flare is currently exempt from monitoring for sulfur in the fuel gases according to the LPG Flare Alternative Monitoring Procedure (AMP) EPA approval from 15 April 2010. Refer to the previously described letter, the LPG Flare Management Plan, and AMS Plan Approval #IP18-000260 & IP18-000263, Conditions 15, 16, 17.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Condition 18 (concerning flare flow monitoring).

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	PES will continue to sample and analyze propane products produced in the Point Breeze Propane Terminal for hydrogen sulfide content on a daily basis, at a minimum.
Reference Test Method Citation	LPG Flare Alternative Monitoring Procedure (AMP) approval letter from 15 April 2010.

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

PES will report to EPA any analysis showing a hydrogen sulfide content of 20 ppm or greater along with a description of the investigation conducted by PES to determine the cause of the high sulfur condition and the investigation results. This report is situational.

Reporting Start Date	2010, Citation: LPG Flare Alternative Monitoring Procedure (AMP) approval letter from 15 April 2010.

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Refer to AMS Plan Approval #IP18-000260 & IP18-000263, Condition 13.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 03 – Flares
☒	Single Source	Unit ID	P-643 (PB) (CD-112) – Flare, South Flare in South Yard
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 60 Subpart Ja (§100a - §109a)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☒	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Not Applicable
Monitoring Device Location	Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.
Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.
Refer to AMS Plan Approval No. 15271, Condition 35(c-f).

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.
Refer to AMS Plan Approval No. 15271, Condition 39, 40.

Reporting Start Date Refer to AMS Plan Approval No. 15271, Condition 39, 40.

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).
Refer to AMS Plan Approval No. 15271, Condition 14, 15(a), 15(i), 15(j), 15(k).

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 03 - Flares
☒	Single Source	Unit ID	P-643 (PB) (CD-112) – Flare, South Flare in South Yard
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 63 Subpart CC, §63.643(a)(1)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Not Applicable
Monitoring Device Location	Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.
Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.
Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.
Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).
Refer to AMS Plan Approval No. 15271, Condition 15(c).

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 04 – Loading Facilities and Control Equipment**
☒	Single Source	Unit ID	**P-637 (GP) - Butane Railcar Loading/Unloading**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 127.12b**
AMS Installation Permit No.: 14045

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**None**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Volatile Organic Compounds (VOC) emissions from the railcar butane loading/unloading operation shall be less than 2.7 tons on rolling 12-month period [Plan Approval Exemption]

The fugitive emission shall be monitored and recorded on quarterly basis in accordance with the LDAR program for all valves, flanges, and connectors in VOC service.

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

The Permittee shall monitor and keep records of VOC emissions on monthly and rolling 12-month basis. VOC emission shall be based on number of loading/unloading operations per day, number of venting to atmosphere, and the following emission factors or other AMS approved factors.
a) Stinger: 0.008 lb/hose (all loading/unloading events)
h) Vapor hose: 0.1 lb/hose (only when opening hose to atmosphere)
c) Product hose: 0.2 lb/hose (only when opening hose to atmosphere)

The fugitive emission shall be monitored and recorded on quarterly basis in accordance with the LDAR program for all valves, flanges, and connectors in VOC service.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

The railcar loading/unloading stations shall be installed, operated and maintained in accordance with both the manufacturer's specification and the specifications in the application (as approved herein).

The Permittee shall only process butane/isobutane/n-butane/butylene streams at railcar loading/unloading stations.

The loading/unloading hoses and pipes shall be vented to the 1231/1232 flare and depressurized to 5-7 psig prior to disconnecting from the station.

All connections shall be equipped with fittings which shall be vapor tight and will automatically and immediately close upon disconnection so as to prevent organic material emissions

No person shall cause, suffer. allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps. compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V Sec XIII]
(a) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the AMS; or
(b) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 04 – Loading Facilities and Control Equipment**
☒	Single Source	Unit ID	**P-644 (GP) – Two (2) Crude Railcar Unloading Facilities**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **Air Management Regulations (AMR) V**
AMS Installation Permit No.: 14045

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐ Monitoring ☐ Testing ☐ Reporting

☐ Record Keeping ☒ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**None**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall comply with organic materials handling requirements per AMS Installation Permit 13020B Condition 3.

PES shall comply with malodor requirements per AMS Installation Permit 13020B Condition 7.

PES shall incorporate fugitive components into its LDAR program per AMS Installation Permit 13020B Condition 8.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 04 – Loading Facilities and Control Equipment**
☒	Single Source	Unit ID	**P-637 (GP) – Two (2) Crude Railcar Unloading Facilities**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129.58**
Global Consent Decree issued as part of Civil Action No. 05-02866
AMS Installation Permit No.: 14045

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☒	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**None**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

PES shall monitor fugitive VOC emissions from this source per AMS Installation Permit 13020B Condition 9.

How will data be reported? **Refer to Section E below**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING
Describe what parameters will be recorded and the frequency of recording. **Not Applicable**
SECTION E. REPORTING
Describe what is to be reported and the frequency of reporting. **PES shall submit semi-annual reports per AMS Installation Permit 13020B Condition 11.**
Reporting Start Date **2015**
SECTION F. WORK PRACTICE STANDARD
Describe any work practice standard(s). **PES shall incorporate fugitive components into its LDAR program per AMS Installation Permit 13020B Condition 8.**

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☒	Group of Sources	Group ID	Group 05 - Sulfur Recovery Units
☐	Single Source	Unit ID	P-659 (PB), P-660 (PB), CD-108, CD-109, & CD-114
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 60 Subpart UUU (§63.1560 - §63.1579)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☐ Testing ☐ Reporting
☐ Record Keeping ☐ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Refer to TVOP No. V06-016, Condition D.6.(d)(1)
Monitoring Device Location	Refer to TVOP No. V06-016, Condition D.6.(d)(1)

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Emissions of SO2 shall not exceed a concentration of 250 ppm SO2 by volume on a dry basis at zero percent excess air on a rolling 12-hour average; or operate the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis), except during startup or shutdown conditions.

How will data be reported? Refer to TVOP No. V06-016, Section D.6.(f)

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

During periods of startup and shutdown, PES shall comply with 63.1568(a)(4)(i) by meeting emission limitations in 63.1568(a)(1)(i); comply with 63.1568(a)(4)(ii) by sending any shutdown purge gases to the flare; or comply with 63.1568(4)(iii) by sending any startup or shutdown purge gases to the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis).

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC**
☒	Single Source	Unit ID	**P-541 (PB) - Tank #178 EFR**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **40 CFR 60.115(b), 60.116(b), 60.113(b)**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☒	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**None**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Emissions increases from the project shall not exceed the following for Tank# 178:

VOC = 9.28 tpy*
VOC = 2.12 lb/hr

Annual limit is a 12 month rolling average

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	PES shall follow testing procedures specified in 40 CFR 60.113b. If a failure is detected, PES shall repair the items or empty and remove the storage vessel from service within 45 days. If this cannot be done in 45 days, AMS shall be notified and a 30-day extension may be requested from AMS. PES shall assure that either the equipment is repaired or the tank is emptied within the 30 additional days.
Reference Test Method Citation	**40 CFR 60.113b**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall on a monthly basis keep records of the emissions from all new or reactivated sources covered by this plan approval to demonstrate compliance with the emission limits listed in Table 1a. of Plan Approval No.15271

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

For the storage tank, PES shall follow reporting procedures specified in 40 CFR 60.115(b) and 116(b).

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

PES shall not store VOC liquids that have a Reid vapor pressure greater than 10 psia in the storage tank.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 17 – Marine Loading Equipment**
☒	Single Source	Unit ID	**P-130 (GP) - Barge Loading – Girard Point Wharf**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**Not Applicable**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

NA

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	**Group 17 – Marine Loading Equipment**
☒	Single Source	Unit ID	**P-636 (PB) - Marine Barge Loading**
☐	Alternative Operating Scenario	Scenario Name	**Not Applicable**

Citation No. **25 Pa. Code 129 RACT Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	**None**
Monitoring Device Location	**Not Applicable**

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

VOC Emissions from Point Breeze Loading shall not exceed 25.99 tons per rolling 12-month period

How will data be reported? **Not Applicable**

SECTION C. TESTING

Reference Test Method Description	**Not Applicable**
Reference Test Method Citation	**Not Applicable**

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date **Not Applicable**

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4psi or greater.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 18 – Fluidized Catalytic Cracking Units
☒	Single Source	Unit ID	P-661 (PB) - Fluid Catalytic Cracking Regenerator - Unit 868
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 63 Subpart UUU

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒ Monitoring ☒ Testing ☐ Reporting

☒ Record Keeping ☒ Work Practice Standard

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	CEMS
Monitoring Device Location	Refer to AMS Plan Approval No. IP16-000225

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

The Permittee shall install instrument to continuously monitor O2 level in the regenerator exhaust for correcting the data for excess air. [AMS Plan Approval No. IP16-000225 Condition 18]

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	The Permittee shall conduct a periodic performance test for PM or Ni for each catalytic cracking unit at least once every 5 years according to the requirements in Table 4 of 40 CFR Subpart UUU. The Permittee must conduct the first periodic performance test no later than August 1, 2017 or within 150 days of startup of a new unit.
Reference Test Method Citation	40 CFR 63.1571(a)(5)

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

The Permittee shall keep continuous emission records for O2 level in the regenerator exhaust. [AMS Plan Approval No. IP16-000225 Condition 22]

The Permittee shall demonstrate continuous compliance by operating and maintaining records to document conformance with the procedures in the OMMP [40 CFR 63.1564(c)(2)].

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

8. The Permittee shall maintain the hourly average oxygen (O2) concentration in the exhaust gas from the 868 FCCU catalyst regenerator at or above 1 volume percent (dry basis) during start-up, shut-down, and hot standby.

9. The 868 FCCU CO emissions shall be limited to 100 ppmvd at 0% O2 on a 365-day rolling average basis.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 18 – Fluidized Catalytic Cracking Units
☒	Single Source	Unit ID	P-661 (PB) - Fluid Catalytic Cracking Regenerator – Unit 868
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. AMS Installation Permit IP-16000225

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Not Applicable
Monitoring Device Location	Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	CTM 027 or ASTM Method D6348-03
Reference Test Method Citation	Refer to AMS Plan Approval No. IP16-000225, Condition 14

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

PES shall monitor and record daily ammonia usage, and continuously monitor and record the ammonia injection rate to ensure compliance with Condition 2.

PES shall monitor and keep records of ammonia emissions on a monthly basis to demonstrate compliance with Condition 3. The compliance demonstration shall be based on AMS-approved stack tests.

[AMS Plan Approval No. IP16-000225, Condition 15]

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

Refer to AMS Plan Approval No. IP16-000225, Conditions 2, 3, 4, 5.

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 18 – Fluidized Catalytic Cracking Units
☒	Single Source	Unit ID	P-661 (PB) - Fluid Catalytic Cracking Regenerator – Unit 868
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. AMR II, Section VII

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Not Applicable
Monitoring Device Location	Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

At all times, Particulate Matter emissions from the 868 FCCU shall not exceed 40 pounds per hour. [AMR II, Section VII, AMS Plan Approval No. IP16-000225, Condition 6]

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SECTION A. APPLICABLE REQUIREMENT

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Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 18 – Fluidized Catalytic Cracking Units
☒	Single Source	Unit ID	P-661 (PB) - Fluid Catalytic Cracking Regenerator – Unit 868
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 25. PA Code 127.12b Plan Approval Terms and Conditions

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Not Applicable
Monitoring Device Location	Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.
Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	Not Applicable
Reference Test Method Citation	Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.
Refer to AMS Plan Approval IP16-000225, Conditions 16, 23, 24, 25, 26

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.
Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).
Refer to AMS Plan Approval IP16-000225, Condition 7.

CITY OF PHILADELPHIA
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PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 18 – Fluidized Catalytic Cracking Units
☒	Single Source	Unit ID	P-120 (GP) - FCCU, Unit 1232 Regenerator
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 25. PA Code 129 RACT Requirements

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) Not Applicable

Monitoring Device Location Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.
Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description Not Applicable

Reference Test Method Citation Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.
Not Applicable

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.
Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).
Refer to AMS RACT Plan Approval, dated 9 February 2016, Conditions 2(F) and 2(G)

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Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 18 – Fluidized Catalytic Cracking Units
☒	Single Source	Unit ID	P-120 (GP) - FCCU, Unit 1232 Regenerator
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 40 CFR 63 Subpart UUU

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☒	Testing	☒	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Not Applicable
Monitoring Device Location	Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

Not Applicable

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description	The Permittee shall conduct a periodic performance test for PM or Ni for each catalytic cracking unit at least once every 5 years according to the requirements in Table 4 of 40 CFR Subpart UUU. The Permittee must conduct the first periodic performance test no later than August 1, 2017 or within 150 days of startup of a new unit.
Reference Test Method Citation	40 CFR 63.1571(a)(5)

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

The Permittee shall demonstrate continuous compliance by operating and maintaining records to document conformance with the procedures in the OMMP [40 CFR 63.1564(c)(2)].

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

1. For CO and inorganic HAP emissions during startup, shutdown and hot standby, the following control device parameters will be used to comply with the inorganic HAP work practice standards specified in 40 CFR Parts 63.1565(a)(5):

a. CO emissions from the catalyst regenerator vent or CO Boiler must not exceed 500 ppmv (dry basis); or

b. Maintain the oxygen (O2) concentration in the exhaust gas from the catalyst regenerator at or above 1 volume percent (dry basis).

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ADDENDUM 1 - METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	**61-1689574**
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**
Plant ID	**01501**
Plant Name	**Philadelphia Energy Solutions Refining and Marketing LLC**

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 20 – Alkylation Unit
☒	Single Source	Unit ID	P-662 (PB) - Alkylation Unit 869
☐	Alternative Operating Scenario	Scenario Name	Not Applicable

Citation No. 25 PA Code §§127.511, 135.21, 135.5 & 139

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.) Flow Monitoring

Monitoring Device Location Not Applicable

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

The Permittee shall monitor daily and rolling 12-month 869 Alkylation plant olefin feed rate calculated monthly.

How will data be reported? Not Applicable

SECTION C. TESTING

Reference Test Method Description Not Applicable

Reference Test Method Citation Not Applicable

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

For P662, Unite 869, Daily Olefin feed rate and rolling 12-month feed rate calculated monthly to demonstrate compliance with Group 20, Section D.23.(b)(3) [AMS Plan Approval 03163, dated 2/5/04]

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Not Applicable

Reporting Start Date Not Applicable

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

For P662, Unit 869 Alkylation plant Olefin feed shall not exceed 8,500 barrels per stream day and 2,737,500 barrels in any 12-month rolling period [AMS Plan Approval IP17-000086 Dated 17 October 2017]

Attachment D
CAM Non-Applicability Determinations and AMS Addendum 3 CAM Applicability Worksheets

Philadelphia Energy Solutions Refining and Marketing LLC
Title V Operating Permit Renewal Application, Attachment D
January 2019

KEY

a =	Not subject to CAM applicability per 40 CFR 64.2(a)(1) Emission unit is not subject to an emission limitation or standard for the applicable regulated air pollutant (or a surrogate thereof).
b =	Not subject to CAM applicability per 40 CFR 64.2(a)(2) Emissions unit does not use a control device to achieve compliance with any such emission limitation or standard.
c =	Not subject to CAM applicability per 40 CFR 64.2(a)(3) Emission unit potential pre-control emissions < major source thresholds
d =	Exempt from CAM applicability per 40 CFR 64.2(b)(i) Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) proposed after November 15, 1990
e =	Exempt from CAM applicability per 40 CFR 64.2(b)(i) Emission unit is subject to New Source Performance Standards (NSPS) proposed after November 15, 1990
f =	Exempt from CAM applicability per 40 CFR 64.2(b)(vi) Emission unit is subject to an emission limitation or standard for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1
g =	CAM applies to an emission source and its associated control device, not solely to a control device. Thus, if an emission unit is subject to CAM and routes its emissions to this control device it has been noted in the CAM applicability for the emission unit, not the control device.
h =	CAM applies to an emission source and its associated control device, not solely to an emission point stack. Thus, if an emission unit is subject to CAM and routes its emissions to this emission stack, it has been noted in the CAM applicability for the emission unit, not the emission stack.

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
Group 01 Boilers			
CU-018 (GP)	#37 Boiler	NO	b
CU-020 (GP)	#39 Boiler	NO	b
CU-021 (GP)	#40 Boiler	NO	b
CU-022 (GP)	#45 Boiler	NO	f
Group 02 Process Heaters			
CU-004 (GP)	Unit 1232 B-104 Heater	NO	b
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	NO	b
CU-006 (GP)	Unit 1332 H-602 Heater	NO	b
CU-007 (GP)	Unit 1332 H-601 Heater	NO	b
CU-008 (GP)	Unit 1332 H-600 Heater	NO	b
CU-009 (GP)	Unit 1332 H-2 Heater	NO	b
CU-010 (GP)	Unit 1332 H-401 Heater	NO	f
CU-011 (GP)	Unit 1332 H-400 Heater	NO	f
CU-012 (GP)	Unit 1332 H-3 Heater	NO	b
CU-013 (GP)	Unit 137 F-1 Heater	NO	b
CU-014 (GP)	Unit 137 F-2 Heater	NO	b
CU-015 (GP)	Unit 137 F-3 Heater	NO	b
CU-016 (GP)	Unit 231 B-101 Heater	NO	b
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	NO	b
CU-101 (PB)	H-101 Heater	NO	b
CU-102 (PB)	H-201 Heater	NO	b
CU-103 (PB)	13H-1 Heater	NO	b
CU-108 (PB)	2H-1 Heater	NO	b
CU-109 (PB)	2H-2 Heater	NO	b
CU-110 (PB)	2H-3 Heater	NO	b
CU-111 (PB)	2H-4 Heater	NO	b
CU-112 (PB)	2H-5 Heater	NO	b
CU-113 (PB)	2H-6 Heater	NO	b
CU-114 (PB)	2H-7 Heater	NO	b
CU-115 (PB)	2H-8 Heater	NO	b
CU-118 (PB)	PH-1 Heater	NO	b
CU-123 (PB)	PH-7 Heater	NO	b
CU-124 (PB)	PH-11 Heater	NO	b

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
CU-125 (PB)	PH-12 Heater	NO	b
CU-126 (PB)	11H-1 Heater	NO	b
CU-127 (PB)	11H-2 Heater	NO	b
CU-128 (PB)	12H-1 Heater	NO	b
CU-129 (PB)	8H-101 Heater Tulsa Heater Inc Refinery Fuel Gas Heater	NO	b
		NO	b
CU-137 (PB)	H1 Heater – Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	NO	b
		NO	b
CU-138 (PB)	H2 Heater – Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	NO	b
		NO	b
CU-139	Unit 859 1H-1 Heater	NO	b
		NO	b
CU-140 (PB)	H3 Heater - Unit 870, Tier II Low Sulfur Hydrodesulfurization Plant	NO	b
		NO	b
Group 03 Flares			
P-117 (GP) - CD012	1231 Flare – Unit 1232	NO	g
P-118 (GP) - CD013	1232 Flare – Unit 1232	NO	g
P-119 (GP) - CD014	433 Flare	NO	g
P-642 (PB) - CD111	Flare, North Flare in South Yard	NO	g
P-643 (PB) - CD112	Flare, South Flare in South Yard	NO	g
CD-104	LPG Flare	NO	g
Group 04 - Loading Facilities and Control Equipment			
P-129 (GP)	1733 Tank Truck Loading – Cumene	NO	b
P-183 (GP)	Unit 1732 benzene railcar unloading station	NO	f
P-637 (GP)	Butane Railcar Loading/Unloading	NO	f
P-638 (PB)	Propane Loading Station	NO	b
P-644	Two (2) Crude Rail Car Unloading Facilities	NO	b
Group 05 – Sulfur Recovery Units			
P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	NO	d - SO_2 40 CFR 63 Subpart UUU initially proposed 9/11/1998 http://www.epa.gov/ttn/atw/petuuu/petuuupg.html
		NO	a -CO
		NO	c - NOx PM, and VOC
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	NO	d - SO_2 40 CFR 63 Subpart UUU initially proposed 9/11/1998 http://www.epa.gov/ttn/atw/petuuu/petuuupg.html
		NO	a -CO
		NO	c - NOx, PM, and VOC
CD-108	Amine Tail Gas Scrubber – Reduction Control System	NO	g
CD-109	Tail Gas Incinerator	NO	g
CD-114 (PB)	Tail Gas Unit 2 Incinerator	NO	g
Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV **[40 CFR 60.480, 60.590, & 63.648; 25 Pa Code 129.58; AMR V Section XIII A., 40 CFR 61 Subpart J]**			b
NA	NA	NA	b
Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components Subject to 40 CFR 63 Subpart H **[40 CFR 63.160-182; 25 Pa Code 129.571; AMR V Section XIII A & B.]**			b
NA	NA	NA	b

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP			b
NA	NA	NA	b
Group 09 – Cooling Towers			b
P-125 (GP)	Cooling Tower 1232 - Unit 1232	NO	b
P-126 (GP)	Cooling Tower 433 - Unit 433	NO	b
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733	NO	b
P-128 (GP)	Cooling Tower 137 – Unit 137	NO	b
P-632 (PB)	Cooling Tower, Unit 868	NO	b
P-633 (PB)	Cooling Tower, Unit 210	NO	b
P-634 (PB)	Cooling Tower, Unit 864	NO	b
P-635 (PB)	Cooling Tower, Complex	NO	b
Group 10 – Miscellaneous Process Vents (Group 1) subject to 40 CFR 63 Subparts G and CC			d 40 CFR 63 Subpart G initially proposed 12/31/1992 http://www.epa.gov/ttn/atw/hon/honpg.html 40 CFR 63 Subpart CC initially proposed 7/15/1994 http://www.epa.gov/ttn/atw/petrefine/petrefpg.html 40 CFR 63 Subpart CC initially proposed July 1992 http://www.epa.gov/compliance/resources/publications/assistance/sectors/mactdoc.pdf#search='refinery%20mact%20part%201'
P-184 (GP)	Four vents (one goes to CD-006, and three go to a process heater or to CD-012 or CD-013	NO	d
CD-006	F-1 Heater	NO	d
P-181	Six vents (go to CD-012 or CD-013)	NO	d
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	NO	d
Group 13A – Tanks Subject to 40 CFR 63 Subpart G			b
P-005 (GP)	T-217, IFR	NO	b
P-017 (GP)	T-790, IFR	NO	b
P-018 (GP)	T-791, IFR	NO	b
P-021 (GP)	T-795, IFR	NO	b
P-022 (GP)	T-798, IFR	NO	b
P-023 (GP)	T-799, IFR	NO	b
P-024 (GP)	T-1117, EFR	NO	b
P-025 (GP)	T-1205, IFR	NO	b
P-029 (GP)	T-1214, IFR	NO	b
P-163 (GP)	T-1209	NO	b
P-523 (PB)	Tank # 121, IFR	NO	b
Group 13B - Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC			b
P-012 (GP)	T-272, IFR	NO	b
P-015 (GP)	T-285, IFR	NO	b
P-016 (GP)	T-286, IFR	NO	b
P-034 (GP)	T-276, IFR	NO	b
P-510 (PB)	Tank # 36, IFR	NO	b
P-538 (PB)	Tank # 172, IFR	NO	b
P-545 (PB)	Tank #190, IFR	NO	b
P-547 (PB)	Tank #204, IFR	NO	b
P-594 (PB)	Tank #847, IFR	NO	b
P-603 (PB)	Tank #885, IFR	NO	b
P-604 (PB)	Tank #886, IFR	NO	b
Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb			NA
P-009 (GP)	T-250, IFR	NO	b
P-010 (GP)	T-251, IFR	NO	b
P-045 (GP)	T-229, IFR	NO	b
P-134 (GP)	T-270, IFR	NO	b
P-135 (GP)	T-767, IFR	NO	b
P-136 (GP)	T-768, IFR	NO	b
P-137 (GP)	T-1101, IFR	NO	b
P-159 (GP)	T-1086	NO	b
P-160 (GP)	T-1087	NO	b
P-174 (GP)	T-1007	NO	b
P-501 (PB)	Tank # 26, IFR	NO	b
P-511 (PB)	Tank # 37, IFR	NO	b

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
Group 14A – External Floating Roof Tanks Subject to only Local and State Regulations			NA
P-598 (PB) Deleted in the Title V Renewal application 2006			NA
Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC			b
P-001 (GP)	T-1116, EFR	NO	b
P-502 (PB)	Tank # 27, EFR	NO	b
P-503 (PB)	Tank # 28, EFR	NO	b
P-504 (PB)	Tank # 29, EFR	NO	b
P-505 (PB)	Tank # 30, EFR	NO	b
P-507 (PB)	Tank # 33, EFR	NO	b
P-508 (PB)	Tank # 34, EFR	NO	b
P-509 (PB)	Tank # 35, EFR	NO	b
P-512 (PB)	Tank # 38, EFR	NO	b
P-513 (PB)	Tank # 39, EFR	NO	b
P-514 (PB)	Tank # 40, EFR	NO	b
P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	NO	b
P-524 (PB)	Tank # 125, EFR	NO	b
P-525 (PB)	Tank # 126, EFR	NO	b
P-526 (PB)	Tank # 128, EFR	NO	b
P-527 (PB)	Tank # 129, EFR	NO	b
P-537 (PB)	Tank # 162, EFR	NO	b
P-540 (PB)	Tank # 176, EFR	NO	b
P-541 (PB)	Tank # 178, EFR	NO	b
P-542 (PB)	Tank #179, EFR	NO	b
P-546 (PB)	Tank #191, EFR	NO	b
P-579 (PB)	Tank #826, EFR	NO	b
P-587 (PB)	Tank #840, EFR	NO	b
P-588 (PB)	Tank #841, EFR	NO	b
P-590 (PB)	Tank #843, EFR	NO	b
P-593 (PB)	Tank #846, EFR	NO	b
P-595 (PB)	Tank #848, EFR	NO	b
P-600 (PB)	Tank #882, EFR	NO	b
P-601 (PB)	Tank #883, EFR	NO	b
P-602 (PB)	Tank #884, EFR	NO	b
P-599 (PB)	Tank #881, EFR	NO	b
Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent)			NA
P-006 (GP)	T-228, EFR	NO	b
P-155 (GP)	T-844	NO	b
P-162 (GP)	T-1136	NO	b
P-624 (PB)	Tank # 7300, EFR	NO	b
P-627 (PB)	Tank #7308, EFR	NO	b
Group 15A – Group 2 Storage Tanks			NA
P-002 (GP)	T-1216, IFR	NO	b
P-003 (GP)	T-1217, IFR	NO	b
P-019 (GP)	T-792, Fixed Roof	NO	b
P-020 (GP)	T-793, Fixed Roof	NO	b
P-027 (GP)	T-1211, Fixed Roof	NO	b
P-028 (GP)	T-1213, Fixed Roof	NO	b
P-030 (GP)	T-1215, Fixed Roof	NO	b
P-031 (GP)	T-1219, Fixed Roof	NO	b
P-032 (GP)	T-273, Fixed Roof	NO	b
P-033 (GP)	T-275, Fixed Roof	NO	b
P-035 (GP)	T-280, Fixed Roof	NO	b
P-036 (GP)	T-282, Fixed Roof	NO	b
P-037 (GP)	T-284, Fixed Roof	NO	b
P-039 (GP)	T-494, Fixed Roof	NO	b
P-144 (GP)	T-219	NO	b
P-146 (GP)	T-225	NO	b
P-147 (GP)	T-227	NO	b
P-148 (GP)	T-267	NO	b
P-149 (GP)	T-268	NO	b
P-150 (GP)	T-281	NO	b
P-151 (GP)	T-676	NO	b
P-152 (GP)	T-677	NO	b
P-153 (GP)	T-794	NO	b

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
P-154 (GP)	T-796	NO	b
P-157 (GP)	T-1038	NO	b
P-164 (GP)	T-1210	NO	b
P-165 (GP)	T-1212	NO	b
P-166 (GP)	T-1218	NO	b
P-167 (GP)	T-1220	NO	b
P-175 (GP)	T-3000	NO	b
P-176 (GP)	T-3001	NO	b
P-177 (GP)	T-3002	NO	b
P-178 (GP)	T-3004	NO	b
P-179 (GP)	T-3005	NO	b
P-515 (PB)	Tank # 42, ~~EFR~~ Cone Roof	NO	b
P-516 (PB)	Tank # 43, Cone Roof	NO	b
P-518 (PB)	Tank # 83, Cone Roof	NO	b
P-519 (PB)	Tank # 84, Cone Roof	NO	b
P-520 (PB)	Tank # 85, Cone Roof	NO	b
P-529 (PB)	Tank # 144, Cone Roof	NO	b
P-530 (PB)	Tank # 145, Cone Roof	NO	b
P-534 (PB)	Tank # 151, EFR	NO	b
P-535 (PB)	Tank # 152, Cone Roof	NO	b
P-551 (PB)	Tank #253, Cone Roof	NO	b
P-563 (PB)	Tank #663, Cone Roof	NO	b
P-565 (PB)	Tank #666, Cone Roof	NO	b
P-567 (PB)	Tank #668, Cone Roof	NO	b
P-571 (PB)	Tank #672, Cone Roof	NO	b
P-574 (PB)	Tank #821, IFR	NO	b
P-575 (PB)	Tank #822, Cone Roof	NO	b
P-576 (PB)	Tank #823, Cone Roof	NO	b
P-577 (PB)	Tank #824, Cone Roof	NO	b
P-578 (PB)	Tank #825, Cone Roof	NO	b
P-580 (PB)	Tank #831, EFR	NO	b
P-582 (PB)	Tank #833, IFR	NO	b
P-584 (PB)	Tank #835, IFR	NO	b
P-585 (PB)	Tank #836, IFR	NO	b
P-623 (PB)	Tank #7275, Cone Roof	NO	b
Group 15B – Fixed Roof Tanks Subject to Subpart Kb Recordkeeping Requirements			NA
P-158 (GP)	T-1039	NO	b
P-171 (GP)	T-1004	NO	b
P-172 (GP)	T-1005	NO	b
P-173 (GP)	T-1006	NO	b
Group 17 – Marine Loading Equipment			
P-130 (GP)	Barge Loading – Girard Point Wharf	NO	f
CD-011	Flare for P130	NO	g
P-636 (PB)	Marine Barge Loading	NA	NA - Point Breeze Marine Barge Loading has been decomissioned
Group 18 – Fluidized Catalytic Cracking Units			
P-120 (GP)	FCCU, Unit 1232 Regenerator	NO	d - PM 40 CFR 63 Subpart UUU initially proposed 9/11/1998 http://www.epa.gov/ttn/atw/petuuu/petuuupg.html f - NO_x, SO_2, and CO c - VOC
CD-004	CO Boiler	NO	g
CD-005	Electrostatic Precipitator	NO	g
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	NO	d - PM 40 CFR 63 Subpart UUU initially proposed 9/11/1998 http://www.epa.gov/ttn/atw/petuuu/petuuupg.html f - NO_x, SO_2, and CO c - VOC
CD-110	Electrostatic Precipitator	NO	g
CD-114	Selective Catalytic Reduction System	NO	g
CD-115	Wet Gas Scrubber	NO	g
Group 19 – Inter-Refinery Pipeline Equipment			NA
P-664 (PB)	Inter-Refinery Pipeline	NO	b

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
			NA
Group 20 – Alkylation Unit			
P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)	NO	f
		NO	a - NOx, CO, VOC, and PM
CD-014	Flare (Unit 433)	NO	g
P-662 (PB)	Alkylation Unit 869	NO	f
		NO	a - NOx, CO, VOC, and PM
CD-111 (P-642)	North Flare South Yard	NO	g
CD-112	South Flare South Yard	NO	g
~~**Group 21 – Hydrogen Purification**~~			
~~P-674 (PB)~~	~~H2 Purification~~	~~NO~~	~~b~~ (Unit no longer in operation, to be removed)
Group 22 – Degreasing Vats			
P-108 (GP)	Degreasing Vats	NO	b
Group 23 – Butane Isomerization			
P-121 (GP)	Butane Isomerization - Unit 331	NO	f
Group 25A – Refining Wastewater			
P-131 (GP)	4A API Separator – WWT	NO	f
CD-002	Adsorber	NO	g
P-132 (GP)	2B API Separator – WWT	NO	f
CD-003	Adsorber	NO	g
P-639 (PB)	API Separators A&B – Bio Plant	NO	f
CD-105	Carbon Adsorption	NO	g
P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC	NO	f
CD-010	Carbon Adsorber	NO	g
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant	NO	f
CD-106	Carbon Adsorption	NO	g
P-641 (PB)	Bio Plant Sewer System – Refinery	NO	f
CD-107	Carbon Adsorption	NO	g
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC	NO	f
P-141 (GP)	T-1146, T-1147	NO	f
CD-007	Adsorber	NO	g
P-142 (GP)	T-1142, T-1143	NO	b
Group 25B – SOCMI Wastewater			
P-123	SOCMI Wastewater	NO	e
P-115	Refining Wastewater	NO	e
P-180 (GP)	Cumene Production Unit 1733	NO	e
P-181 (GP)	Benzene Production Unit 1732	NO	e
Group 26 – Benzene and Cumene Production			
P-180 (GP)	Cumene Production Unit 1733	NO	f
P-181 (GP)	Benzene Production Unit 1732	NO	f
Group 27 - Stacks			
S-111 (GP)	Used by CU-004, B-104 HTR	NO	h
S-112 (GP)	Used by CU-005, H-1 Debutanizer HTR	NO	h
S-113 (GP)	Used by CU-006, H-602 HTR	NO	h
S-114 (GP)	Used by CU-007, H-601 HTR	NO	h
S-115 (GP)	Used by CU-008, H-600 HTR	NO	h
S-116 (GP)	Used by CU-009, H-2 HTR	NO	h
S-117 (GP)	Used by CU-010, H-401 HTR	NO	h
S-117A (GP)	Used by CU-010, H-401 HTR	NO	h
S-117B (GP)	Used by CU-010, H-401 HTR	NO	h
S-117C (GP)	Used by CU-010, H-401 HTR	NO	h
S-118 (GP)	Used by CU-011, H-400 HTR	NO	h
S-118A (GP)	Used by CU-011, H-400 HTR	NO	h
S-118B (GP)	Used by CU-011, H-400 HTR	NO	h
S-118C (GP)	Used by CU-011, H-400 HTR	NO	h
S-119 (GP)	Used by CU-012, H-3 HTR	NO	h
S-120 (GP)	Used by CU-013, F-1 HTR Used by CU-014, F-2 HTR	NO	h

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
S-122 (GP)	Used by CU-015, F-3 HTR	NO	h
S-123A (GP)	Used by CU-016, B-101 HTR	NO	h
S-123B (GP)	Used by CU-016, B-101 HTR	NO	h
S-123C (GP)	Used by CU-016, B-101 HTR	NO	h
S-124 (GP)	Used by CU-017, H-1 Iso Stripper Heater	NO	h
S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-019, 38 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	NO	h
S-126 (GP)	Used by CU-022, 45 Boiler	NO	h
S-131 (GP)	Used by P-131, 4A API Separator Unit – WWT	NO	h
S-132 (GP)	Used by P-132, 2B API Separator Unit – WWT	NO	h
S-133 (GP)	Used by CD-004 FCCU/CO Boiler	NO	h
S-134 (GP)	Used by P-121 Butane Isomerization	NO	h
S-138 (GP)	Used by P-125, 1232 Cooling Tower	NO	h
S-139 (GP)	Used by P-126, 433 Cooling Tower	NO	h
S-140 (GP)	Used by P-127, 490 Cooling Tower	NO	h
S-141 (GP)	Used by P-128, 137 Cooling Tower	NO	h
S-142 (GP)	Used by P-129, 1733 Loading Rack	NO	h
S-143 (GP)	Used by P-130, Barge Loading – Girard Point Wharf	NO	h
S-144 (GP)	Used by P-108 Degreasing Vats	NO	h
S-145 (GP)	Used by P-109, 40 CFR 60, Subpart GGG Leaks	NO	h
S-146 (GP)	Used by P-110, 40 CFR 63, Subpart CC Leaks	NO	h
S-147 (GP)	Used by P-111, 40 CFR 63, Subpart H Leaks	NO	h
S-148 (GP)	Used by P-112, 40 CFR 63, Subpart J	NO	h
S-149 (GP)	Used by P-113, 29 PA 129.58 Equipment Leaks	NO	h
S-150 (GP)	Used by P-114, 40 CFR 61, Subpart FF Wastes	NO	h
S-151 (GP)	Used by P-115, Miscellaneous Wastewater	NO	h
S-153 (GP)	Used by P-117, 1231 Flare	NO	h
S-154 (GP)	Used by P-118, 1232 Flare	NO	h
S-155 (GP)	Used by P-119, 433 Flare	NO	h
S-156 (GP)	Used by P-120, 1232 FCCU	NO	h
S-200 (GP)	Used by P-001, T-1116	NO	h
S-201 (GP)	Used by P-002, T-1216	NO	h
S-202 (GP)	Used by P-003, T-1217	NO	h
S-204 (GP)	Used by P-005, T-217	NO	h
S-205 (GP)	Used by P-006, T-228	NO	h
S-208 (GP)	Used by P-009, T-250	NO	h
S-209 (GP)	Used by P-010, T-251	NO	h
S-211 (GP)	Used by P-012, T-272	NO	h
S-214 (GP)	Used by P-015, T-285	NO	h
S-215 (GP)	Used by P-016, T-286	NO	h
S-216 (GP)	Used by P-017, T-790	NO	h
S-217 (GP)	Used by P-018, T-791	NO	h
S-218 (GP)	Used by P-019, T-792	NO	h
S-219 (GP)	Used by P-020, T-793	NO	h
S-220 (GP)	Used by P-021, T-795	NO	h
S-221 (GP)	Used by P-022, T-798	NO	h
S-222 (GP)	Used by P-023, T-799	NO	h
S-223 (GP)	Used by P-024, T-1117	NO	h
S-224 (GP)	Used by P-025, T-1205	NO	h
S-226 (GP)	Used by P-027, T-1211	NO	h
S-227 (GP)	Used by P-028, T-1213	NO	h
S-228 (GP)	Used by P-029, T-1214	NO	h
S-229 (GP)	Used by P-030, T-1215	NO	h
S-230 (GP)	Used by P-031, T-1219	NO	h
S-231 (GP)	Used by P-032, T-273	NO	h
S-232 (GP)	Used by P-033, T-275	NO	h
S-233 (GP)	Used by P-034, T-276	NO	h
S-234 (GP)	Used by P-035, T-280	NO	h
S-235 (GP)	Used by P-036, T-282	NO	h
S-236 (GP)	Used by P-037, T-284	NO	h

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
S-238 (GP)	Used by P-039, T-494	NO	h
S-242 (GP)	Used by P-043, T-291	NO	h
S-243 (GP)	Used by P-044, T-292	NO	h
S-244 (GP)	Used by P-045, T-229	NO	h
S-245 (GP)	Used by P-134, T-270	NO	h
S-246 (GP)	Used by P-135, T-767	NO	h
S-247 (GP)	Used by P-136, T-768	NO	h
S-248 (GP)	Used by P-137, T-1101	NO	h
S-252 (GP)	Used by P-141, Two roughing filters (110 and 111)	NO	h
S-253 (GP)	Used by P-142, Two oxidation tanks (101 and 102)	NO	h
S-254 (GP)	Used by P-143, 1732 and 1733 Plant Accumulators	NO	h
S-801 (PB)	Used by CU-101, Unit 210A, HTR H201	NO	h
S-802 (PB)	Used by CU-102, Unit 210B, HTR H201	NO	h
S-803 (PB)	Used by CU-103, Unit 210C, HTR 13H1	NO	h
S-804 (PB)	Not in use	NO	h
S-805 (PB)	Not in use	NO	h
S-806 (PB)	Not in use	NO	h
S-807 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4	NO	h
S-808 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4	NO	h
S-809 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5	NO	h
S-810 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5	NO	h
S-811 (PB)	Used by CU-113, Unit 860, HTR 2H6	NO	h
S-812 (PB)	Used by CU-114, Unit 860, HTR 2H7	NO	h
S-813 (PB)	Used by CU-115, Unit 860, HTR 2H8	NO	h
S-814 (PB)	Used by CU-116, Unit 860 Boiler 2H9	NO	h
S-818 (PB)	Used by CU-118, Unit 864, HTR PH1	NO	h
S-822 (PB)	Used by CU-123, Unit 864, HTR PH7	NO	h
S-823 (PB)	Used by CU-124, Unit 864, HTR PH11	NO	h
S-824 (PB)	Used by CU-125, Unit 864, HTR PH12	NO	h
S-825 (PB)	Used by CU-126, Unit 865, HTR 11H1	NO	h
S-826 (PB)	Used by CU-127, Unit 865, HTR 11H2	NO	h
S-827 (PB)	Used by CU-128, Unit 865, HTR 12H1	NO	h
S-828 (PB)	Used by CU-129 , FCCU 868, HTR 8H101	NO	h
S-829 (PB)	Used by CU-130, H1 Heater	NO	h
S-834 (PB)	Used by CU-135, 22 Boiler #2	NO	h
S-835 (PB)	Used by CU-136, 22 Boiler #2	NO	h
S-836 (PB)	Used by P-501, Tank #26	NO	h
S-837 (PB)	Used by P-502, Tank #27	NO	h
S-838 (PB)	Used by P-503, Tank #28	NO	h
S-839 (PB)	Used by P-504, Tank #29	NO	h
S-840 (PB)	Used by P-505, Tank #30	NO	h
S-842 (PB)	Used by P-507, Tank #33	NO	h
S-843 (PB)	Used by P-508, Tank #34	NO	h
S-844 (PB)	Used by P-509, Tank #35	NO	h
S-845 (PB)	Used by P-510, Tank #36	NO	h
S-846 (PB)	Used by P-511, Tank #37	NO	h
S-847 (PB)	Used by P-512, Tank #38	NO	h
S-848 (PB)	Used by P-513, Tank #39	NO	h
S-849 (PB)	Used by P-514, Tank #40	NO	h
S-850 (PB)	Used by P-515, Tank #42	NO	h
S-851 (PB)	Used by P-516, Tank #43	NO	h
S-853 (PB)	Used by P-518, Tank #83	NO	h
S-854 (PB)	Used by P-519, Tank #84	NO	h
S-855 (PB)	Used by P-520, Tank #85	NO	h

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
S-856 (PB)	Used by P-521, Tank #117	NO	h
S-858 (PB)	Used by P-523, Tank #121	NO	h
S-859 (PB)	Used by P-524, Tank #125	NO	h
S-860 (PB)	Used by P-525, Tank #126	NO	h
S-861 (PB)	Used by P-526, Tank #128	NO	h
S-862 (PB)	Used by P-527, Tank #129	NO	h
S-864 (PB)	Used by P-529, Tank #144	NO	h
S-865 (PB)	Used by P-530, Tank #145	NO	h
S-869 (PB)	Used by P-534, Tank #151	NO	h
S-870 (PB)	Used by P-535, Tank #152	NO	h
S-872 (PB)	Used by P-537, Tank #162	NO	h
S-873 (PB)	Used by P-538, Tank #172	NO	h
S-875 (PB)	Used by P-540, Tank #176	NO	h
S-876 (PB)	Used by P-541, Tank #178	NO	h
S-877 (PB)	Used by P-542, Tank #179	NO	h
S-880 (PB)	Used by P-545, Tank #190	NO	h
S-881 (PB)	Used by P-546, Tank #191	NO	h
S-882 (PB)	Used by P-547, Tank #204	NO	h
S-886 (PB)	Used by P-551, Tank #253	NO	h
S-898 (PB)	Used by P-563, Tank #663	NO	h
S-900 (PB)	Used by P-565, Tank #666	NO	h
S-902 (PB)	Used by P-567, Tank #668	NO	h
S-906 (PB)	Used by P-571, Tank #672	NO	h
S-909 (PB)	Used by P-574, Tank #821	NO	h
S-910 (PB)	Used by P-575, Tank #822	NO	h
S-911 (PB)	Used by P-576, Tank #823	NO	h
S-912 (PB)	Used by P-577, Tank #824	NO	h
S-913 (PB)	Used by P-578, Tank #825	NO	h
S-914 (PB)	Used by P-579, Tank #826	NO	h
S-915 (PB)	Used by P-580, Tank #831	NO	h
S-917 (PB)	Used by P-582, Tank #833	NO	h
S-919 (PB)	Used by P-584, Tank #835	NO	h
S-920 (PB)	Used by P-585, Tank #836	NO	h
S-922 (PB)	Used by P-587, Tank #840	NO	h
S-923 (PB)	Used by P-588, Tank #841	NO	h
S-924 (PB)	Used by P-589, Tank #841	NO	h
S-928 (PB)	Used by P-593, Tank #846	NO	h
S-929 (PB)	Used by P-594, Tank #847	NO	h
S-934 (PB)	Used by P-599, Tank #881	NO	h
S-935 (PB)	Used by P-600, Tank #882	NO	h
S-936 (PB)	Used by P-601, Tank #883	NO	h
S-937 (PB)	Used by P-602, Tank #884	NO	h
S-938 (PB)	Used by P-603, Tank #885	NO	h
S-939 (PB)	Used by P-604, Tank #886	NO	h
S-958 (PB)	Used by P-623, Tank #7275	NO	h
S-959 (PB)	Used by P-624, Tank #7300 –Bio Plant	NO	h
S-962 (PB)	Used by P-627, Tank #7308 – Bio Plant	NO	h
S-963 (PB)	Used by P-628, Tank #7309 – South Yard	NO	h
S-966 (PB)	Used by P-632, Cooling Tower – Unit 868	NO	h
S-967 (PB)	Used by P-633, Cooling Tower – Unit 210	NO	h
S-968 (PB)	Used by P-634, Cooling Tower – Unit 864	NO	h
S-969 (PB)	Used by P-635, Cooling Tower – Complex Unit	NO	h
S-970 (PB)	Used by P-636, Barge Loading	NO	h
S-972 (PB)	Used by P-638, Rail Car Loading	NO	h
S-973 (PB)	Used by P-639, Bio Plant DNF Unit A&B	NO	h
S-974 (PB)	Used by P-640, Bio Plant Sewer System	NO	h
S-975 (PB)	Used by P-641, Bio Plant Sewer System	NO	h
S-976 (PB)	Used by P-642, North Flare in South Yard	NO	h
S-977 (PB)	Used by P-643, South Flare in South Yard Used by P-662, 869 Alkylation Unit	NO	h
S-978 (PB)	Used by P-638, LPG Rail Car and Tank Truck Loading/Unloading	NO	h
S-980 (PB)	Used by P-646, Two Emergency Sulfur Plant Flare (Unit 867)	NO	h
S-983 (PB)	Used by P-659 and P-660, North and South Claus Sulfur Recovery Plant (Unit 867)	NO	h

ID Group	Source Name	Does CAM Apply	CAM Applicability Determination
S-985 (PB)	Used by P-661, FCCU (Unit 868)	NO	h
S-986 (PB)	Used by P-662, Alkylation Unit 869	NO	h
S-987 (PB)	Used by P-664, Inter-refinery Pipeline	NO	h
S-988 (PB)	Used by P-665, 40 CFR 60, Subpart GGG Leaks	NO	h
S-990 (PB)	Used by P-667, 40 CFR 61, Subpart FF Wastes	NO	h
S-994 (PB)	Used by P-671, 25 PA Code 129.58 Equipment Leaks	NO	h
S-996 (PB)	Used by P-670, 40 CFR 61, Subpart J Equipment Leaks	NO	h
S-997 (PB)	Used by P-674, Hydrogen Purification Unit 861	NO	h
S-8701 (PB)	Used by CU-137, Unit 870, H1 Heater	NO	h
S-8702 (PB)	Used by CU-138, Unit 870, H2 Heater	NO	h
S-8703 (PB)	Used by CU-140, Unit 870, H3 Heater	NO	h
Group IN - Insignificant Activities			
P-043 (GP)	T-291, IFR (used for odor control)	NO	a
P-046 (PB)	Twelve (12) Gasoline Octane Knock Engines (Lab Equipment)	NO	a
P-044 (GP)	T-292, IFR (used for odor control	NO	a

CITY OF PHILADELPHIA
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ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**CO Boiler** **SCR System** **WGS System**	Control Unit ID	**CD-004** **CD-115** **CD-116**	Pollutant	**PM, NO_x, SO_2, CO, and H_2SO_4**
Control Make	**Not Applicable**	Control Model No.	**Not Applicable**	Control Efficiency	**Not Applicable**
Source Unit ID	**P-120 (GP)**	Source or Emission Unit Name		**FCCU, Unit 1232 Regenerator**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☒	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is subject to an emission limitation or standard for NO_x, SO_2, and CO for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1

Potential precontrol emissions of VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act (See Addendum 3).

SECTION C. CAM STATUS

Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

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ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**Flare -North Flare South Yard** **Flare –South Flare South Yard**	Control Unit ID	**CD-111 (P-642)** **CD-112 (P-643)**	Pollutant	**NOx, CO, VOC, and PM**
Control Make	**Not Applicable**	Control Model No.	**Not Applicable**	Control Efficiency	**Not Applicable**
Source Unit ID	**P-662 (PB)**	Source or Emission Unit Name		**Alkylation Unit 869**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☐	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☒	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is not subject to an emission limitation or standard for NOx, CO, VOC, PM, and SO2.

Emission unit is subject to an emission limitation or standard for HAPs and SO_2 which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1.

SECTION C. CAM STATUS		
Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

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ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**Electrostatic Precipitator**	Control Unit ID	**CD-110**	Pollutant	**PM, NO_x, SO_2, and CO**
Control Make	**Not Available**	Control Model No.	**Not Available**	Control Efficiency	**Not Available**
Source Unit ID	**P-661 (PB)**	Source or Emission Unit Name		**Fluid Catalytic Cracking Regenerator – Unit 868**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☒	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is subject to an emission limitation or standard for NO_x, SO_2, and CO for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1

Potential precontrol emissions of VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act (See Addendum 3).

SECTION C. CAM STATUS		
Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**SCR System**	Control Unit ID	**CD-008**	Pollutant	**NOx, PM**
Control Make	**Not Applicable**	Control Model No.	**Not Applicable**	Control Efficiency	**Not Applicable**
Source Unit ID	**CU-010, CU-011 (GP)**	Source or Emission Unit Name		**Unit 1332 H-401, H-400 Heaters**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☒	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is subject to an emission limitation or standard for NO_x and PM, and CO for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1

Potential precontrol emissions of VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act (See Addendum 3).

SECTION C. CAM STATUS		
Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

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ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**CO Oxidation Catalyst** **NOx Selective Catalytic Reduction** **Wet Electrostatic Precipitator**	Control Unit ID	**CD-015** **CD-016** **CD-017**	Pollutant	**NOx, CO, PM**
Control Make	**Not Applicable**	Control Model No.	**Not Applicable**	Control Efficiency	**Not Applicable**
Source Unit ID	**CU-022 (GP)**	Source or Emission Unit Name		**#45 Boiler**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☒	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is subject to an emission limitation or standard for NO_x, CO, and PM for which a Title V operating permit specifies a continuous compliance determination method, as defined in 40 CFR 64.1

Potential precontrol emissions of VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act (See Addendum 3).

SECTION C. CAM STATUS

Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
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ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**Amine Tail Gas Scrubber Reduction Control System** **Tail Gas Incinerator** **Tail Gas Unit 2 Incinerator**	Control Unit ID	**CD-108** **CD-109** **CD-114**	Pollutant	**CO and SO_2**
Control Make	**NA**	Control Model No.	**NA**	Control Efficiency	**NA**
Source Unit ID	**P-659 (PB)**	Source or Emission Unit Name		**North Claus Sulfur Recovery Plant – Unit 867**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☐	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is not subject to an emission limitation or standard for CO.

Potential precontrol emissions of NOx, PM, and VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.

SECTION C. CAM STATUS

Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

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ADDENDUM 3
CAM APPLICABILITY WORKSHEET FOR SOURCES

SECTION A. GENERAL INFORMATION

Federal Tax ID	**61-1689574**				
Firm Name	**Philadelphia Energy Solutions Refining and Marketing LLC**				
Plant ID	**01501**				
Control Type	**Amine Tail Gas Scrubber Reduction Control System** **Tail Gas Incinerator** **Tail Gas Unit 2 Incinerator**	Control Unit ID	**CD-108** **CD-109** **CD-114**	Pollutant	**CO and SO_2**
Control Make	**NA**	Control Model No.	**NA**	Control Efficiency	**NA**
Source Unit ID	**P-660 (PB)**	Source or Emission Unit Name		**South Claus Sulfur Recovery Plant – Unit 867**	

SECTION B. MONITORING

The emissions unit is exempted from CAM because the emission limitations or standards are:

Yes	No	
☒	☐	Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.
☐	☐	Stratospheric ozone protection requirements under Title VI of the Act.
☐	☐	Acid Rain Program requirements pursuant to sections 404-407(b) or 410 of the Clean Air Act
☐	☐	Approved under an emissions trading program.
☐	☐	An emissions cap that meets the requirements specified in 40 CFR § 70.4(b)(12).
☐	☐	Determined by a continuous compliance method that does not use an assumed control factor
☐	☐	Requirements for a backup utility power emissions unit as defined in § 72.2 which:

Yes	No	
☐	☐	Is owned by a municipality and
☐	☐	Is exempt from all Part 75 monitoring requirements
☐	☐	Is operated solely for providing power during peak electrical demand or emergency situations
☐	☐	Has annual average emissions (for previous 3 years) of less than 50% of the major source cut off and emissions are expected to remain below 50 %

Emission unit is not subject to an emission limitation or standard for CO.

Potential precontrol emissions of NOx, PM, and VOC are less than 100 percent of the major source amount.

Emission unit is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP) Proposed by the EPA Administrator after November 15, 1990 pursuant to Sections 111 or 112 of the Clean Air Act.

SECTION C. CAM STATUS

Yes	No	
☐	☒	CAM applies (be sure to include appropriate citation numbers under Source Applicable Requirements section of the application)
☐	☒	CAM Plan is attached or has been submitted
☐	☒	An Implementation Plan is attached

Attachment E
List of Proposed Changes to Title V/State Operating Permit No. V06-016

Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
1	NA	Table of Contents	2 - 3	Update TVOP Table of Contents	Administrative Changes
2	NA	Permit Info	4	Update Permit Effective/Expiration Dates, Permit Number, and Facility Contact info	Administrative Changes
3	NA	Table A1 - Facility Inventory List	5	Change Source Group 01 name to "Boilers" instead of "Boilers and Heater"	This source group is only comprised of boilers.
4	CU-022 (GP)	Table A1 - Facility Inventory List	5	Insert CU-022 (GP), #45 Boiler into Group 01 sources.	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
5	CU-025 (PB)	Table A1 - Facility Inventory List	5	Insert CU-025 (PB), Boiler No. 1 into Group 01 sources.	Boiler No. 1 installed according to AMS Installation Permit No. 11276, dated 6 February 2012.
6	CU-016 (GP)	Table A1 - Facility Inventory List	5	Revise capacity from 91 MMBtu/hr to 104.5 MMBtu/hr	Referenced in AMS Plan Approval 12195
7	CU-101 (PB)	Table A1 - Facility Inventory List	5	Revise capacity from 183 MMBtu/hr to 192 MMBtu/hr	Referenced in AMS Plan Approval 12195
8	CU-102 (PB)	Table A1 - Facility Inventory List	5	Revise capacity from 242 MMBtu/hr to 254 MMBtu/hr	Referenced in AMS Plan Approval 12195
9	CU-126 (PB)	Table A1 - Facility Inventory List	6	Revise capacity from 72.2 MMBTU/hr to 87.3 MMBTU/hr	Referenced in AMS Plan Approval 12195
10	CU-127 (PB)	Table A1 - Facility Inventory List	6	Revise capacity from 49.9 MMBTU/hr to 64.2 MMBTU/hr	Referenced in AMS Plan Approval 12195
11	CU-128 (PB)	Table A1 - Facility Inventory List	6	Revise capacity from 43 MMBTU/hr to 61.2 MMBTU/hr	Referenced in AMS Plan Approval 12195
12	CU-129 (PB)	Table A1 - Facility Inventory List	6	Revise capacity from 49.5 MMBTU/hr to 60.0 MMBTU/hr	Referenced in AMS Plan Approval 12195
13	CU-140 (PB)	Table A1 - Facility Inventory List	6	Add CU-140, Unit 870 H3 to heater group: Group 03	Heater 870 H3 was installed in 2018 and will be operational in 2019. Heater was purchased in 2016.
14	P-643 (PB) CD112	Table A1 - Facility Inventory List	7	Remove "(currently idled)" from source name	South Flare in South Yard has been put back in service according to AMS Plan Approval 13260 dated 18 July 2014
15	P-646 (PB)	Table A1 - Facility Inventory List	7	Remove P-646 (PB) flares from group	Source is to be deactivated and removed according to IP18-000260 & IP18-000263
16	CD-104	Table A1 - Facility Inventory List	7	Move CD-104 (LPG Flare) from Source Group 04 to Source Group 03	In an effort to group like-sources, PES requests that CD-104 be included with Group 03 instead of Group 04.
17	P-637 (GP)	Table A1 - Facility Inventory List	7	Add "Butane Railcar Loading/Unloading" as a source	Source added by AMS Permit 14045
18	P-644 (PB)	Table A1 - Facility Inventory List	7	Add "Two (2) Crude Rail Car Unloading Facilities" as a Group 04 source	Source added by AMS Permit 13020B
19	CD-113	Table A1 - Facility Inventory List	8	Remove CD-113 Backup Tail Gas Unit (BUTGU)	Previously shut down
20	Group 13A	Table A1 - Facility Inventory List	9 - 10	Update Group 13A with reactivated tanks, current contents, and construction years	Tanks have switched products, show up-to-date contents.
21	Group 13B	Table A1 - Facility Inventory List	10	Update Group 13B with reactivated tanks, current contents, and construction years	Tanks have switched products, show up-to-date contents.
22	Group 14B	Table A1 - Facility Inventory List	11 - 12	Update Language for tanks to store "Gasoline Components"	Clarify that tanks do not always store finished gasoline
23	Group 15A	Table A1 - Facility Inventory List	13	Add Reactivated P-165 (GP), Tank 1212 to Group 15A	Reactivated by General Plan Approval 16000034
24	CD-011	Table A1 - Facility Inventory List	14	Change CD-011, "Flare for P130" to "Thermal Oxidizer for P130"	Correcting equipment classification
25	Group 18	Table A1 - Facility Inventory List	14	Change Source ID of "1232 SCR" from nothing to "CD-115"	Source did not previously have a Source ID in this table.
26	Group 18	Table A1 - Facility Inventory List	14	Change Source ID of "Wet Gas Scrubber" from nothing to "CD-116"	Source did not previously have a Source ID in this table.
27	Group 21	Table A1 - Facility Inventory List	15	Idle Group 21 - Hydrogen Purification	This source no longer operates.
28	Group 27	Table A1 - Facility Inventory List	17 - 18	Add EM-002 and EM-003, Emergency Flood Control RICEs	New sources approved by IP18000373 & 374
29	FP-020	Table A1 - Facility Inventory List	18	Add FP-020 Butane Terminal Firewater System Pump #1 to inventory list	New source
30	FP-021	Table A1 - Facility Inventory List	18	Add FP-021 Butane Terminal Firewater System Pump #2 to inventory list	New source
31	S-117 (GP)	Table A1 - Facility Inventory List	20	Update CU-010/011 stack to show SCR	Both heaters routed to SCR then have combined stack
32	S-126 (GP)	Table A1 - Facility Inventory List	20	Add Stack S-126, used by Boiler 45	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
33	S-127 (PB)	Table A1 - Facility Inventory List	20	Add Stack S-127, used by Boiler No. 1	Boiler No. 1 installed according to AMS Installation Permit No. 11276, dated 6 February 2012.
34	S-249, S-250, S-251	Table A1 - Facility Inventory List	22 - 23	Add Stacks S-225, S-249, S-250, and S-251	Tanks 1208, 1209, 1212, and 219 were reactivated
35	S-804 (PB)	Table A1 - Facility Inventory List	23	Add Heater source to stack	This source stack name is used later in existing permit

Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
36	S-979 (PB)	Table A1 - Facility Inventory List	28	Add Source S-979, Used by P-644, Two (2) Crude Rail Car Unloading Facilities	Crude Rail Car Unloading Facilities were installed according to AMS Installation Permit No.: 13020B
37	S-980 (PB)	Table A1 - Facility Inventory List	28	Remove entire source from source group	Source associated with this stack is to be de-activated and removed
38	S-997 (PB)	Table A1 - Facility Inventory List	28	Idle Stack of Group 21 - Hydrogen Purification	This source no longer operates.
39	S-8703 (PB)	Table A1 - Facility Inventory List	29	Add Stack S-8703 (PB), used by CU-140, 870 H3	Heater 870 H3 was installed in 2018 and will be operational in 2019. Heater was purchased in 2016.
40	S-3413 & S-3414	Table A1 - Facility Inventory List	29	Add stacks for new sources EM-002 and EM-003	New sources approved by IP18000373 & 374
41	P-046 (PB)	Table A1 - Facility Inventory List	29 & 35	Add Eight (8) Gasoline Octane Knock Engines (Lab Equipment) to insignificant source group	Existing Engines (<4 bhp each) used for testing
42	NA	Process Flow Diagram	31	Update the Girard Point PFD and change the name to Philadelphia Energy Solutions from Philadelphia Sonoco Refinery in PFD name	Name change to PES
43	NA	Process Flow Diagram	32	Update the Point Breeze PFD and change the name to Philadelphia Energy Solutions from Philadelphia Sonoco Refinery in PFD name	Name change to PES
44	CD-005	Table A1 - Facility Inventory List	33	Remove 'Electrostatic Precipitator" CD-005	Per Plan approval 04322
45	CD-008	Table A1 - Facility Inventory List	33	Add NOx SCR for 1332 Heaters 401/400	Existing Control Device
46	CD-011	Table A1 - Facility Inventory List	33	Change "Flare for P130" to "Thermal Oxidizer for P130"	Correcting equipment classification
47	CD-015	Table A1 - Facility Inventory List	33	Add CO Oxidation Catalyst for Boiler 45	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
48	CD-016	Table A1 - Facility Inventory List	33	Add NOx selective oxidation catalyst for Boiler 45	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
49	CD-017	Table A1 - Facility Inventory List	33	Add WESP for boiler 45	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
50	CD-113	Table A1 - Facility Inventory List	33	Remove CD-113 Backup Tail Gas Unit	Previously shut down
51	CU-022 (GP)	Table A1 - Facility Inventory List	34	Insert CU-022 (GP), #45 Boiler into Group 01 sources.	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
52	CU-025 (PB)	Table A1 - Facility Inventory List	34	Insert CU-025 (PB), Boiler No. 1 into Group 01 sources.	Boiler No. 1 installed according to AMS Installation Permit No. 11276, dated 6 February 2012.
53	CU-140 (PB)	Table A1 - Facility Inventory List	34	Insert CU-140 (PB), 870 H3 Boiler into Group 02 sources.	Heater 870 H3 was installed in 2018 and will be operational in 2019. Heater was purchased in 2016.
54	P-637 (GP)	Table A1 - Facility Inventory List	39	Insert P-637 (GP), Butane Railcar Loading into Group 04 sources.	AMS Installation Permit No.: 14045
55	P-644 (PB)	Table A1 - Facility Inventory List	39	Insert P-644 (PB), Two (2) Crude Rail Car Unloading Facilities into Group 04 sources.	AMS Installation Permit No.: 13020B
56	P-646 (PB)	Table A1 - Facility Inventory List	39	Removed entire source from source group	Source was deactivated and removed according to IP18-000260 & IP18-000263
57	P-674 (PB)	Table A1 - Facility Inventory List	40	P-674, H2 Purification, is an idled source.	Source has not operated for several years.
58	NA	Section C. - Facility Wide Requirements. Condition 10.	55	Update Stratospheric Ozone Protection Requirements.	Including language from new 2016 ODS regulations in 40 CFR Part 82 and mentioning what PES has on site.
59	NA	Section C. - Facility Wide Requirements. Renumbered Condition 17.	58	Correct AMS phone number to 215-685-7572	Phone Number to to be updated
60	S-126 (GP)	Table A3-Facility Inventory List (Girard Point Stack Parameters)	61	Add stack parameters for Boiler #45 stack	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
61	S-804 (PB)	Table A3-Facility Inventory List (Girard Point Stack Parameters)	62	Updated Stack Parameter for 859 1H-1 Heater stack	Existing heater information was incorrectly incorporated due to a decomissioned heater being named similarly.

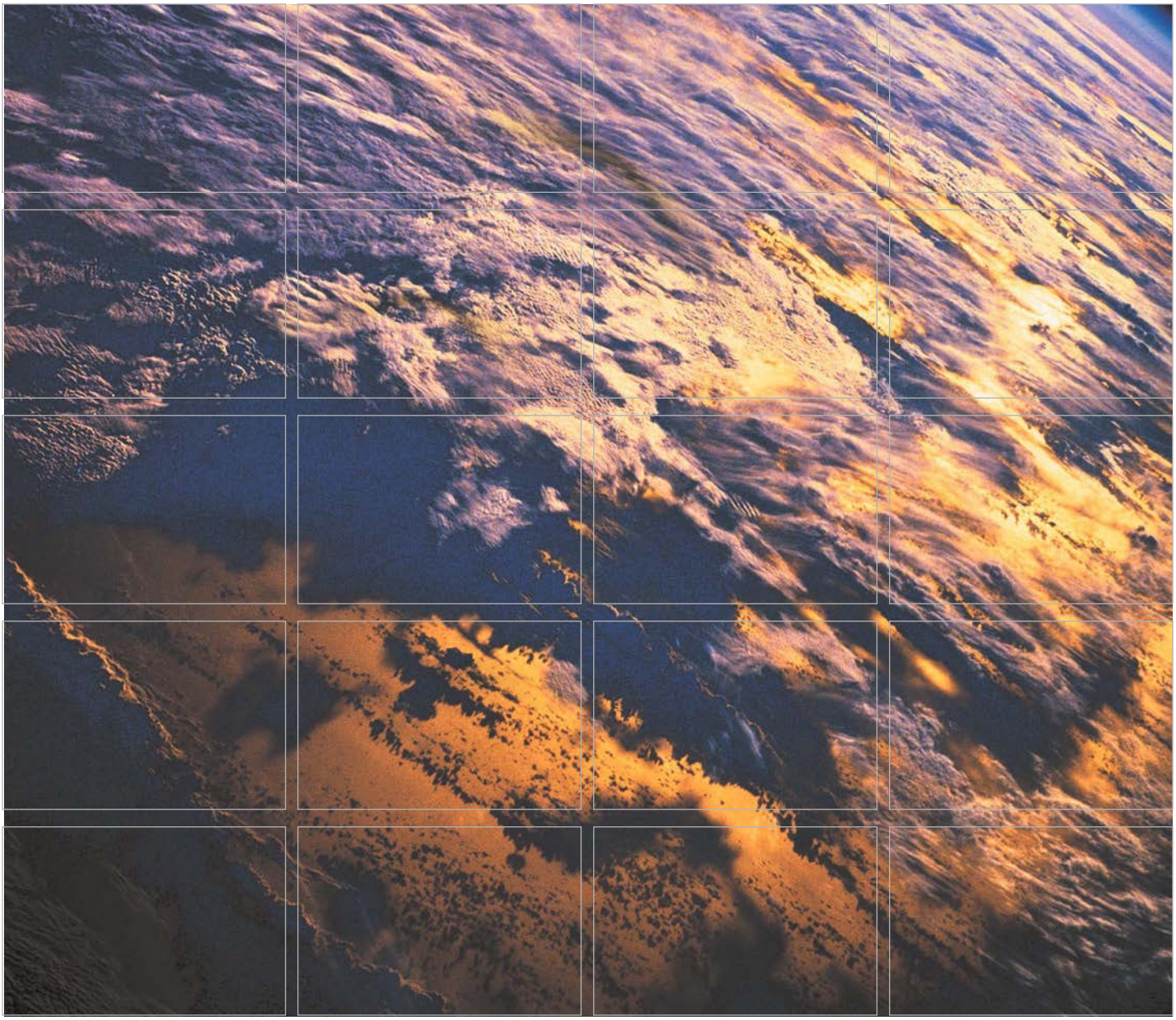
Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
62	S-8701 (PB)	Table A4-Facility Inventory List (Point Breeze Stack Parameters)	62	Add stack parameters for 870 H1 Heater stack	Not Previously Included
63	S-8702 (PB)	Table A4-Facility Inventory List (Point Breeze Stack Parameters)	63	Add stack parameters for 870 H2 Heater stack	Not Previously Included
64	S-8703 (PB)	Table A4-Facility Inventory List (Point Breeze Stack Parameters)	63	Add stack parameters for 870 H3 Heater stack	Heater 870 H3 was installed in 2018 and will be operational in 2019. Heater was purchased in 2016.
65	NA	Section D./1.(a)(6)	64	Add greenhouse gas calculation methodology	Not Previously Included
66	NA	Section D./ 1.(b)(2)(vi - vii)	65	Add testing methods for VOC and H2S compliance	Plan approval 15253
67	CU-022 (GP)	Section D./ 2.(A)	67	Add CU-022 to list of sources in Group 01 - Boilers	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
68	CU-022 (GP)	Section D./ 2.(A)(a)(1).	67	Add extra CO limit for Boiler #45	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
69	CU-022 (GP)	Section D./ 2.(A)(a)(2).	67 - 68	Add Boiler #45 to No. 3 Boilerhouse and update NOx emissions	NOx emissions are from Plan approval No 15271 dated 4/25/2017
70	CU-022 (GP)	Section D./ 2.(A)(a)(3)	68	Add Boiler #45 startup, shutdown, and maintenance NOx limit.	AMS Plan Approval 15247
71	CU-022 (GP)	Section D./ 2.(A)(a)(4)	68	Add additional Emission Limits for Boiler #45	AMS Plan Approval 15247
72	CU-022 (GP)	Section D. Table in condition C.2.(a)	68 - 69	Add Boiler #45 short term rates and add annual emission limits for other boilers. Include plan approval numbers in footnotes	Plan Approvals 14149, 15247, and IP 16000264
73	Group 01	Section D./ 2.(A)(b)(1)	69	Add reference for more info on NOx affected sources	Link two parts of one large condition type
74	CU-022 (GP)	Section D./ 2.(A)(b)(2).	69 - 70	Add Boiler #45 to refinery fuel gas only restriction	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
75	CU-022 (GP)	Section D./ 2.(A)(b)(4)., 2.(A)(b)(10)	70	Add Boiler #45 to total group heat input limit and Low NOx burner requirement	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
76	CU-022 (GP)	Section D./ 2.(A)(b)(5).	70	Add Boiler #45 individual heat input limit	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
77	CU-022 (GP)	Section D./ 2.(A)(b)(6).	70	Add Boiler #45 to CEMs requirements	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
78	CU-022 (GP)	Section D./ 2.(A)(b)(9)	70	Incorporate additional H2S limits for Boiler #45	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
79	CU-022 (GP)	Section D./ 2.(A)(b)(10)	70	Add Boiler #45 to Low Nox Burner requirement	RACT Plan Approval
80	Group 01	Section D./ 2.(A)(b)(10-12)	70 - 71	Add applicable emissions reduction conditions to group 01 boilers	Plan Approval 15247
81	CU-022 (GP)	Section D./ 2.(A)(b)(13)	71	Add Boiler #45 to Heat Input Cap table	#45 Boiler installed according to AMS Plan Approval No. 14149, dated 2 September 2014.
82	NA	Section D./ 2.(A)(b)(14)	72	Correct in text citation	Update to TVOP
83	CU-022 (GP)	Section D./ 2.(A)(b)(15)	72	Add Boiler #45 startup, shutdown, and maintenance time limits	Plan Approval 15247
84	CU-022 (GP)	Section D./ 2.(A)(c)(2)	72	Add CO, PM, and ammonia testing requirement	Plan Approval 14149
85	NA	Section D./ 2.(A)(d)(2)	72	Correct in text citation	Update to TVOP
86	Group 01	Section D./ 2.(A)(d)(4)	72	Add Group 01 NOx and O2 CEMS requirement	RACT 2 Plan Approval
87	Group 01	Section D./ 2.(A)(d)(8)	73	Add citation to fuel monitoring limit	Additional reference in plan approval 15271
88	Group 01	Section D./ 2.(A)(e)(1)	74	Modify Fuel Recordkeeping requirements	CEMS for H2S used for No. 3 Boilerhouse
89	Group 01	Section D./ 2.(A)(e)(5)	75	Add CEMs requirement and CO stack check requirement for Group 01, update condition numbers	Plan Approval No. 16-000264/8
90	CU-025 (PB)	Section D./2.(B)(a - d)	76 - 77	Add requirements for new source Boiler No. 1 to Boilers group	Boiler No. 1 installed according to AMS Installation Permit No. 11276, dated 6 February 2012.
91	Group 02	Section D./3	77	Add CU-140 to process heater group	Not Applicable

Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
92	Group 01	Section D./3.(a)(3)	77	Add emission limits for CU-009	Plan Approval 15253, IP16000142
93	CU-012	Section D./3.(a)(4)	77	Add emissions limit for CU-012	Plan Approval 15253
94	CU-010/011	Section D./3.(a)(5)	78	Add NOx emission limits, update condition numbers	Plan Approval IP16000264
95	CU-137/138	Section D./3.(a)(7)	78 - 79	Add NOx, CO, VOC, SO2, PM emission limits for CU-137/138	Plan Approval 15271
96	CU-017	Section D./3.(a)(8)	79 - 80	Updated NOx short term and temporary emission limits, update condition numbers	Not Applicable
97	CU-017	Section D./3.(a)(8)(viii-x)	80	Add VOC emissions, update condition numbers	Plan Approval 06050
98	Group 02	Section D./3.(a)(10-21)	80-85	Add NOx, CO, SO2, PM, VOC, GHG, Heat input limits, update condition number for CU-129,016,101,102,118,123,124,125,126,127,128,140	AMS Plan Approval 12195, 15253
99	Group 02	Section D./3.(a)(22)	86	Update condition number	Not Applicable
100	CU-014 GP	Table D.3.a.1	86 - 87	References added to NOx limitation column	Not Applicable
101	CU-017 GP	Table D.3.a.1	87	Add source and limitations to table	Not Applicable
102	CU-016GP, 109BP, 111BP, 118BP, 123PB, 124 PB, 126 PB	Table D.3.a.1	86	NOx limitations changes	Not Applicable
103	CU -140 BP	Table D.3.a.1	87	Add source and limitations to table	Not Applicable
104	NA	Table D.3.a.1	87	Changed Plan approval reference and date (j)	Plan Approval 12195
105	NA	Table D.3.a.1	87	Add plan approval references o, p ,q	Plan Approvals 16000264 and 15253
106	Group 02	Section D./3.(b)(1)(i)	88	Add annual combustion tuning requirement	AMS RACT Plan Approval 2/9/16
107	CU-016, 102, 126	Table D.3.b.1	88 - 90	Add Ultra Low NOx Burner under equipment requirements	Not Applicable
108	CU-017	Table D.3.b.1	88 - 90	Changed equipment requirements from Low NOx Burner to Ultra Low NOx Burner	Not Applicable
109	CU-118, 123, 124, 125	Table D.3.b.1	88 - 90	Add Low NOx Burner under equipment requirements	Not Applicable
110	CU 137, 138	Table D.3.b.1	88 - 90	Add Annual Tune-up or Adjustment under maintenance requirements	Not Applicable
111	CU-126	Table D.3.b.1	88 - 90	Change Heat Input Cap from 72.2 to 87.3	Not Applicable
112	CU-127	Table D.3.b.1	88 - 90	Change Heat Input Cap from 49.9 to 64.2	Not Applicable
113	CU-128	Table D.3.b.1	88 - 90	Change Heat Input Cap from 43 to 61.2	Not Applicable
114	CU-129	Table D.3.b.1	88 - 90	Change Heat Input Cap from 49.5 to 60.0	Not Applicable
115	CU-140	Table D.3.b.1	88 - 90	Add source and requirements to table	Not Applicable
116	NA	Table D.3.b.1	88 - 90	Add plan approval references l, m, n, o	Plan approvals 12195, 06050A, 15253, RACT 2/9/16
117	CU-010/011	Section D./3.(b)(3)(ii)	90	Update in text citation	Not Applicable
118	NA	Section D./3.(b)(9)(vii)	91	Add condition number	Not Applicable
119	NA	Section D./3.(b)(10)	92	Add vent emissions to flare and TOC emissions reduction requirements	40 CFR 63.1566a
120	CU-009, 012, 137, 138, 140	Section D./3.(b)(10-14)	92	Add firing duty for hears	Plan approvals 15271 and 15253
121	CU-016, 101, 126, 127, 128, 129	Section D./3.(b)(15)	92	Add daily monitoring requirements for heaters	Plan Approval 12195
122	NA	Section D./3.(c)(1)	92	Update in text citation number	Not Applicable

Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
123	CU-009/010/011/137/138\140	Section D./3.(c)(5-6, 8)	93	Add NOx and CO emissions test requirement	AMS IP16000142 and AMS Plan Approval 15271
124	Group 02	Section D./3.(c)(7)	93	Add NOx stack test requirement	RACT II, 25 Pa. 129.100(a)(4)
125	CU-009	Section D./3.(d)(1)	94	Add source to table under GP Fuel Mix Drum	Not Applicable
126	CU-009	Section D./3.(d)(1)	94	Remove source from H2S CEM at 1332 H2 Heater (was individually monitored)	Not Applicable
127	CU-137, 138, 140	Section D./3.(d)(1)	95	Add H2S CEM at Unit 870 Heaters and sources at this location	Not Applicable
128	NA	Section D./3.(d)(1)	95	Add referenced Plan Approvals	Plan approval 05214 and 15253
129	CU-129	Section D./3.(d)(3)	95	Include information on the PEMS parameter to be measured.	Extra information
130	CU-009, 012, 118, 123, 124, 125, 140	Section D./3.(d)(9)	96	Add NOx and CO emissions monitoring and records	Plan approval 15253
131	CU-012, 013, 016, 017, 102, 126	Section D./3.(d)(10)	96	Add requirement for the listed heaters to Use a CEMS to comply with NOx limits	Plan Approval 12195 and Plan Approval 16000264
132	NA	Section D./3.(e)	96	Add citations for new recordkeeping requirements	RACT I and II Plan Approvals
133	Group 02	Section D./3.(e)(8-9)	98	Add RACT recordkeeping requirements	RACT Plan Approval
134	Group 02	Section D./3.(f)(4)(v)	100	Updated condition number	Not Applicable
135	Group 03	Section D./4.(a)	100	Remove P646 from group	Not Applicable
136	Group 03	Section D./4.(a)	100	Add CD-104 to group	Moving CD-104 from Source Group 04 to Source Group 03
137	Group 03	Section D./4.(a)	100	Updated condition numbers and added "For Sources P-117, P-118, P-119, P-642, P-643, P-646" and "South yard, South Flare" headings	Not Applicable
138	Group 03	Section D./4.(a)(2)	100 - 101	Add H2S mg/dscf unit for fuel gas limit with citation	AMS Plan Approvals IP18000260 and IP18000263
139	Group 03	Section D./4.(a)(3)	101	Move emission limit for CD-104 (LPG Flare) from Group 04 to Group 03.	Moving CD-104 from Source Group 04 to Source Group 03
140	Group 03	Section D./4.(b)	101	Updated section heading	Not Applicable
141	Group 03	Section D./4.(b)(2)	101	Changes flare operation conformance from it's design to manufacturer specifications and good practice, updated condition number	AMS Plan Approval 15271
142	Group 03	Section D./4.(b)(10)	102	Input Subpart Ja requirements for all listed flares, except CD-104 (LPG Flare)	AMS Plan Approvals IP18000260 and IP18000263
143	Group 03	Section D./4.(b)(11-21)	102 - 115	Input Subpart CC requirements for all flares, except CD-104 (LPG Flare)	AMS Plan Approvals IP18000260 and IP18000263
144	P-643 (PB) CD112	Section D./4.(b)(22-26)	115-117	Input additional requirements for South Yard South Flare	AMS Plan Approval 15271
145	CD-104 (PB)	Section D./4(b)(27-28)	117	Move work practice standards affecting CD-104 (LPG Flare) from Group 04 to Group 03.	Moving CD-104 from Source Group 04 to Source Group 03
146	Group 03	Section D./4.(d)(1-3)	118	Add AMS Plan Approval references	AMS Plan Approval 15271
147	Group 03	Section D./4.(d)	119	Remove Condition D.(4)(d)(8) (referring to Flare AMP section)	Flare AMP section of Title V is to be removed.
148	Group 03	Section D./4.(d)(7-13)	120 - 128	Input Subpart Ja monitoring requirements for all flares, except CD-104 (LPG Flare)	AMS Plan Approvals IP18000260 and IP18000263
149	Group 03	Section D./4.(d)(14-22)	128 - 137	Input Subpart CC monitoring requirements for all flares, except CD-104 (LPG Flare)	AMS Plan Approvals IP18000260 and IP18000263
150	P-643 (PB) CD112	Section D./4.(d)(23)	137	Input requirement for South Yard South Flare	AMS Plan Approval 15271
151	CD-104 (PB)	Section D./4.(d)(24)	137 - 138	Add information regarding Alternative Monitoring Protocol for CD-104 (LPG Flare).	Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010
152	CD-104 (PB)	Section D./4.(d)(25-30)	138 - 146	Input Subpart Ja requirement for CD-104 (LPG Flare).	AMS Plan Approvals IP18000260 and IP18000263

Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
153	CD-104 (PB)	Section D./4.(d)(31)	146	Add sampling requirement from Alternative Monitoring Protocol for CD-104 (LPG Flare).	Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010
154	Group 03	Section D./4.(e)	146	Add "For Sources P-117, P-118, P-119, P-642, P-643, P-646" heading	Not Applicable
155	Group 03	Section D./4.(e)(5)	147	Input requirement for all flares, except CD-104 (LPG Flare)	AMS Plan Approvals IP18000260 and IP18000263
156	P-643 (PB) CD112	Section D./4.(e)(6-9)	147	Input recordkeeping requirements for South Yard South Flare	AMS Plan Approval 15271
157	Group 03	Section D./4.(f)	147	Add "For Sources P-117, P-118, P-119, P-642, P-643, P-646" heading	Not Applicable
158	Group 03	Section D./4.(f)(2)(vi)	148	Update facility name to PES	Name change to PES
159	Group 03	Section D./4.(f)(5)	149	Add reporting requirement for all flares, except CD-104 (LPG Flare)	AMS Plan Approvals IP18000260 and IP18000263
160	P-643 (PB) CD112	Section D./4.(f)(6-8)	149	Input reporting requirements for South Yard South Flare	AMS Plan Approval 15271
161	CD-104 (PB)	Section D./4.(f)(9)	149 - 150	Add reporting requirement from Alternative Monitoring Protocol for CD-104 (LPG Flare).	Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010
162	P-637, P-644	Section D./5.	150	Add Butane Railcar Loading/Unloading (P-637), and Crude Railcar Loading (P-644) as sources	New Sources
163	CD-104 (PB)	Section D./5.	150	Remove CD-104 (LPG Flare) as a Group 04 source, and all applicable requirements from Section 5. Group 04.	Moving CD-104 from Source Group 04 to Source Group 03
164	P-637 (GP)	Section D./5.(a)(1)	150	Add VOC emissions limit for railcar butane loading / unloading	AMS Installation Permit No.: 14045
165	Group 04	Section D./5.(a)(2)	150	Add VOC emissions limit for crude railcar loading/unloading facility	AMS Installation Permit No.: 13020B
166	Group 04	Section D./5.(b)(3-7)	150 - 151	Input butane loading/unloading work practice standards from AMS Installation Permit No. 14045.	AMS Installation Permit No.: 14045
167	Group 04	Section D./5.(b)(8-10)	151	Input crude loading/unloading work practice standards from AMS Installation Permit No. 13020B.	AMS Installation Permit No.: 13020B
168	Group 04	Section D./5.(d)(4-5)	152	Input butane loading/unloading monitoring standards from AMS Installation Permit No. 14045.	AMS Installation Permit No.: 14045
169	Group 04	Section D./5.(d)(6)	152	Input crude loading/unloading monitoring standards from AMS Installation Permit No. 13020B.	AMS Installation Permit No.: 13020B
170	Group 04	Section D./5.(f)(2)	153	Input crude loading/unloading reporting requirement from AMS Installation Permit No. 13020B.	AMS Installation Permit No.: 13020B
171	Group 05	Section D./6.(a)(1)	153 - 154	Add clarification of existing text, alternate requirement for SO2 emissions	40 CFR 63.1569(a)(2)
172	Group 05	Section D./6.(a)(2)	154	Add requirement regarding purge gasses during startup and shutdown, updated condition numbers	40 CFR 63.1569(a)(1)(i)
173	Group 05	Section D./6.(e)(5)	156	Updated Section reference numbers	Administrative Changes
174	Group 06	Section D./7	157 - 158	Update LDAR summary table and include 40 CFR 63 CC citation	Administrative Changes
175	Group 06	Section D./7.(a)(3)(i-ii)	162	Add references	40 CFR 63.648(j)(1), 40 CFR 63.648(j)(2)(i)
176	Group 10	Section D./11.(a)	201	Input Subpart CC requirements for process vents, update condition numbers	40 CFR 63.643(c)(1)
177	Group 10	Section D./11.(c-d)	201 - 202	Add recordkeeping and reporting requirements for process vents	40 CFR 63.643(c), 63.655(i)(12), 63.655(g)(13) (i-iv)
178	Group 13A	Section D./12.	202	Include Reactivated Tanks	Reactivation of Tanks P026 and P163
179	Group 13B	Section D./13.	202	Include Reactivated Tanks	Reactivation of Tanks P510, P538, P594, P603, and P604
180	Group 13B	Section D./13.	203 - 205	Add Group 13B Work Practice, Monitoring, Recordkeeping, and Reporting Requirements	40 CFR 63.1063
181	Group 14	Section D./14.(a)(10)	206 - 207	Add Subpart Kb applicability statement	40 CFR 60 Subpart Kb
182	Group 14B	Section D./16	210 - 216	Include Reactivated Tank, add Work Practice, Monitoring,Recordkeeping, and Reporting Requirements	40 CFR 63.1063 and Reactivation of Tank P590
183	Group 17	Section D./20	219	Change "Flare for P130" to "Thermal Oxidizer for P130"	Correcting equipment classification
184	Group 17	Section D./20.(b)(6-8)	219	Add work practice standards for the Marine Loading Equipment	RACT Plan Approval
185	FCCU 868	Section D./21.(a)	221 - 222	Add FCCU 868 emissions limits	AMS Plan Approval IP16-000225
186	1232 FCCU	Section D./21.(a)	224	Add 1232 CO and Inorganic HAP emission requirements for startup and shutdown	40 CFR 63.1565

Revision #	Source ID	Section/Condition #	Permit Page No.	Proposed Change	Reason for Change and additional notes (if applicable)
187	1232 FCCU	Section D./21.(b)	224	Add 1232 FCCU work practice requirements	RACT Plan Approval
188	FCCU 868	Section D./21.(b, c, d, e)	224 - 230	Add FCCU 868 work practice, testing, monitoring and recordkeeping requirements	IP16-000225
189	Group 18	Section D./21.(c)(5)	227	Add FCCU PM/Ni 5 year performance testing requirements	40 CFR Subpart UUU (40 CFR 63.1571(a)(5))
190	Group 18	Section D. /21.(f)(2)	231	Add compliance demonstration requirements	40 CFR 63.1564
191	Group 20	Section D./23.(b)(3)	232	Update 869 Alkylation Unit barrel throughput	IP17-000086
192	Group 21	Section D./24.	235 - 236	Remove Group 21 - Hydrogen purification equipment	This source no longer operates.
193	Group 20 and 25	Section D./25.	238 - 240	Move Sewer Line conditions for 869 Alkylation Unit into wastewater group	Administrative Changes
194	Group 20 & 25A	Section D./27.(a)(8)	248	Move QQQ requirements to Refining Wastewater Group and include Unit 870	Administrative Changes
195	Group 25B	Section D./28.(a)(6)(v)	261 - 262	Include PES's current compliance method for SOCMI wastewater	Extra information
196	Group 27	Section D./30.(a)(4)	271	Add EM-002, EM-003, FP-020 and FP-021 to condition.	Two new fire pumps are subject to D./27./(a)(4)
197	Group 27	Section D./30.(a)(5)&(6)	271	Include Emissions Restrictions from new Emergency Flood Pump RICEs	Two new Emercency Flood Control RICEs approved in IP18-000373 & 374
198	Group 27	Section D./30.(b)(4)	272	Add FP-020 and FP-021 to condition.	Two new fire pumps are subject to D./27./(b)(4)
199	EM002 & EM003	Section D./30.(e)	273 - 275	Additional requirements from installation permit	Two new Emercency Flood Control RICEs approved in IP18-000373 & 374
200	Group 27	Section D./30.(b)(17)(ii)	273 - 274	Add FP-020 and FP-021 to condition.	Two new fire pumps are subject to D./27./(b)(17)(i)
201	Group 29	Section D./32.	279 - 283	Add emissions limitations and work practice standards for Catalytic Reformer Unit (1332) and conditions for Benzene Fenceline Monitoring	New RSR requirements
202	NA	Section G. and H.	283	Remove Sections G. and H.	No longer applicable, Section G is incorportated in Flare Monitoring Plan



Title V Permit V06-016 Renewal Application Package, Volume II

Philadelphia Energy Solutions R&M LLC
Philadelphia, PA

January 2019

Environmental Resources Management
75 Valley Stream Parkway, Suite 200
Malvern, Pennsylvania 19355
(484) 913-0300

www.erm.com

The business of sustainability

Attachment F
Two Versions of the Title V/State Operating Permit No. V06-016 With & Without Tracked Changes

Attachment F1:
Title V/State Operating Permit No. V06-016 With Tracked Changes

City of Philadelphia
Department of Public Health
Air Management Services

Title V/State Operating Permit No. V06-016

Philadelphia Energy Solutions Refining and Marketing LLC

3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: July 18, 2014
Effective Date: July 18, 2014
Amendment Date: September 11, 2015
Expiration Date: July 18, 2019

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City of Philadelphia
Department of Public Health
Air Management Services

Effective Date: July 18, 2014

Expiration Date: July 18, 2019

Amendment Date:

Replaces Permit No. V06-016

Deleted: September 11, 2015

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SECTION A. SOURCE IDENTIFICATION

In accordance with the provisions of the Pennsylvania Code Title 25, Philadelphia Code Title III, and Air Management Regulation (AMR) XIII, the Permittee (Permittee) identified below is authorized by Philadelphia Air Management Services (AMS) to operate the air emission source(s) listed in Table A-1. This facility is subject to all terms and conditions specified in this permit. Nothing in this permit relieves the Permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

Facility:	Philadelphia Energy Solutions Refining and Marketing LLC
Owner:	Philadelphia Energy Solutions Refining and Marketing LLC
Location:	3144 Passyunk Avenue, Philadelphia, PA 19145
Mailing Address:	Same
SIC Code(s):	2911
Plant ID:	01501
Facility Contact:	Janet C. Ferris
Phone:	(215) 339-7146
Permit Contact:	Janet C. Ferris
Phone:	(215) 339-7146
Responsible Official:	Mark Brandon
Title:	Vice President and General Manager

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Edward Wiener, Chief of Source Registration Date

TABLE A1-FACILITY INVENTORY LIST

ID Group	Source Name	Capacity	Fuel/Material^	Construction Date
Group 01 – Boilers and Heater				
CU-018 (GP)	#37 Boiler	495 MM Btu/hr	Refinery Gas	1952
CU-020 (GP)	#39 Boiler	495 MM Btu/hr	Refinery Gas	1952
CU-021 (GP)	#40 Boiler	660 MM Btu/hr	Refinery Gas	1954
CU-022 (GP)	#45 Boiler	350 MM Btu/hr	Refinery Gas	2014
CU-025 (PB)	Boiler No. 1	5.23 MM Btu/hr	No. 2/Natural Gas	1982
Group 02 – Process Heaters				
CU-004 (GP)	Unit 1232 B-104 Heater	70 MM Btu/hr	Refinery Gas	1954
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	45 MM Btu/hr	Refinery Gas	1958
CU-006 (GP)	Unit 1332 H-602 Heater	49 MM Btu/hr	Refinery Gas	1958
CU-007 (GP)	Unit 1332 H-601 Heater	48 MM Btu/hr	Refinery Gas	1958
CU-008 (GP)	Unit 1332 H-600 Heater (IDLED)	21.3 MM Btu/hr	Refinery Gas	1958
CU-009 (GP)	Unit 1332 H-2 Heater	60 MM Btu/hr	Refinery Gas	2005
CU-010 (GP)	Unit 1332 H-401 Heater	233 MM Btu/hr	Refinery Gas	1958
CU-011 (GP)	Unit 1332 H-400 Heater	186 MM Btu/hr	Refinery Gas	1958
CU-012 (GP)	Unit 1332 H-3 Heater	43 MM Btu/hr	Refinery Gas	1958
CU-013 (GP)	Unit 137 F-1 Heater	415 MM Btu/hr	Refinery Gas	1952
CU-014 (GP)	Unit 137 F-2 Heater	155 MM Btu/hr	Refinery Gas	1952
CU-015 (GP)	Unit 137 F-3 Heater	60 MM Btu/hr	Refinery Gas	1974
CU-016 (GP)	Unit 231 B-101 Heater	104.5 MM Btu/hr	Refinery Gas	1957
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	260 MM Btu/hr	Refinery Gas	1973
CU-101 (PB)	Unit 210 H-101 Heater	192 MMBTU/hr	Refinery Gas	Dec-64
CU-102 (PB)	Unit 210 H-201 Heater	254 MMBTU/hr	Refinery Gas	May-73
CU-103 (PB)	Unit 210 13H-1 Heater	235.4 MMBTU/hr	Refinery Gas	May-73

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CU-108 (PB)	Unit 860 2H-1 Heater (IDLED)	49.0 MMBTU/hr	Refinery Gas	Mar-67
CU-109 (PB)	Unit 860 2H-2 Heater	69.8 MMBTU/hr	Refinery Gas	Mar-67
CU-110 (PB)	Unit 860 2H-3 Heater	174.7 MMBTU/hr	Refinery Gas	Mar-67
CU-111 (PB)	Unit 860 2H-4 Heater	99.4 MMBTU/hr	Refinery Gas	Mar-67
CU-112 (PB)	Unit 860 2H-5 Heater	155 MMBTU/hr	Refinery Gas	Mar-67
CU-113 (PB)	Unit 860 2H-6 Heater (IDLED)	36.7 MMBTU/hr	Refinery Gas	Mar-67
CU-114 (PB)	Unit 860 2H-7 Heater	59 MMBTU/hr	Refinery Gas	Mar-67
CU-115 (PB)	Unit 860 2H-8 Heater	49.6 MMBTU/hr	Refinery Gas	Mar-67
CU-118 (PB)	Unit 864 PH-1 Heater	80 MMBTU/hr	Refinery Gas	Aug-71
CU-123 (PB)	Unit 864 PH-7 Heater	45.5 MMBTU/hr	Refinery Gas	Aug-71
CU-124 (PB)	Unit 864 PH-11 Heater	74 MMBTU/hr	Refinery Gas	Aug-71
CU-125 (PB)	Unit 864 PH-12 Heater	85.1 MMBTU/hr	Refinery Gas	Aug-71
CU-126 (PB)	Unit 865 11H-1 Heater	87.3 MMBTU/hr	Refinery Gas	May-73
CU-127 (PB)	Unit 86511H-2 Heater	64.2 MMBTU/hr	Refinery Gas	May-73
CU-128 (PB)	Unit 866 12H-1 Heater	61.2 MMBTU/hr	Refinery Gas	May-73
CU-129 (PB)	Unit 868 8H-101 Heater Inc.	60.0 MMBTU/hr	Refinery Gas / Natural Gas	7/2003
CU-137 (PB)	Unit 870 (Tier II Low Sulfur Gas Hydrodesulfurization Plant), H1 Heater	97 MMBTU/hr	Refinery Gas / Natural Gas	2004
CU-138 (PB)	Unit 870 (Tier II Low Sulfur Gas Hydrodesulfurization Plant), H2 Heater	53 MMBTU/hr	Refinery Gas / Natural Gas	2004
CU-139	Unit 859 1H-1 Heater	98 MMBTU/hr	Refinery Gas / Natural Gas	2009
CU-140 (PB)	Unit 870 (Low Sulfur Gas Hydrodesulfurization Plant), H3 Heater	91 MMBTU/hr	Refinery Gas / Natural Gas	2018

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Group 03 - Flares

P-117 (GP) - CD012	1231 Flare – Unit 1232		RFG	1946
P-118 (GP) – CD013	1232 Flare – Unit 1232		RFG	Replaced 2005

P-119 (GP) - CD014	433 Flare		RFG	1972
P-642 (PB) CD111	Flare, North Flare in South Yard		RFG	Replaced 2004
P-643 (PB) CD112	Flare, South Flare in South Yard ~~(currently idled)~~		RFG	1973
~~P-646 (PB)~~	~~Flares (2), Emergency Sulfur Plant~~ To Be Removed		~~RFG~~	~~Replaced 2005~~
CD-104	LPG Flare	Used by P-638		

Group 04 - Loading Facilities and Control Equipment

P-129 (GP)	1733 Tank Truck Loading – Cumene			
P-183 (GP)	Unit 1732 benzene railcar unloading station			
P-637 (GP)	Butane Railcar Loading/Unloading			
P-638 (PB)	Propane Loading Station			
P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities			

Group 05 – Sulfur Recovery Units

P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	100 tons/day		
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	100 tons/day		
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Used by P-659 and P-660		
CD-109	Tail Gas Incinerator (TGU-1)	Used by P-659 and P-660		
CD-114	TGU 2 Incinerator			

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~~CD-113~~	~~Backup Tail Gas Unit (BUTGU)~~ REMOVED	~~Used by P-659 and P-660~~		~~10/2002~~

Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV

[40 CFR 60.480, 60.590, & 63.648; 25 Pa Code 129.58; AMR V Section XIII A., 40 CFR 61 Subpart J]

Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components Subject to 40 CFR 63 Subpart H

[40 CFR 63.160-182; 25 Pa Code 129.571; AMR V Section XIII A & B.]

Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[25 Pa Code 129.58, Case-by-case RACT, 25 Pa Code §§129.91-129.95; AMR V Section XIII A.]

Group 09 – Cooling Towers

P-125 (GP)	Cooling Tower 1232 - Unit 1232	50,000 gallons per minute		
P-126 (GP)	Cooling Tower 433 - Unit 433			
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733			
P-128 (GP)	Cooling Tower 137 – Unit 137			
P-632 (PB)	Cooling Tower, Unit 868	1,110,000		
P-633 (PB)	Cooling Tower, Unit 210	1,566,000		
P-634 (PB)	Cooling Tower, Unit 864	1,080,000		
P-635 (PB)	Cooling Tower, Complex	3,158,000		

Group 10 – Miscellaneous Process Vents (Group 1) subject to 40 CFR 63 Subparts G and CC

P-184 (GP)	Four vents [one goes to CD-006, and three go to a process heater (CD-006) or to CD-012 or CD-013]	1.Fuel gas from E-401 absorber at Unit 231: controlled to a flare per 63.643(a)(1) 2. Off gas from sour water stripper 8733: controlled to a flare per		

		63.643(a)(1) 3.Off gas from Merox unit at Unit 433: controlled via heater or flare 4. Vacuum tower off gas at Unit 137 via heater		
CD-006	F-1 Heater	Used by P-184		
P-181	Six vents (go to CD-012 or CD-013)	1. Steam use in UE6, UE12, UE24 2. P004 3. Part of sources P-123 and P-114 4. Extractor Tower PCV, Extractor receiver vent, Water receiver vent, Solvent Regen Ejector vent, Deprop overhead vent, Benzene recycle tower vent 5. Part of source P-115		
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	Vents at 210 Unit A/B Vacuum Tower		

Group 13A – Tanks Subject to 40 CFR 63 Subpart G

P-001 (GP)	T-1116, EFR	>40M Gal	Gasoline Components	1953
P-005 (GP)	T-217, IFR	>40M Gal	Benzene	1991
P-017 (GP)	T-790, IFR	>40M Gal	Benzene	1962
P-018 (GP)	T-791, IFR	>40M Gal	Benzene	1962
P-021 (GP)	T-795, IFR	>40M Gal	Benzene	1962
P-022 (GP)	T-798, IFR	>40M Gal	Benzene	1964
P-023 (GP)	T-799, IFR	>40M Gal	Benzene	1964
P-024 (GP)	T-1117, EFR	>40M Gal	Udex	1953
P-025 (GP)	T-1205, IFR	>40M Gal	Benzene	1972
P-026 (GP)	T-1208, IFR	>40M Gal	Benzene	1960
P-029 (GP)	T-1214, IFR	>40M Gal	Benzene	1961
P-163 (GP)	T-1209, IFR	>40M Gal	Benzene	1960

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Deleted: Clay Tower BTX

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Deleted: Benzene/Toluene

Deleted: Crude Oil

P-523 (PB)	Tank # 121, IFR	>40M Gal	Cumene	1940

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Group 13B - Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC

P-012 (GP)	T-272, IFR	>40M Gal	Recovered Oil	1971
P-015 (GP)	T-285, IFR	>40M Gal	Gasoline Components	1971
P-016 (GP)	T-286, IFR	>40M Gal	Gasoline Components	1948
P-034 (GP)	T-276, IFR	>40M Gal	Gasoline Components	1945
P-510 (PB)	T-36, IFR	>40M Gal	Gasoline Components	
P-538 (PB)	T-172	>40M Gal	Gasoline Components	
P-545 (PB)	Tank #190, IFR	>40M Gal	Reformer Feed	1950
P-547 (PB)	Tank #204, IFR	>40M Gal	Dewatering	1931
P-594 (PB)	Tank #847, IFR	>40M Gal	Crude Oil	1954
P-603 (PB)	Tank #885, IFR	>40M Gal	Crude Oil	1974
P-604 (PB)	Tank #886, IFR	>40M Gal	Crude Oil	1974

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Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb

P-009 (GP)	T-250, IFR	>40M Gal	Distillate	1988
P-010 (GP)	T-251, IFR	>40M Gal	Distillate	1993
P-134 (GP)	T-270, IFR	>40M Gal	Recovered Oil	1992
P-135 (GP)	T-767, IFR	>40M Gal	Recovered Oil	1992
P-136 (GP) (temp inactive)	T-768, IFR	>40M Gal	Recovered Oil	1994
P-137 (GP)	T-1101, IFR	>40M Gal	Recovered Oil	2011
P-159 (GP)	T-1086	>40M Gal	Spent caustic	1954
P-160 (GP)	T-1087	>40M Gal	Spent caustic	1954
P-174 (GP)	T-1007	>40M Gal	RCRA CC waste	1990
P-501 (PB)	Tank # 26, IFR	>40M Gal	Ethanol	1995

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P-511 (PB)	Tank # 37, IFR	>40M Gal	Gasoline Components	1994

Group 14A – External Floating Roof Tanks Subject to only Local and State Regulations

Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC

P-502 (PB)	Tank # 27, EFR	>40M Gal	Gasoline Components	1976
P-503 (PB)	Tank # 28, EFR	>40M Gal	Alkylate	1958
P-504 (PB)	Tank # 29, EFR	>40M Gal	Reformate	1955
P-507 (PB)	Tank # 33, EFR	>40M Gal	Gasoline Components	1956
P-508 (PB)	Tank # 34, EFR	>40M Gal	Gasoline Components	1954
P-509 (PB)	Tank # 35, EFR	>40M Gal	Gasoline Components	1954
P-512 (PB)	Tank # 38, EFR	>40M Gal	Gasoline Components	1959
P-513 (PB)	Tank # 39, EFR	>40M Gal	Gasoline Components	1955
P-514 (PB)	Tank # 40, EFR	>40M Gal	Gasoline Components	1982
P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	>40M Gal	Recovered Oil	1981
P-525 (PB)	Tank # 126, EFR	>40M Gal	Reformer Feed	1955
P-526 (PB)	Tank # 128, EFR	>40M Gal	Reformate	1959
P-527 (PB)	Tank # 129, EFR	>40M Gal	Reformate	1971
P-537 (PB)	Tank # 162, EFR	>40M Gal	Gasoline Components	1908
P-540 (PB)	Tank # 176, EFR	>40M Gal	Reformer Feed	1967
P-541 (PB)	Tank # 178, EFR	>40M Gal	Gasoline Blending Components	1974
P-542 (PB)	Tank #179, EFR	>40M Gal	Reformer Feed	1974
P-546 (PB)	Tank #191, EFR	>40M Gal	Recovered Oil	1958
P-579 (PB)	Tank #826, EFR	>40M Gal	Crude Oil	2002
P-587 (PB)	Tank #840, EFR	>40M Gal	Crude Oil	1953
P-588 (PB)	Tank #841, EFR	>40M Gal	Crude Oil	1953
P-590 (PB)	Tank #843, EFR	>40M Gal	Crude Oil	1954
P-594 (PB)	Tank #847, EFR	>40M Gal	Crude Oil	1954

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P-595 (PB)	Tank #848, EFR	>40M Gal	Distillate Components	
P-599 (PB)	Tank #881, EFR	>40M Gal	Crude Oil	1958
P-600 (PB)	Tank #882, EFR	>40M Gal	Crude Oil	1959
P-601 (PB)	Tank #883, EFR	>40M Gal	Crude Oil	1961
P-602 (PB)	Tank #884, EFR	>40M Gal	Crude Oil	1974
P-603 (PB)	Tank #885, EFR	>40M Gal	Crude Oil	1974
P-604 (PB)	Tank #886, EFR	>40M Gal	Crude Oil	1974

Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent)

P-006 (GP)	T-228, EFR		Stormwater/Process Water	1991
P-155 (GP)	T-844	>40M Gal	#2 sep. water	1976
P-162 (GP)	T-1136	>40M Gal	#4 sep. water	1976
P-624 (PB)	Tank # 7300, EFR	NA	Stormwater/Process Water	1992
P-627 (PB)	Tank #7308, EFR	NA	Stormwater/Process Water	1972

Group 15A – Group 2 Storage Tanks

P-002 (GP)	T-1216, IFR	>40M Gal	Cumene	1975
P-003 (GP)	T-1217, IFR	>40M Gal	Cumene	1961
P-019 (GP)	T-792, Fixed Roof	>40M Gal	Cumene	1962
P-020 (GP)	T-793, Fixed Roof	>40M Gal	Cumene	1962
P-027 (GP)	T-1211, Fixed Roof	>40M Gal	Cumene	1960
P-028 (GP)	T-1213, Fixed Roof	>40M Gal	Cumene	1960
P-030 (GP)	T-1215, Fixed Roof	>40M Gal	Cumene	1961
P-031 (GP)	T-1219, Fixed Roof	>40M Gal	Cumene	1961
P-032 (GP)	T-273, Fixed Roof	>40M Gal	Cat Charge Stock	1941
P-035 (GP)	T-280, Fixed Roof	>40M Gal	Cat Charge Stock	1947
P-036 (GP)	T-282, Fixed Roof	>40M Gal	Low Sulfur Diesel	1947
P-037 (GP)	T-284, Fixed Roof	>40M Gal	Low Sulfur Diesel	1948
P-039 (GP)	T-494, Fixed Roof	>40M Gal	Cutting Oil	1965
P-144 (GP)	T-219	>40M Gal	Cutter stock	1965
P-146 (GP)	T-225	>40M Gal	Non-Commercial # 6 oil	1973

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P-147 (GP)	T-227	>40M Gal	Non-Commercial # 6 oil	1954
P-150 (GP)	T-281	>40M Gal	Cat charge stock	1946
P-151 (GP)	T-676	>40M Gal	Non-Commercial # 6 oil	1953
P-153 (GP)	T-794	>40M Gal	Wet glycol solvent	1990
P-154 (GP)	T-796	16.8M Gal	Glycol solvent	1962
P-157 (GP)	T-1038	>40M Gal	Non-Commercial # 6 oil	1972
P-165 (GP)	T-1212	>40M Gal	Cumene	1960
P-166 (GP)	T-1218	>40M Gal	Cumene	1960
P-167 (GP)	T-1220	>40M Gal	Cumene	1963
P-175 (GP)	T-3000	500 gal	Lube Oil	NA
P-176 (GP)	T-3001	500 gal	Lube Oil	
P-177 (GP)	T-3002	1000 gal	Lube Oil	
P-178 (GP)	T-3004	1000 gal	Lube Oil	
P-179 (GP)	T-3005	500 gal	Lube Oil	
P-515 (PB)	Tank # 42, Cone Roof	>40M Gal	Diesel	2013
P-516 (PB)	Tank # 43, Cone Roof	>40M Gal	Jet/Kero	1958
P-518 (PB)	Tank # 83, Cone Roof	>40M Gal	Super K-1	1950
P-519 (PB)	Tank # 84, Cone Roof	>40M Gal	Jet/Kero	1950
P-520 (PB)	Tank # 85, Cone Roof	>40M Gal	LS Diesel	1955
P-529 (PB)	Tank # 144, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-530 (PB)	Tank # 145, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-534 (PB)	Tank # 151, EFR	>40M Gal	Cracking Stocks	1979
P-535 (PB)	Tank # 152, Cone Roof	>40M Gal	Cracking Stocks	1959
P-551 (PB)	Tank #253, Cone Roof	>40M Gal	Heating Oil	1923
P-563 (PB)	Tank #663, Cone Roof	>40M Gal	Asphalt/Cracking Stocks	1959
P-565 (PB)	Tank #666, Cone Roof	>40M Gal	Cracking Stocks	1954
P-567 (PB)	Tank #668, Cone Roof	>40M Gal	Wash Oil	1957
P-571 (PB)	Tank #672, Cone Roof	>40M Gal	Cracking Stocks (Light Cycle Oil)	1957
P-574 (PB)	Tank #821, IFR	>40M Gal	Cracking Stocks	1941
P-575 (PB)	Tank #822, IFR	>40M Gal	Dewatering	1941
P-576 (PB)	Tank #823, Cone Roof	>40M Gal	Cracking Stocks (Low Sulfur Diesel)	1941
P-577 (PB)	Tank #824, Cone Roof	>40M Gal	Cracking Stocks	1941

P-578 (PB)	Tank #825, Cone Roof	>40M Gal	Heating Oil	1954
P-580 (PB)	Tank #831, EFR	>40M Gal	Jet/Kero	1943
P-582 (PB)	Tank #833, IFR	>40M Gal	Cracking Stocks	1950
P-584 (PB)	Tank #835, IFR	>40M Gal	Med Distillate	1953
P-585 (PB)	Tank #836, IFR	>40M Gal	Med Distillate	1954
P-623 (PB)	Tank #7275, Open Top	>40M Gal	Wastewater (Stormwater)	1952
P - (433)	Tank #1051, EFR	>40MGal	Spent Potassium Chloride	

Group 15B – Fixed Roof Tanks Subject to Subpart Kb Recordkeeping Requirements

P-158 (GP)	T-1039	>40M Gal	Non-Commercial # 6 oil	1989
P-171 (GP)	T-1004	>40M Gal	RCRA misc waste	1989
P-172 (GP)	T-1005	>40M Gal	RCRA misc waste	1989

Group 17 – Marine Loading Equipment

P-130 (GP)	Barge Loading – Girard Point Wharf			
CD-011	Thermal Oxidizer for P130	Used by P-130		
P-636 (PB)	Marine Barge Loading			

Deleted: Flare

Group 18 – Fluidized Catalytic Cracking Units

P-120 (GP)	FCCU, Unit 1232 Regenerator			1964
CD-004	CO Boiler	580 MMBTU/Hr Used by P-120		
CD-115	1232 SCR	Used by P-120		
CD-116	Wet Gas Scrubber	Used by P-120		
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	47,500 bbl/day on 365 day avg, max 50,000 bbl/any given day		
CD-110	Electrostatic Precipitator	Used by P-661		

Commented [A7]: Sources did not have assigned Source IDs previously. Suggested assignment of CD-115 and CD-116.

Group 19 – Inter-Refinery Pipeline Equipment

P-664 (PB)	Inter-Refinery Pipeline			

Group 20 – Alkylation Unit

P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)			
CD-014	Flare (Unit 433)	Used by P-182		
P-662 (PB)	Alkylation Unit 869			
CD-111 (P-642)	North Flare South Yard	Used by P-662		
CD-112	South Flare South Yard	Used by P-662		

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Group 21 – Hydrogen Purification

P-674 (PB)	H2 Purification (Idle)			

Group 22 – Degreasing Vats

P-108 (GP)	Degreasing Vats		Degreaser	NA
(PB)	Machine/Fab Shop - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(PB)	Machine/Fab Shop - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(PB)	Machine/Fab Shop – Model SK 34.1R	25 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Garage – Model E3000	10 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	2960 gal	Diesel Fuel	

(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	4578 gal	Diesel Fuel	
(GP)	3 Boiler House - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	3 Boiler House - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	I&E Bldg – Model 250 Recycling Parts Washer	20 gal	SK Premium Gold Solvent, MSDS 82655 / 82774	

Group 23 – Butane Isomerization

P-121 (GP)	Butane Isomerization - Unit 331			

Group 25A – Refining Wastewater

P-131 (GP)	4A API Separator – WWT			
CD-002	Carbon Adsorber	Used by P-131		
P-132 (GP)	2B API Separator – WWT			
CD-003	Carbon Adsorber	Used by P-132		
P-639 (PB)	API Separators A&B – Bio Plant			
CD-105	Carbon Adsorption	Used by P-639		
P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC			
CD-010	Carbon Adsorber	Used by P-114		
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant			
CD-106	Carbon Adsorption	Used by P-640		
P-641 (PB)	Bio Plant Sewer System – Refinery			

CD-107	Carbon Adsorption	Used by P-641		
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC			
P-141 (GP)	T-1146, T-1147	Roughing Filters at WWTP	Wastewater	NA
CD-007	Carbon Adsorber	Used by P-141		
P-142 (GP)	T-1142, T-1143	Oxidation Tanks at WWTP	Wastewater	NA

Group 25B – SOCMI Wastewater

P-123	SOCMI Wastewater			
P-115	Refining Wastewater			
P-180 (GP)	Cumene Production Unit 1733			
P-181 (GP)	Benzene Production Unit 1732			

Group 26 – Benzene and Cumene Production

P-180 (GP)	Cumene Production Unit 1733			
P-181 (GP)	Benzene Production Unit 1732			
UV-15	Regenerator Bottoms Process Vent			
CUV-12	DIBP Overhead Receiver Process Vent			
CUV-312	Cumene “C” Tower Receiver Process Vent			

Group 27 – Emergency Generators and Fire Pumps

EM-001 (PB)	Caterpillar (model 3412DITTA) Emergency Generator	896 HP	Diesel	2004
EM-002 (GP)	Flood Control RICE at GP 2nd and J	147 HP	Diesel	2018

EM-003 (GP)	Flood Control RICE at GP point 2-separator	275 HP	Diesel	2018
FP-010	24PEN4 Fire Pump #4	211 Hp	Diesel	2011
FP-011	24P1 Fire Engine (Haenn's Wharf)	210 Hp	Diesel	2012
FP-012	Fire Pump (1st and Wharf #8)	475 bhp	ULSD	
FP-013	24P2 North Fire Pump (Haenn's Wharf)	210 bhp	ULSD	
FP-014	24P3 South Fire Pump (Short Pier)	350	ULSD	
FP-015	24PEN5 Fire Pump (North Yard)	250 bhp	ULSD	
FP-016	24PEN6 Fire Pump (North Yard Wharf)	250 bhp	ULSD	
FP-017	28P-1150A HF Mitigation Water Pump FP-12#1 (Unit 433)	487 bhp	ULSD	
FP-018	28P-1150B HF Mitigation Water Pump FP+12 #2 (Unit 433)	487 bhp	ULSD	
FP-019	Belmont Firehouse Williams Pump (fire pump) affixed to a trailer	750 bhp	ULSD	
FP-020	Butane Terminal Firewater System Pump #1 (JX6H-UFADF0)	460 bhp	ULSD	
FP-021	Butane Terminal Firewater System Pump #2 (JX6H-UFADF0)	460 bhp	ULSD	

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Commented [A9]: Suggested ID#, new source to TVOP from Installation Permit No. 14219-14220

Group 28 – Internal Combustion Engines

IC-002	53P-800C pump	200 bhp	Diesel	
IC-005	FE-5(2) Flood Control Pump Driver	28 bhp	Diesel	

IC-006	Godwin 894572/4 Flood Control Pump Driver	115 bhp	Diesel	
IC-007	B-2623 Flood Control Pump Driver	102 bhp	Diesel	
IC-008	Engine Set 1290 (northside of 8 Sep)	214 bhp	Diesel	
rIC-001	Rental back-up pump (2nd &1st, 3BH sump)	≤ 14 bhp	Diesel	
rIC-002	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-003	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-004	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-005	Rental back-up air compressor (small maintenance air compressors)	≤ 101 bhp	Diesel	
rIC-006	Rental back-up air compressor (small maintenance air compressors)	≤ 101 bhp	Diesel	
rIC-007	Rental back-up pump (WW pump 270 Tk to WWTP)	≤ 144 bhp	Diesel	

Group 29 - Stacks

S-111 (GP)	Used by CU-004, B-104 HTR			
S-112 (GP)	Used by CU-005, H-1 Debutanizer HTR			

S-113 (GP)	Used by CU-006, H-602 HTR			
S-114 (GP)	Used by CU-007, H-601 HTR			
S-115 (GP)	Used by CU-008, H-600 HTR			
S-116 (GP)	Used by CU-009, H-2 HTR			
S-117 (GP)	Used by CU-010, H-401 HTR and CU-011, H-400 HTR	Combined stack that follows NOx SCR.		
S-117A (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-117B (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-117C (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-118A (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-118B (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-118C (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-119 (GP)	Used by CU-012, H-3 HTR			
S-120 (GP)	Used by CU-013, F-1 HTR Used by CU-014, F-2 HTR			
S-122 (GP)	Used by CU-015, F-3 HTR			
S-123A (GP)	Used by CU-016, B-101 HTR			
S-123B (GP)	Used by CU-016, B-101 HTR			
S-123C (GP)	Used by CU-016, B-101 HTR			
S-124 (GP)	Used by CU-017, H-1 Iso Stripper Heater			
S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler			
S-126 (GP)	Used by CU-022, 45 Boiler			
S-127 (PB)	Used by CU-025, Boiler No. 1			

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Used by CU-022, 45 Boiler

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S-131 (GP)	Used by P-131, 4A API Separator Unit – WWT			
S-132 (GP)	Used by P-132, 2B API Separator Unit – WWT			
S-133 (GP)	Used by CD-004 FCCU/CO Boiler			
S-134 (GP)	Used by P-121 Butane Isomerization			
S-138 (GP)	Used by P-125, 1232 Cooling Tower			
S-139 (GP)	Used by P-126, 433 Cooling Tower			
S-140 (GP)	Used by P-127, 490 Cooling Tower			
S-141 (GP)	Used by P-128, 137 Cooling Tower			
S-142 (GP)	Used by P-129, 1733 Loading Rack			
S-143 (GP)	Used by P-130, Barge Loading – Girard Point Wharf			
S-144 (GP)	Used by P-108 Degreasing Vats			
S-145 (GP)	Used by P-109, 40 CFR 60, Subpart GGG Leaks			
S-146 (GP)	Used by P-110, 40 CFR 63, Subpart CC Leaks			
S-147 (GP)	Used by P-111, 40 CFR 63, Subpart H Leaks			
S-148 (GP)	Used by P-112, 40 CFR 63, Subpart J			
S-149 (GP)	Used by P-113, 29 PA 129.58 Equipment Leaks			
S-150 (GP)	Used by P-114, 40 CFR 61, Subpart FF Wastes			

S-151 (GP)	Used by P-115, Miscellaneous Wastewater			
S-153 (GP)	Used by P-117, 1231 Flare			
S-154 (GP)	Used by P-118, 1232 Flare			
S-155 (GP)	Used by P-119, 433 Flare			
S-156 (GP)	Used by P-120, 1232 FCCU			
S-200 (GP)	Used by P-001, T-1116			
S-201 (GP)	Used by P-002, T-1216			
S-202 (GP)	Used by P-003, T-1217			
S-204 (GP)	Used by P-005, T-217			
S-205 (GP)	Used by P-006, T-228			
S-208 (GP)	Used by P-009, T-250			
S-209 (GP)	Used by P-010, T-251			
S-211 (GP)	Used by P-012, T-272			
S-214 (GP)	Used by P-015, T-285			
S-215 (GP)	Used by P-016, T-286			
S-216 (GP)	Used by P-017, T-790			
S-217 (GP)	Used by P-018, T-791			
S-218 (GP)	Used by P-019, T-792			
S-219 (GP)	Used by P-020, T-793			
S-220 (GP)	Used by P-021, T-795			
S-221 (GP)	Used by P-022, T-798			
S-222 (GP)	Used by P-023, T-799			
S-223 (GP)	Used by P-024, T-1117			
S-224 (GP)	Used by P-025, T-1205			
S-225 (GP)	Used by P-026, T-1208			
S-226 (GP)	Used by P-027, T-1211			
S-227 (GP)	Used by P-028, T-1213			
S-228 (GP)	Used by P-029, T-1214			
S-229 (GP)	Used by P-030, T-1215			
S-230 (GP)	Used by P-031, T-1219			
S-231 (GP)	Used by P-032, T-273			

Commented [A12]: Chuck: Add reactivated tanks 1208, 1209, 1212

S-232 (GP)	Used by P-033, T-275			
S-233 (GP)	Used by P-034, T-276			
S-234 (GP)	Used by P-035, T-280			
S-235 (GP)	Used by P-036, T-282			
S-236 (GP)	Used by P-037, T-284			
S-238 (GP)	Used by P-039, T-494			
S-242 (GP)	Used by P-043, T-291			
S-243 (GP)	Used by P-044, T-292			
S-244 (GP)	Used by P-045, T-229			
S-245 (GP)	Used by P-134, T-270			
S-246 (GP)	Used by P-135, T-767			
S-247 (GP)	Used by P-136, T-768			
S-248 (GP)	Used by P-137, T-1101			
S-249 (GP)	Used by P-163, T-1209			
S-250 (GP)	Used by P-165, T-1212			
S-251 (GP)	Used by P-144. T-219			
S-252 (GP)	Used by P-141, Two roughing filters (110 and 111)			
S-253 (GP)	Used by P-142, Two oxidation tanks (101 and 102)			
S-254 (GP)	Used by P-143, 1732 and 1733 Plant Accumulators			
S-801 (PB)	Used by CU-101, Unit 210A, HTR H201			
S-802 (PB)	Used by CU-102, Unit 210B, HTR H201			
S-803 (PB)	Used by CU-103, Unit 210C, HTR 13H1			
S-804 (PB)	Used by CU-139 (Unit 859 1H-1 heater)			
S-805 (PB)	Not in use			
S-806 (PB)	Not in use			

Commented [DF13]: Suggested ID#

Commented [DF14]: Suggested ID#

Commented [DF15]: Suggested ID#

Deleted: Not in use

S-807 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4			
S-808 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4			
S-809 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5			
S-810 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5			
S-811 (PB)	Used by CU-113, Unit 860, HTR 2H6			
S-812 (PB)	Used by CU-114, Unit 860, HTR 2H7			
S-813 (PB)	Used by CU-115, Unit 860, HTR 2H8			
S-818 (PB)	Used by CU-118, Unit 864, HTR PH1			
S-822 (PB)	Used by CU-123, Unit 864, HTR PH7			
S-823 (PB)	Used by CU-124, Unit 864, HTR PH11			

S-824 (PB)	Used by CU-125, Unit 864, HTR PH12			
S-825 (PB)	Used by CU-126, Unit 865, HTR 11H1			
S-826 (PB)	Used by CU-127, Unit 865, HTR 11H2			
S-827 (PB)	Used by CU-128, Unit 865, HTR 12H1			
S-828 (PB)	Used by CU-129, FCCU 868, HTR 8H101			
S-829 (PB)	Used by CU-130, H1 Heater			
S-836 (PB)	Used by P-501, Tank #26			
S-837 (PB)	Used by P-502, Tank #27			
S-838 (PB)	Used by P-503, Tank #28			
S-839 (PB)	Used by P-504, Tank #29			
S-840 (PB)	Used by P-505, Tank #30			
S-842 (PB)	Used by P-507, Tank #33			
S-843 (PB)	Used by P-508, Tank #34			
S-844 (PB)	Used by P-509, Tank #35			
S-845 (PB)	Used by P-510, Tank #36			
S-846 (PB)	Used by P-511, Tank #37			
S-847 (PB)	Used by P-512, Tank #38			
S-848 (PB)	Used by P-513, Tank #39			
S-849 (PB)	Used by P-514, Tank #40			
S-850 (PB)	Used by P-515, Tank #42			
S-851 (PB)	Used by P-516, Tank #43			
S-853 (PB)	Used by P-518, Tank #83			
S-854 (PB)	Used by P-519, Tank #84			
S-855 (PB)	Used by P-520, Tank #85			
S-856 (PB)	Used by P-521, Tank #117			
S-858 (PB)	Used by P-523, Tank #121			
S-859 (PB)	Used by P-524, Tank #125			

S-860 (PB)	Used by P-525, Tank #126			
S-861 (PB)	Used by P-526, Tank #128			
S-862 (PB)	Used by P-527, Tank #129			
S-864 (PB)	Used by P-529, Tank #144			
S-865 (PB)	Used by P-530, Tank #145			
S-869 (PB)	Used by P-534, Tank #151			
S-870 (PB)	Used by P-535, Tank #152			
S-872 (PB)	Used by P-537, Tank #162			
S-873 (PB)	Used by P-538, Tank #172			
S-875 (PB)	Used by P-540, Tank #176			
S-876 (PB)	Used by P-541, Tank #178			
S-877 (PB)	Used by P-542, Tank #179			
S-880 (PB)	Used by P-545, Tank #190			
S-881 (PB)	Used by P-546, Tank #191			
S-882 (PB)	Used by P-547, Tank #204			
S-886 (PB)	Used by P-551, Tank #253			
S-902 (PB)	Used by P-567, Tank #668			
S-906 (PB)	Used by P-571, Tank #672			
S-909 (PB)	Used by P-574, Tank #821			
S-910 (PB)	Used by P-575, Tank #822			
S-911 (PB)	Used by P-576, Tank #823			
S-912 (PB)	Used by P-577, Tank #824			
S-913 (PB)	Used by P-578, Tank #825			
S-914 (PB)	Used by P-579, Tank #826			
S-915 (PB)	Used by P-580, Tank #831			
S-917 (PB)	Used by P-582, Tank #833			
S-919 (PB)	Used by P-584, Tank #835			
S-920 (PB)	Used by P-585, Tank #836			
S-922 (PB)	Used by P-587, Tank #840			
S-923 (PB)	Used by P-588, Tank #841			
S-924 (PB)	Used by P-590, Tank #843			
S-929 (PB)	Used by P-594, Tank #847			

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S-934 (PB)	Used by P-599, Tank #881			
S-935 (PB)	Used by P-600, Tank #882			
S-936 (PB)	Used by P-601, Tank #883			
S-937 (PB)	Used by P-602, Tank #884			
S-938 (PB)	Used by P-603, Tank #885			
S-939 (PB)	Used by P-604, Tank #886			
S-958 (PB)	Used by P-623, Tank #7275			
S-959 (PB)	Used by P-624, Tank #7300 – Bio Plant			
S-962 (PB)	Used by P-627, Tank #7308 – Bio Plant			
S-963 (PB)	Used by P-628, Tank #7309 – South Yard			
S-966 (PB)	Used by P-632, Cooling Tower – Unit 868			
S-967 (PB)	Used by P-633, Cooling Tower – Unit 210			
S-968 (PB)	Used by P-634, Cooling Tower – Unit 864			
S-969 (PB)	Used by P-635, Cooling Tower – Complex Unit			
S-970 (PB)	Used by P-636, Barge Loading			
S-972 (PB)	Used by P-638, Rail Car Loading			
S-973 (PB)	Used by P-639, Bio Plant DNF Unit A&B			
S-974 (PB)	Used by P-640, Bio Plant Sewer System			
S-975 (PB)	Used by P-641, Bio Plant Sewer System			
S-976 (PB)	Used by P-642, North Flare in South Yard			

S-977 (PB)	Used by P-643, South Flare in South Yard Used by P-662, 869 Alkylation Unit			
S-978 (PB)	Used by P-638, LPG Rail Car and Tank Truck Loading/Unloading			
S-979 (PB)	Used by P-644, Two (2) Crude Rail Car Unloading Facilities			
~~S-980 (PB)~~	~~Used by P-646, Two Emergency Sulfur Plant Flare (Unit 867)~~ (To Be Removed)			
S-983 (PB)	Used by P-659 and P-660, North and South Claus Sulfur Recovery Plant (Unit 867)			
	TGU -2			
S-985 (PB)	Used by P-661, FCCU (Unit 868)			
S-986 (PB)	Used by P-662, Alkylation Unit 869			
S-987 (PB)	Used by P-664, Inter-refinery Pipeline			
S-988 (PB)	Used by P-665, 40 CFR 60, Subpart GGG Leaks			
S-990 (PB)	Used by P-667, 40 CFR 61, Subpart FF Wastes			
S-994 (PB)	Used by P-671, 25 PA Code 129.58 Equipment Leaks			
S-996 (PB)	Used by P-670, 40 CFR 61, Subpart J Equipment Leaks			
S-997 (PB)	Used by P-674, Hydrogen Purification Unit 861 (Idle)			

Commented [A16]: Source using S-980 (PB) was removed according to IP18-000260 & IP18-000263

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S-8701 (PB)	Used by CU-137 (Unit 870 H1 heater)			
S-8702 (PB)	Used by CU-138 (Unit 870 H2 heater)			
S-8703 (PB)	Used by CU-140 (Unit 870 H3 heater)			
S-3412 (PB)	Used by EM-001			
S-3413 (GP)	Used by EM-002			
S-3414 (GP)	Used by EM-003			

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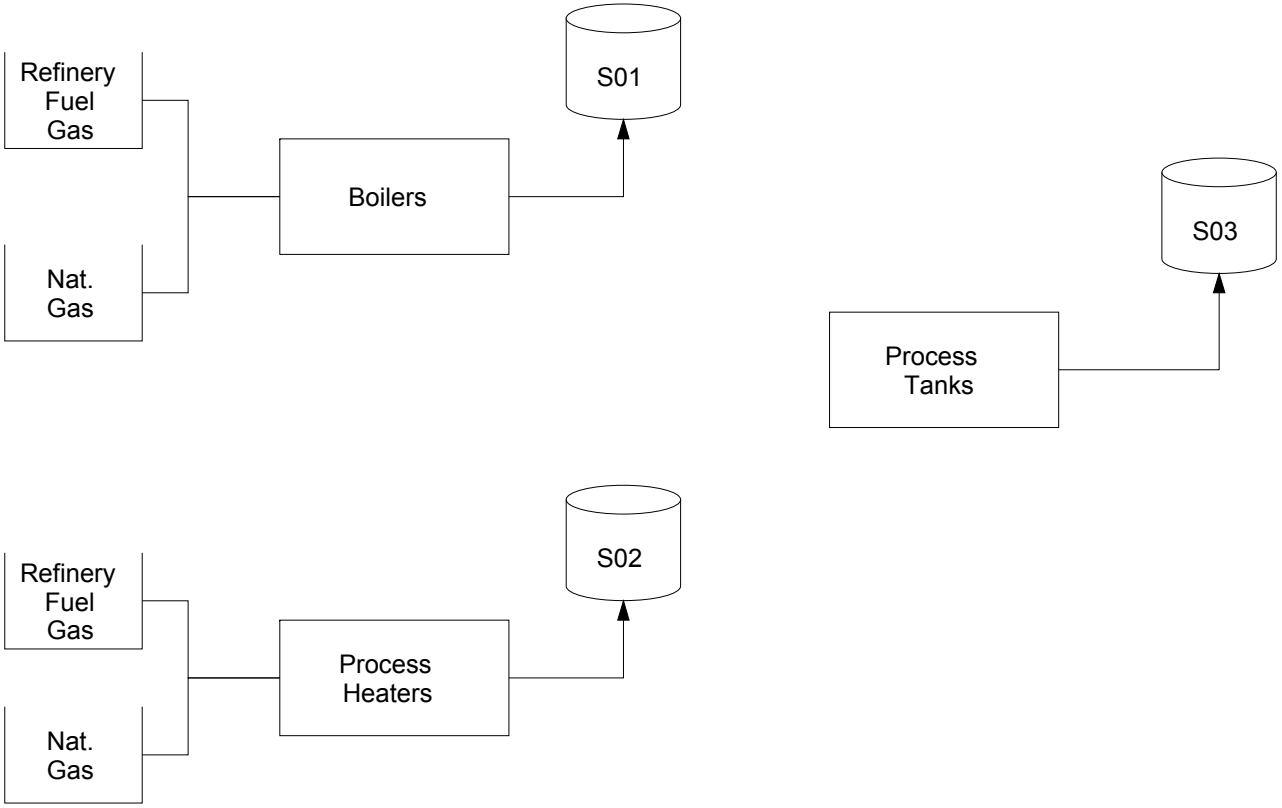
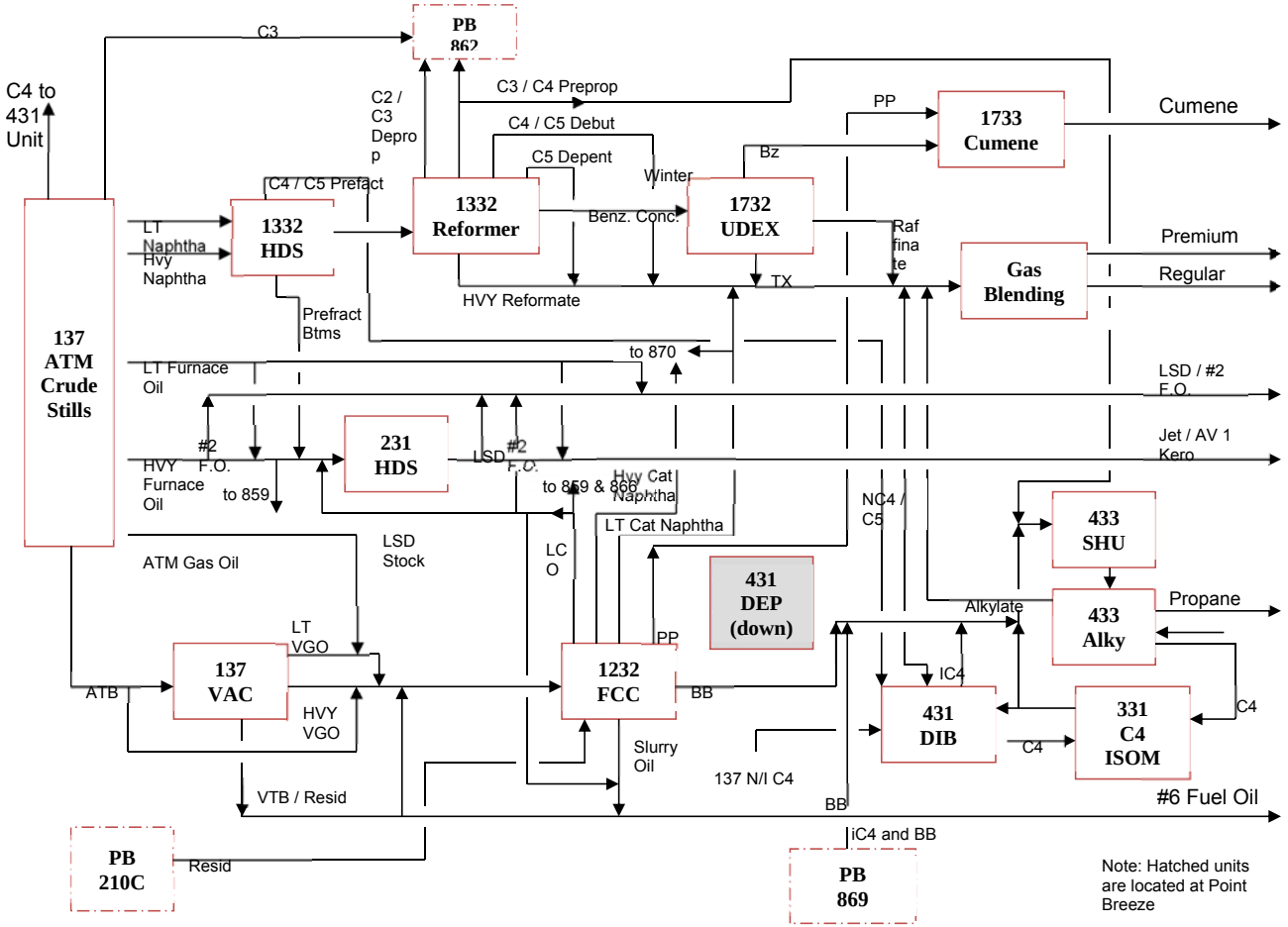
Group IN - Insignificant Activities

P-044 (GP)	T-292, IFR (used for odor control	Not in VOL Service	Sour Water	1945
P-046 (PB)	Eight (8) Gasoline Octane Knock Engines (Lab Equipment)	<4 bhp each	Gasoline	
(PB)	Garage – Brake Cleaner Model 26.1	2 gal	Aqueous Brake Cleaner, Armakleen MPC MSDS 82783	
(GP)	Garage – Brake Cleaner Model 26.1	2 gal	Aqueous Brake Cleaner, Armakleen MPC MSDS 82783	

^ - RFG (Refinery Fuel Gas) or Refinery Gas means either refinery gas or natural gas or any mixture thereof.


Refinery Fuel Gas
Nat. Gas
Boilers
S01
Process Tanks
S03
Refinery Fuel Gas
Nat. Gas
Process Heaters
S02



PROCESS FLOW DIAGRAM FOR THE PHILADELPHIA ENERGY SOLUTIONS REFINERY GIRARD POINT

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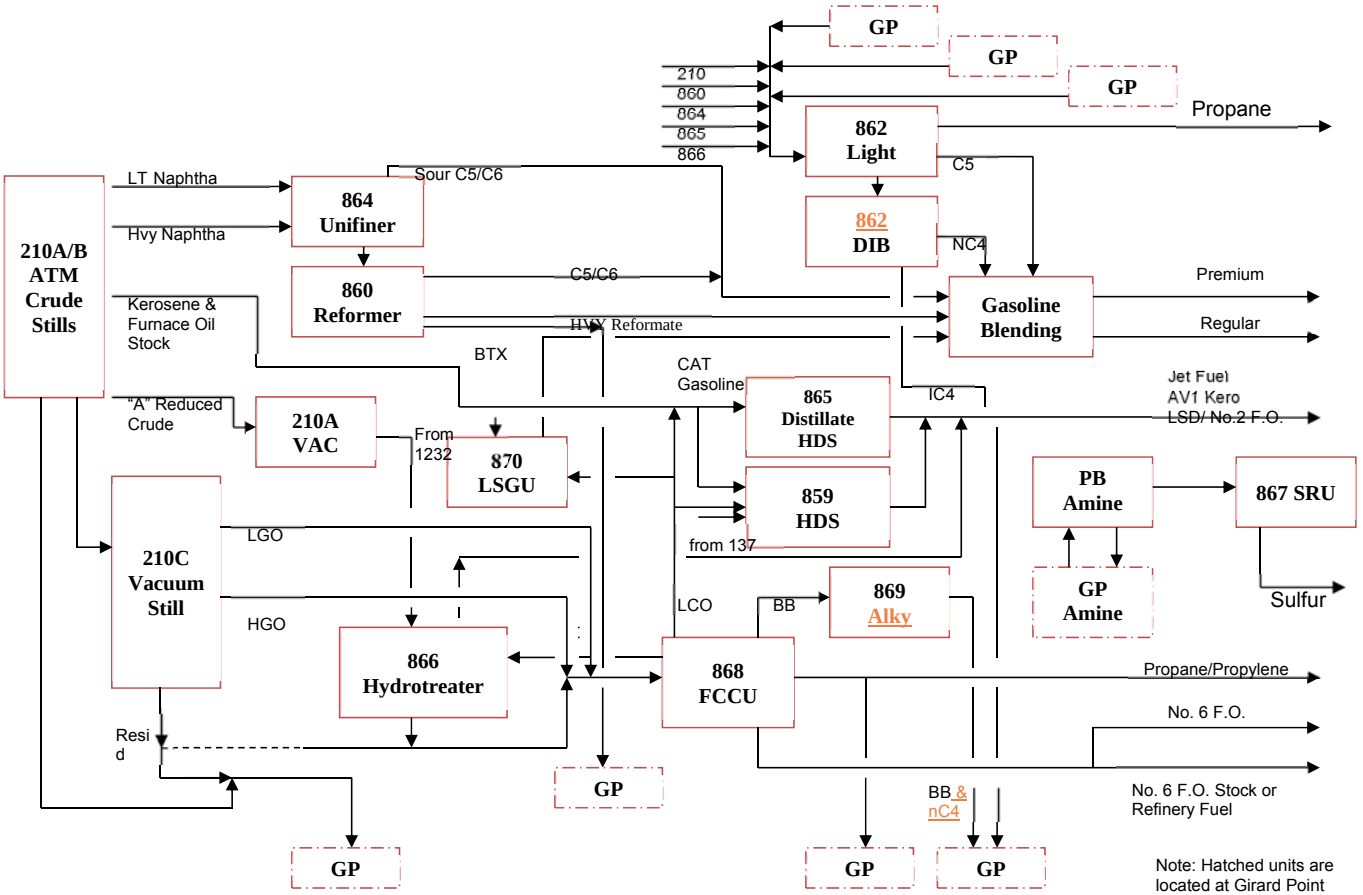

PROCESS FLOW DIAGRAM FOR THE PHILADELPHIA ENERGY SOLUTIONS REFINERY POINT BREEZE

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FACILITY INVENTORY INDEX

CD-002	Adsorber	Group 25A
CD-003	Adsorber	Group 25A
CD-004	CO Boiler	Group 18
~~CD-005~~	~~Electrostatic Precipitator~~	~~Group 18~~
CD-006	F-1 Heater	Group 10
CD-007	Adsorber	Group 25A
CD-008	NOx Selective Catalytic Reduction – 1332 Heaters 401/400	Group 02
CD-010	Carbon Adsorber	Group 25A
CD-011	Thermal Oxidizer for P130	Group 17
CD-014	Flare (Unit 433)	Group 20
CD-015	CO Oxidation Catalyst – Boiler 45	Group 01
CD-016	NOx Selective Oxidation Catalytic Recovery – Boiler 45	Group 01
CD-017	Wet Electrostatic Precipitator – Boiler 45	Group 01
CD-103	Refinery Fuel Gas System – Boilers and Heaters	Group 17
CD-104	LPG Flare	Group 04
CD-105	Carbon Adsorption	Group 25A
CD-106	Carbon Adsorption	Group 25A
CD-107	Carbon Adsorption	Group 25A
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Group 05
CD-109	Tail Gas Incinerator (TGU-1)	Group 05
CD-110	Electrostatic Precipitator	Group 18
CD-111 (P-642)	North Flare South Yard	Group 20
CD-112	South Flare South Yard	Group 20
CD-114	Tail Gas Incinerator (TGU-2)	Group 05
CU-004 (GP)	Unit 1232 B-104 Heater	Group 02
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	Group 02
CU-006 (GP)	Unit 1332 H-602 Heater	Group 02
CU-007 (GP)	Unit 1332 H-601 Heater	Group 02
CU-008 (GP)	Unit 1332 H-600 Heater	Group 02
CU-009 (GP)	Unit 1332 H-2 Heater	Group 02
CU-010 (GP)	Unit 1332 H-401 Heater	Group 02
CU-011 (GP)	Unit 1332 H-400 Heater	Group 02
CU-012 (GP)	Unit 1332 H-3 Heater	Group 02
CU-013 (GP)	Unit 137 F-1 Heater	Group 02

Commented [A20]: Source was removed per Plan Approval No. 04322, and was replaced by the SCR System and WGS System associated with 1232 FCCU.

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Commented [A25]: Deleted CD-113, Backup Tailgas Unit

CU-014 (GP)	Unit 137 F-2 Heater	Group 02
CU-015 (GP)	Unit 137 F-3 Heater	Group 02
CU-016 (GP)	Unit 231 B-101 Heater	Group 02
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	Group 02
CU-018 (GP)	#37 Boiler	Group 01
CU-020 (GP)	#39 Boiler	Group 01
CU-021 (GP)	#40 Boiler	Group 01
CU-022 (GP)	#45 Boiler	Group 01
CU-025 (PB)	Boiler No. 1	Group 01
CU-101 (PB)	Unit 210 H-101 Heater	Group 02
CU-102 (PB)	Unit 210 H-201 Heater	Group 02
CU-103 (PB)	Unite 210 13H-1 Heater	Group 02
CU-108 (PB)	2H-1 Heater (IDLED)	Group 02
CU-109 (PB)	Unit 860 2H-2 Heater	Group 02
CU-110 (PB)	Unit 860 2H-3 Heater	Group 02
CU-111 (PB)	Unit 860 2H-4 Heater	Group 02
CU-112 (PB)	Unit 860 2H-5 Heater	Group 02
CU-113 (PB)	Unit 860 2H-6 Heater	Group 02
CU-114 (PB)	Unit 860 2H-7 Heater	Group 02
CU-115 (PB)	Unit 860 2H-8 Heater	Group 02
CU-117 (PB)	Unit 861, Heater 3H-1 (Idle)	Group 02
CU-118 (PB)	Unit 864 PH-1 Heater	Group 02
CU-119 (PB)	PH-2 Heater (Idle)	Group 02
CU-120 (PB)	PH-3 Heater (Idle)	Group 02
CU-121 (PB)	PH-4 Heater (Idle)	Group 02
CU-122 (PB)	PH-5 Heater (Idle)	Group 02
CU-123 (PB)	Unit 864 PH-7 Heater	Group 02
CU-124 (PB)	Unit 864 PH-11 Heater	Group 02
CU-125 (PB)	Unit 864 PH-12 Heater	Group 02
CU-126 (PB)	Unit 865 11H-1 Heater	Group 02
CU-127 (PB)	Unit 865 11H-2 Heater	Group 02
CU-128 (PB)	Unit 866 12H-1 Heater	Group 02
CU-129 (PB)	Unit 868 8H-101 Heater	Group 02
CU-137 (PB)	Unit 870 H1 Heater	Group 02
CU-138 (PB)	Unit 870 H2 Heater	Group 02
CU-139 (PB)	Unit 859 1-H1 Heater	Group 02
CU-140 (PB)	Unit 870 H3 Heater	Group 02
P-001 (GP)	T-1116, EFR	Group 14B
P-002 (GP)	T-1216, IFR	Group 15A
P-003 (GP)	T-1217, IFR	Group 15A
P-004 (GP)	T-202, IFR	Group 15A
P-005 (GP)	T-217, IFR	Group 13A

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P-006 (GP)	T-228, EFR	Group 14C
P-007 (GP)	T-238, Fixed Roof	Group 15A
P-008 (GP)	T-242, EFR	Group 14B
P-009 (GP)	T-250, IFR	Group 13C
P-010 (GP)	T-251, IFR	Group 13C
P-011 (GP)	T-271, Fixed Roof	Group 15B
P-012 (GP)	T-272, IFR	Group 13B
P-013 (GP)	T-279, Fixed Roof	Group 15A
P-015 (GP)	T-285, IFR	Group 13B
P-016 (GP)	T-286, IFR	Group 13B
P-017 (GP)	T-790, IFR	Group 13A
P-018 (GP)	T-791, IFR	Group 13A
P-019 (GP)	T-792, Fixed Roof	Group 15A
P-020 (GP)	T-793, Fixed Roof	Group 15A
P-021 (GP)	T-795, IFR	Group 13A
P-022 (GP)	T-798, IFR	Group 13A
P-023 (GP)	T-799, IFR	Group 13A
P-024 (GP)	T-1117, EFR	Group 13A
P-025 (GP)	T-1205, IFR	Group 13A
P-026 (GP)	T-1208, IFR	Group 13A
P-027 (GP)	T-1211, Fixed Roof	Group 15A
P-028 (GP)	T-1213, Fixed Roof	Group 15A
P-029 (GP)	T-1214, IFR	Group 13A
P-030 (GP)	T-1215, Fixed Roof	Group 15A
P-031 (GP)	T-1219, Fixed Roof	Group 15A
P-032 (GP)	T-273, Fixed Roof	Group 15A
P-033 (GP)	T-275, Fixed Roof	Group 15A
P-034 (GP)	T-276, IFR	Group 13B
P-035 (GP)	T-280, Fixed Roof	Group 15A
P-036 (GP)	T-282, Fixed Roof	Group 15A
P-037 (GP)	T-284, Fixed Roof	Group 15A
P-039 (GP)	T-494, Fixed Roof	Group 15A
P-040 (GP)	T-495, Fixed Roof	Group 15A
P-045 (GP)	T-229, IFR	Group 13C
P-046 (PB)	Eight (8) Gasoline Octane Knock Engines	Group IN
P-108 (GP)	Degreasing Vats	Group 22
P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC	Group 25A
P-115	Refining Wastewater	Group 25B
P-117 (GP) - CD012	1231 Flare – Unit 1232	Group 03
P-118 (GP) –	1232 Flare – Unit 1232	Group 03

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CD013		
P-119 (GP) - CD014	433 Flare	Group 03
P-120 (GP)	FCCU, Unit 1232 Regenerator	Group 18
P-121 (GP)	Butane Isomerization - Unit 331	Group 23
P-123	SOCMI Wastewater	Group 25B
P-125 (GP)	Cooling Tower 1232 - Unit 1232	Group 09
P-126 (GP)	Cooling Tower 433 - Unit 433	Group 09
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733	Group 09
P-128 (GP)	Cooling Tower 137 – Unit 137	Group 09
P-129 (GP)	1733 Tank Truck Loading – Cumene	Group 04
P-130 (GP)	Barge Loading – Girard Point Wharf	Group 17
P-131 (GP)	4A API Separator – WWT	Group 25A
P-132 (GP)	2B API Separator – WWT	Group 25A
P-134 (GP)	T-270, IFR	Group 13C
P-135 (GP)	T-767, IFR	Group 13C
P-136 (GP)	T-768, IFR	Group 13C
P-137 (GP)	T-1101, IFR	Group 13C
P-141 (GP)	T-1146, T-1147	Group 25A
P-142 (GP)	T-1142, T-1143	Group 25A
P-144 (GP)	T-219	Group 15A
P-145 (GP)	T-223	Group 15A
P-146 (GP)	T-225	Group 15A
P-147 (GP)	T-227	Group 15A
P-148 (GP)	T-267	Group 15A
P-149 (GP)	T-268	Group 15A
P-150 (GP)	T-281	Group 15A
P-151 (GP)	T-676	Group 15A
P-152 (GP)	T-677	Group 15A
P-153 (GP)	T-794	Group 15A
P-154 (GP)	T-796	Group 15A
P-155 (GP)	T-844	Group 14C
P-156 (GP)	T-1108	Group 15A
P-157 (GP)	T-1038	Group 15A
P-158 (GP)	T-1039	Group 15B
P-159 (GP)	T-1086	Group 13C
P-160 (GP)	T-1087	Group 13C
P-161 (GP)	T-1128	Group 15A
P-162 (GP)	T-1136	Group 14C
P-163 (GP)	T-1209	Group 13A
P-164 (GP)	T-1210	Group 15A

P-165 (GP)	T-1212	Group 15A
P-166 (GP)	T-1218	Group 15A
P-167 (GP)	T-1220	Group 15A
P-168 (GP)	T-271	Group 15A
P-170 (GP)	T-277	Group 15A
P-171 (GP)	T-1004	Group 15B
P-172 (GP)	T-1005	Group 15B
P-173 (GP)	T-1006	Group 15B
P-174 (GP)	T-1007	Group 13C
P-175 (GP)	T-3000	Group 15A
P-176 (GP)	T-3001	Group 15A
P-177 (GP)	T-3002	Group 15A
P-178 (GP)	T-3004	Group 15A
P-179 (GP)	T-3005	Group 15A
P-180 (GP)	Cumene Production Unit 1733	Groups 25B, 26
P-181 (GP)	Benzene Production Unit 1732	Groups 25B, 26
P-181	Six vents (go to CD-012 or CD-013)	Group 10
P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)	Group 20
P-183 (GP)	Unit 1732 benzene railcar unloading station	Group 04
P-184 (GP)	Four vents (one goes to CD-006, and three go to a process heater or to CD-012 or CD-013	Group 10
P-501 (PB)	Tank # 26, IFR	Group 13C
P-502 (PB)	Tank # 27, EFR	Group 14B
P-503 (PB)	Tank # 28, EFR	Group 14B
P-504 (PB)	Tank # 29, EFR	Group 14B
P-505 (PB)	Tank # 30, EFR	Group 14B
P-506 (PB)	Tank # 32, IFR	Group 13B
P-507 (PB)	Tank # 33, EFR	Group 14B
P-508 (PB)	Tank # 34, EFR	Group 14B
P-509 (PB)	Tank # 35, EFR	Group 14B
P-510 (PB)	Tank # 36, EFR	Group 13B
P-511 (PB)	Tank # 37, IFR	Group 13C
P-512 (PB)	Tank # 38, EFR	Group 14B
P-513 (PB)	Tank # 39, EFR	Group 14B
P-514 (PB)	Tank # 40, EFR	Group 14B
P-515 (PB)	Tank # 42, EFR	Group 15A
P-516 (PB)	Tank # 43, Cone Roof	Group 15A
P-517 (PB)	Tank # 44, Cone Roof	Group 15A
P-518 (PB)	Tank # 83, Cone Roof	Group 15A
P-519 (PB)	Tank # 84, Cone Roof	Group 15A
P-520 (PB)	Tank # 85, Cone Roof	Group 15A

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P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	Group 14B
P-522 (PB)	Tank # 119, IFR	Group 13B
P-523 (PB)	Tank # 121, IFR	Group 13A
P-524 (PB)	Tank # 125, EFR	Group 14B
P-525 (PB)	Tank # 126, EFR	Group 14B
P-526 (PB)	Tank # 128, EFR	Group 14B
P-527 (PB)	Tank # 129, EFR	Group 14B
P-528A (PB)	Tank # 140, Cone Roof	Group 15A
P-529 (PB)	Tank # 144, Cone Roof	Group 15A
P-530 (PB)	Tank # 145, Cone Roof	Group 15A
P-531 (PB)	Tank # 146, EFR	Group 14B
P-532 (PB)	Tank # 149, Cone Roof	Group 15A
P-533 (PB)	Tank # 150, EFR	Group 15A
P-534 (PB)	Tank # 151, EFR	Group 15A
P-535 (PB)	Tank # 152, Cone Roof	Group 15A
P-536 (PB)	Tank # 161, Cone Roof	Group 15A
P-537 (PB)	Tank # 162, EFR	Group 14B
P-538 (PB)	Tank # 172, IFR	Group 13B
P-540 (PB)	Tank # 176, EFR	Group 14B
P-541 (PB)	Tank # 178, EFR	Group 14B
P-542 (PB)	Tank #179, EFR	Group 14B
P-543 (PB)	Tank #181, EFR	Group 14B
P-544 (PB)	Tank #182, IFR	Group 13B
P-545 (PB)	Tank #190, IFR	Group 13B
P-546 (PB)	Tank #191, EFR	Group 14B
P-547 (PB)	Tank #204, IFR	Group 13B
P-550 (PB)	Tank #252, Cone Roof	Group 15A
P-551 (PB)	Tank #253, Cone Roof	Group 15A
P-555 (PB)	Tank #298, Cone Roof	Group 15A
P-563 (PB)	Tank #663, Cone Roof	Group 15A
P-564 (PB)	Tank #665, Cone Roof	Group 15A
P-564A (PB)	Tank #664, Cone Roof	Group 15A
P-565 (PB)	Tank #666, Cone Roof	Group 15A
P-566 (PB)	Tank #667, Cone Roof	Group 15A
P-567 (PB)	Tank #668, Cone Roof	Group 15A
P-568 (PB)	Tank #669, Cone Roof	Group 15A
P-569 (PB)	Tank #670, Cone Roof	Group 15A
P-571 (PB)	Tank #672, Cone Roof	Group 15A
P-574 (PB)	Tank #821, Cone Roof	Group 15A
P-575 (PB)	Tank #822, IFR	Group 15A
P-576 (PB)	Tank #823, IFR	Group 15A
P-577 (PB)	Tank #824, Cone Roof	Group 15A
P-578 (PB)	Tank #825, Cone Roof	Group 15A

P-579 (PB)	Tank #826, EFR	Group 14B
P-580 (PB)	Tank #831, EFR	Group 15A
P-581 (PB)	Tank #832, Cone Roof	Group 15A
P-582 (PB)	Tank #833, IFR	Group 15A
P-583 (PB)	Tank #834, Cone Roof	Group 15A
P-584 (PB)	Tank #835, IFR	Group 15A
P-585 (PB)	Tank #836, IFR	Group 15A
P-587 (PB)	Tank #840, EFR	Group 14B
P-588 (PB)	Tank #841, EFR	Group 14B
P-590 (PB)	Tank #843, EFR	Group 14B
P-591 (PB)	Tank #844, EFR	Group 14C
P-593 (PB)	Tank #846, EFR	Group 14B
P-594 (PB)	Tank #847, IFR	Group 13B
P-595 (PB)	Tank #848, EFR	Group 14B
P-596 (PB)	Tank #849, EFR	Group 14B
P-598 (PB)	Tank #880, EFR	Group 14A
P-600 (PB)	Tank #882, EFR	Group 14B
P-601 (PB)	Tank #883, EFR	Group 14B
P-602 (PB)	Tank #884, EFR	Group 14B
P-603 (PB)	Tank #885, IFR	Group 13B
P-604 (PB)	Tank #886, IFR	Group 13B
P-623 (PB)	Tank #7275, Cone Roof	Group 15A
P-624 (PB)	Tank # 7300, EFR	Group 14C
P-627 (PB)	Tank #7308, EFR	Group 14C
P-632 (PB)	Cooling Tower, Unit 868	Group 09
P-633 (PB)	Cooling Tower, Unit 210	Group 09
P-634 (PB)	Cooling Tower, Unit 864	Group 09
P-635 (PB)	Cooling Tower, Complex	Group 09
P-636 (PB)	Marine Barge Loading	Group 17
P-637 (GP)	Butane Railcar Loading/Unloading	Group 04
P-638 (PB)	Propane Loading Station	Group 04
P-639 (PB)	API Separators A&B – Bio Plant	Group 25A
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant	Group 25A
P-641 (PB)	Bio Plant Sewer System – Refinery	Group 25A
P-642 (PB) CD111	Flare, North Flare in South Yard	Group 03
P-643 (PB) CD112	Flare, South Flare in South Yard	Group 03
P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities	Group 04
~~P-646 (PB)~~	~~Flares, Emergency Sulfur Plant~~ To Be Removed	~~Group 03~~

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P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	Group 05
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	Group 05
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	Group 18
P-662 (PB)	Alkylation Unit 869	Group 20
P-664 (PB)	Inter-Refinery Pipeline	Group 19
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC	Group 25A
~~P-674 (PB)~~	~~H2 Purification~~ (Idle)	~~Group 21~~
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	Group 10

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SECTION B. GENERAL REQUIREMENTS

1. Definitions

[25 Pa Code §121.1]

Words and terms that are not otherwise defined in this permit shall have the meanings set forth in Section 3 of the Pennsylvania Air Pollution Control Act (35 P.S. §4003) and 25 Pa Code §121.1.

2. Property Rights

[25 Pa Code §127.512(c)(4)]

This permit does not convey property rights of any sort, or any exclusive privileges.

3. Permit Expiration

[25 Pa Code §127.446(a) and (c)]

This operating permit is issued for a fixed term of 5 years and shall expire on the date specified on the front page of this permit. The terms and conditions of the expired permit shall automatically continue pending issuance of a new Title V permit, provided the Permittee has submitted a timely and complete application and paid applicable fees required under 25 Pa Code §127, Subchapter I and AMS is unable, through no fault of the Permittee, to issue or deny a new permit before the expiration of the previous permit. An application is complete if it contains sufficient information to begin processing the application, has the applicable sections completed and has been signed by a responsible official.

4. Permit Renewal

[25 Pa Code §§127.412, 127.413, 127.414, 127.446(e) & 127.503]

(a) The Permittee shall submit a complete application for renewal of the Title V permit at least 6 months and not more than 18 months before the expiration date of this permit. The Permittee shall submit to AMS a timely and complete application.

(b) The application for permit renewal shall include the current permit number, the appropriate renewal fee, a description of any permit revisions and off-permit changes that occurred during the permit term, and any applicable requirements that were promulgated and not incorporated into the permit during the permit term. The application for renewal of the Title V permit shall include submission of supplemental compliance review forms in accordance with 25 Pa Code §127.412(b) or (j).

(c) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information during the permit renewal process. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the source

after the date a complete renewal application was submitted but prior to release of a draft permit.

5. Transfer of Ownership or Operation

[25 Pa Code §§127.450(a)(4), 127.464(a) & AMR I Sec. II.A.5.c.]

(a) In accordance with 25 Pa Code §127.464(a) this permit may not be transferred to another person, except in cases of transfer-of-ownership which are documented and approved to the satisfaction of AMS.

(b) In accordance with 25 Pa Code §127.450(a)(4), a change in ownership or operational control of the source shall be treated as an administrative amendment if:

(1) AMS determines that no other change in the permit is necessary;

(2) A written agreement has been submitted to AMS identifying the specific date of the transfer of permit responsibility, coverage and liability between the current and the new Permittee; and

(3) A compliance review form has been submitted to AMS and the permit transfer has been approved by AMS.

6. Inspection and Entry

[25 Pa Code §127.513, 35 P.S. §4008, §114 of the Clean Air Act & Phila. Code §3-304]

(a) Upon presentation of credentials and other documents as may be required by law for inspection and entry purposes, the Permittee shall allow AMS or authorized representatives of AMS to perform the following:

(1) Enter at reasonable times upon the Permittee's premises where a Title V source is located or emissions related activity is conducted, or where records are kept under the conditions of this permit;

(2) Have access to and copy or remove, at reasonable times, any records that are kept under the conditions of this permit;

(3) Inspect at reasonable times, facilities, equipment including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit;

(4) Sample or monitor, at reasonable times, any substances or parameters for the purpose of assuring compliance with the permit or applicable requirements as authorized by the Clean Air Act, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code, or the regulations promulgated thereunder.

(b) Pursuant to 35 P.S. §4008, no person shall hinder, obstruct, prevent, or interfere with AMS or its personnel in the performance of any duty authorized under the Pennsylvania Air Pollution Control Act, Philadelphia Air Management Code, or regulations adopted thereunder.

(c) Nothing in this permit condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

7. Compliance Requirements

[25 Pa Code §§127.25, 127.444, 127.512(c)(1) & AMR I Sec. II.A.5.b.]

(a) The Permittee shall comply with the conditions of this permit. Noncompliance with this permit constitutes a violation of the Clean Air Act, the Pennsylvania Air Pollution Control Act, and/or the Philadelphia Air Management Code and is grounds for one or more of the following:

(1) Enforcement action

(2) Permit termination, revocation and reissuance or modification

(3) Denial of permit renewal application.

(b) A person may not cause or permit the operation of a source subject to 25 Pa Code Article III or the Philadelphia Air Management Code, unless the source(s) and air cleaning devices identified in the application for the plan approval/ installation permit and operating permit and the plan approval/ installation permit issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval/ installation permit and operating permit issued by AMS. A person may not cause or permit the operation of an air contamination source subject to 25 Pa Code Chapter 127 or the Philadelphia Air Management Code in a manner inconsistent with good operating practices.

(c) For purposes of sub-condition (b) of this permit condition, the specifications in applications for plan approvals/ installation permits and operating permits are the physical configurations and engineering design details which AMS determines are essential for the Permittee's compliance with the applicable requirements in this Title V permit.

(d) The Permittee shall not change any installation such that the registered information concerning it is no longer accurate without first notifying AMS.

8. Need to Halt or Reduce Activity Not A Defense

[25 Pa Code §127.512(c)(2)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. Duty to Provide Information

[25 Pa Code §127.411(d), §127.512(c)(5) & AMR I Sec. II.B. and C.]

(a) The Permittee shall furnish to AMS, within a reasonable time, information that AMS may request in writing to determine whether cause exists for modifying,

revoking and reissuing, or terminating the permit, or to determine compliance with the permit.

(b) Upon request, the Permittee shall also furnish AMS copies of records that the Permittee is required to keep by this permit, or for information claimed to be confidential, the Permittee may furnish such records along with any claim of confidentiality.

10. Reopening and Revising The Title V Permit for Cause

[25 Pa Code §§127.463, 127.512(c)(3), & 127.542]

(a) This Title V permit may be modified, revoked, reopened and reissued or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation, reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay a permit condition.

(b) This permit may be reopened and reissued prior to expiration of the permit under one or more of the following circumstances:

(1) Additional applicable requirements under the Clean Air Act, Pennsylvania Air Pollution Control Act, or Philadelphia Air Management Code become applicable to a Title V facility with a remaining permit term of 3 or more years prior to the expiration date of this permit. AMS will revise the permit as expeditiously as practicable but not later than 18 months after promulgation of the applicable standards or regulations. No such revision is required if the effective date of the requirement is later than the expiration date of this permit, unless the original permit or its terms and conditions has been extended.

(2) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Excess emissions offset plans for an affected source shall be incorporated into the permit upon approval by the Administrator of EPA.

(3) AMS or the EPA determines that this permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.

(4) AMS or the Administrator of EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(c) Proceedings to revise this permit shall follow the same procedures which apply to initial permit issuance and shall affect only those parts of this permit for which cause to revise exists. The revision shall be made as expeditiously as practicable.

(d) Regardless of whether a revision is made in accordance with (b)(1) above, the Permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations.

11. Reopening a Title V Permit for Cause by EPA

[25 Pa Code §127.543]

As required by the Clean Air Act and regulations adopted thereunder, this permit may be modified, reopened and reissued, revoked or terminated for cause by EPA in accordance with procedures specified in 25 Pa Code §127.543.

12. Significant Operating Permit Modifications

[25 Pa Code §127.541]

When permit modifications during the term of this permit do not qualify as minor permit modifications or administrative amendments, the Permittee shall submit an application for significant Title V permit modifications in accordance with 25 Pa Code §127.541.

13. Minor Operating Permit Modifications

[25 Pa Code §§121.1, 127.462 & AMR I Sec. II.A.]

(a) The Permittee may make minor permit modifications (as defined in 25 Pa Code §121.1) in accordance with 25 Pa Code §127.462.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) shall extend to an operational flexibility change authorized by 25 Pa Code §127.462.

14. Administrative Operating Permit Modifications

[25 Pa Code §127.450]

(a) The Permittee may request administrative operating permit amendments, as defined in §127.450(a), according to the procedures specified in §127.450. Administrative amendments are not authorized for any amendment precluded by the Clean Air Act or the regulations thereunder from being processed as an administrative amendment.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, AMS will, upon taking final action granting a request for an administrative permit amendment in accordance with §127.450(c), allow coverage by the permit shield in 25 Pa Code §127.516 (relating to permit shield) for administrative permit amendments which meet the relevant requirements of 25 Pa Code Article III.

15. Severability Clause

[25 Pa Code §127.512(b) & AMR I Sec. VIII]

The provisions of this permit are severable, and if any provision of this permit is determined by the Environmental Hearing Board (Department of Licenses and Inspections Review Board until the Environmental Hearing Board is approved) or a court of competent jurisdiction to be invalid or unenforceable, such a determination will not affect the remaining provisions of this permit.

16. Fee Payment

[25 Pa Code §§127.704, 127.705 & 127.707]

(a) The Permittee shall pay fees to AMS in accordance with the applicable fee schedules in 25 Pa Code Chapter 127 Subchapter I (relating to plan approval and operating permit fees).

(b) Emission fees. The Permittee shall, on or before September 1 of each year, pay applicable annual Title V emission fees for emissions occurring in the previous calendar year as specified in 25 Pa Code §127.705. The Permittee is not required to pay an emission fee for emissions of more than 4,000 tons of each regulated pollutant emitted from the facility.

(c) As used in this permit condition, the term “regulated pollutant” is defined as a Volatile Organic Compound, each pollutant regulated under Sections 111 and 112 of the Clean Air Act and each pollutant for which a National Ambient Air Quality Standard has been promulgated, except that carbon monoxide is excluded. Payment shall be made to AMS.

(d) Late Payment. Late payment of emission fees will subject the Permittee to the penalties prescribed in 25 Pa Code §127.707 and may result in the suspension or termination of the Title V permit. The Permittee shall pay a penalty of fifty per centum (50%) of the fee amount, plus interest on the fee amount computed in accordance with 26 U.S.C.A. §6621(a)(2) from the date the emission fee should have been paid in accordance with the time frame specified in 25 Pa Code §127.705(c).

(e) The Permittee shall pay an annual operating permit administration fee according to the fee schedule established in 25 Pa Code §127.704(c) if the facility, identified in subparagraph (iv) of the definition of the term “Title V facility” in 25 Pa Code §121.1, is subject to Title V after the EPA Administrator completes rulemaking requiring regulation of those sources under Title V of the Clean Air Act.

(f) This permit condition does not apply to a Title V facility which qualifies for exemption from emission fees under 35 P.S. §4006.3(f).

17. Authorization for De Minimis Emissions Increases

[25 Pa Code §§127.14(b), 127.449 & Phila. Code §3-306]

(a) This permit authorizes de minimis emission increases from a new or existing source in accordance with 25 Pa Code §§127.14 and 127.449 without the need for a plan approval, Phila. Code §3-306 without the need for an installation permit, or prior issuance of a permit modification. The Permittee shall provide AMS with 7 days prior written notice before commencing any de minimis emission increase that would result from either: (1) a physical change of minor significance under 127.14.(c)(1) and Phila. Code §3-306; or (2) the construction, installation, modification or reactivation of an air contamination source. The written notice shall:

(1) Identify and describe the pollutants that will be emitted as a result of the de minimis increase.

(2) Provide emission rates in tons/year and in terms necessary to establish compliance consistent with any applicable requirement.

AMS may disapprove or condition the de minimis emission increase at any time.

(b) Except as provided below in (c) and (d) of this permit condition, the Permittee is authorized during the term of this permit to make the following de minimis emission increases (expressed in tons per year), up to the following amounts without the need for a plan approval or installation permit or prior issuance of a permit modification:

(1) Four tons of carbon monoxide from a single source during the term of the permit and 20 tons of carbon monoxide at the facility during the term of the permit.

(2) One ton of NO_x from a single source during the term of the permit and five tons of NO_x at the facility during the term of the permit.

(3) One and six-tenths tons of oxides of sulfur from a single source during the term of the permit and eight tons of oxides of sulfur at the facility during the term of the permit.

(4) Six-tenths of a ton of PM-10 from a single source during the term of the permit and three tons of PM-10 at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(5) One ton of VOCs from a single source during the term of the permit and five tons of VOCs at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(c) The Permittee is authorized to install the following minor sources without the need for a plan approval or installation permit:

(1) Air conditioning or ventilation systems not designed to remove pollutants generated or released from other sources.

(2) Combustion units rated at 250,000 or less Btu per hour of net load rating.

(3) Laboratory equipment used exclusively for chemical or physical analysis.

(d) This permit does not authorize de minimis emission increases if the emissions increase would cause one or more of the following:

(1) Increase the emissions of the pollutant regulated under Section 112 of the Clean Air Act except as authorized in subparagraph (b)(4) & (5) of this permit condition.

(2) Subject the facility to the prevention of significant deterioration requirements in 25 Pa Code Chapter 127, Subchapter D and/or the new source review requirements in subchapter E.

(3) Violate any applicable requirement of the Air Management Code, the Air Pollution Control Act, the Clean Air Act, or the regulations thereunder.

(4) Changes which are modifications under the provision of Title 1 of the Clean Air Act and emission increases which would exceed the allowable emissions level (expressed as a rate of emissions or in terms of total emissions) under the Title V permit.

(e) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) applies to de minimis emission increases and the installation of minor sources made pursuant to this permit condition.

(f) Emissions authorized under this permit condition shall be included in the monitoring, recordkeeping and reporting requirements of this permit.

(g) Except for de minimis emission increases allowed under this permit, or sources and physical changes meeting the requirements of 25 Pa Code §127.14, the Permittee is prohibited from making physical changes or engaging in activities that are not specifically authorized under this permit without first applying for a plan approval. A City of Philadelphia Installation Permit is required if the activities are subject to the Philadelphia Air Management Code. In accordance with 25 Pa Code §127.14(b), a plan approval is not required for the construction, modification, reactivation, or installation of the sources creating the de minimis emissions increase.

(h) The Permittee may not meet de minimis emission threshold levels by offsetting emission increases or decreases at the same source.

18. Reactivation of Sources

[25 Pa Code §§127.11, 127.11a, 127.215 & AMR I Sec. II.A.5.]

(a) The Permittee shall notify AMS of any source that is out of operation for more than a year in its semiannual monitoring report.

(b) The Permittee may reactivate a source at the facility that has been out of operation or production for at least one year, but less than or equal to 5 years, if the source is reactivated in accordance with the requirements of 25 Pa Code §§127.11a and 127.215. The reactivated source will not be considered a new source.

(c) A source which has been out of operation or production for more than five years but less than 10 years may be reactivated and will not be considered a new source if the Permittee satisfies the conditions specified in 25 Pa Code §127.11a(b).

19. Circumvention

[25 Pa Code §§121.9, 127.216 & AMR I Sec. VII]

(a) The Permittee may not circumvent the requirements of 25 Pa Code Chapter 127, by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or

development, would otherwise require a permit or submission of a plan approval application.

(b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this permit, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code or the regulations promulgated thereunder, except that with prior approval of AMS, the device or technique may be used for control of malodors.

20. Operational Flexibility

[25 Pa Code §127.3 & AMR I Sec. XII]

(a) The Permittee is authorized to make changes within the Title V facility in accordance with the following provisions in 25 Pa Code Chapter 127 and in Phila. Code §3-306 which implement the operational flexibility requirements of Section 502(b)(10) of the Clean Air Act and Section 6.1(i) of the Pennsylvania Air Pollution Control Act:

(1) Section 127.14 and Phila. Code §3-306, whichever is more stringent (relating to exemptions)

(2) Section 127.447 (relating to alternative operating scenarios)

(3) Section 127.448 (relating to emissions trading at facilities with Federally enforceable emissions caps)

(4) Section 127.449 (relating to de minimis emission increases)

(5) Section 127.450 (relating to administrative operating permit amendments)

(6) Section 127.462 (relating to minor operating permit amendments)

(7) Subchapter H (relating to general plan approvals and operating permits)

(b) Unless precluded by the Clean Air Act or the regulations adopted thereunder, the permit shield authorized under 25 Pa Code §127.516 shall extend to operational flexibility changes made at this Title V facility pursuant to this permit condition and other applicable operational flexibility terms and conditions of this permit.

21. Approved Economic Incentives and Emission Trading Programs

[25 Pa Code §127.512(e)]

No permit revision shall be required under approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this Title V permit.

22. Permit Shield

[25 Pa Code §§127.516, 127.450(d), 127.449(f) & 127.462(g)]

(a) The Permittee's compliance with the conditions of this permit shall be deemed in compliance with applicable requirements as of the date of permit issuance if either of the following applies:

(1) The applicable requirements are included and are specifically identified in this permit.

(2) AMS specifically identifies in the permit other requirements that are not applicable to the permitted facility.

(b) Nothing in 25 Pa Code §127.516 or the Title V permit shall alter or affect the following:

(1) The provision of Section 303 of the Clean Air Act, including the authority of the Administrator of the EPA provided thereunder.

(2) The liability of the Permittee for a violation of an applicable requirement prior to the time of permit issuance.

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act.

(4) The ability of the EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(c) Unless precluded by the Clean Air Act or regulations thereunder, final action by AMS on administrative amendments, minor and significant permit modifications, and operational flexibility changes shall be covered by the permit shield provided such amendments, modifications and changes meet the relevant requirements of 25 Pa Code Article III.

(d) The permit shield authorized under §127.516 is in effect for the permit terms and conditions in this Title V permit, including administrative operating permit amendments and minor operating permit modifications.

SECTION C. FACILITY WIDE REQUIREMENTS

1. Fugitive Emissions

[25 Pa Code §§123.1, 123.2, & AMR II Sec. VIII]

(a) No person may permit the emission into the outdoor atmosphere of a fugitive air contaminant from a source other than the following:

(1) Construction, or demolition of buildings or structures.

(2) Grading, paving and maintenance of roads and streets.

(3) Use of roads and streets. Emissions from material in or on trucks, railroad cars, and other vehicular equipment are not considered as emissions from use of roads and streets.

(4) Clearing of land.

(5) Stockpiling of materials.

(6) Sources and classes of sources other than those identified in paragraphs 1(a)(1)-1(a)(5) for which the Permittee has obtained a determination from AMS that fugitive emissions from the source, after appropriate control, meet the following requirements:

(i) The emissions are of minor significance with respect to causing air pollution.

(ii) The emissions are not preventing or interfering with the attainment or maintenance of an ambient air quality standard.

(b) The Permittee may not permit fugitive particulate matter from a source specified in paragraphs 1(a)(1)-1(a)(6) if the emissions are visible at the point the emissions pass outside the facility's property.

(c) The Permittee shall take all reasonable actions to prevent particulate matter emitted from a source identified in paragraphs 1(a)(1)-1(a)(6) from becoming airborne. These actions include, but are not limited to, the following:

(1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.

(2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.

(3) Paving and maintenance of roadways.

(4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

2. Odor Emissions Limitations

[25 Pa Code §123.31(b) & AMR V Sec. XX]

A person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the person on whose land the source is being operated.

3. Visible Emissions Limitations

[25 Pa Code §§123.41, 123.42, 123.43, and AMR II Sec. IV]

(a) A person at the Title V facility may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

(1) Equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour.

(2) Equal to or greater than 60% at any time.

(b) These emission limitations do not apply when: [25 Pa Code §123.42]

(1) The presence of uncombined water is the only reason for failure of the emission to meet the limitations.

(2) When the emission results from sources specified in 25 Pa Code §123.1(a)(1)-(9).

(3) When the emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions.

(c) The visible emissions may be measured using either of the following: [25 Pa Code §123.43]

(1) A device approved by AMS and maintained to provide accurate opacity measurements.

(2) Observers, trained and qualified to measure plume opacity with the naked eye or with the aid of devices approved by AMS.

(d) The emission limitations of 20% and 60% as stated above do not apply to facilities which have received a stricter emission limitation in a plan approval or operating permit as part of AMS's Best Available Technology determination, if that limitation is stated elsewhere in this permit.

4. Noise and Vibrations

[Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration)]**

(a) The Permittee shall not create or cause, or permit the creation of sound, sound originating from a property used for a non-residential purpose shall not exceed the following:

(1) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(2) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(b) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary.

5. Fuel Usage

[AMR III Sec. I & III. Compliance with the requirement specified in this streamlined permit condition assures compliance with the provisions specified in 25 Pa Code §123.22(e)]

(a) Unless specified in Section D, the Permittee shall use only natural gas, propane, or commercial fuel oil. The maximum sulfur content would be 0.2%, 0.3% and 0.5 % for number 2, 4, and 5 or 6 fuel oil, respectively.

(1) Beginning July 1, 2016, the maximum sulfur content of fuel oil, expressed as parts per million (ppm) by weight or percentage by weight, shall be: [25 Pa Code §123.22(e)(2)(i)]

Grades Commercial Fuel Oil (Consistent with ASTM 396)

No. 2 and lighter oil	500 ppm	(0.05%)
No. 4 oil	2,500 ppm	(0.25%)
No. 5, No. 6 and heavier oil	5,000 ppm	(0.5%)

(2) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to July 1, 2016, which met the applicable maximum allowable sulfur content for commercial fuel oil through June 30, 2016, in subparagraph (i) at the time it was stored, may be used by the ultimate consumer in this Commonwealth on and after July 1, 2016. [25 Pa Code §123.22(e)(2)(ii)]

(b) When it appears that the delivery of low sulfur fuel is, or is about to be, interrupted because of unavailability, accident, or other emergency conditions, AMS may authorize the use of an alternative fuel supply, involving the least adverse impact on air quality, for a period not to exceed 30 days. Longer periods of time of 120 days each may be authorized by AMS only after review and recommendation made by the Air Pollution Control Board for each extended period of time. Factors to be considered shall include the availability of alternate complying fuels, the availability of sulfur dioxide stack gas removal equipment, and the anticipated effect on air quality in the neighborhood, area and region. The Air Pollution Control Board, after a hearing, shall have the right to adjust, revoke, rescind, and make changes or modifications of any authorizations if there shall occur such change in the condition of availability of low sulfur fuel or the factors set forth in this subsection. [AMR III, Sec. III.C.]

6. Open Burning

[AMR II Sec. II]

The Permittee shall not permit the ignition or continuation of open burning of any materials.

7. Air Pollution Episode

[25 Pa Code Chapter 137 & AMR IV Sec. V, VI & VII]

The Permittee shall reduce its emission according to the approved curtailment plan, when the Philadelphia Health Commissioner or his designee declares an air pollution episode.

8. Modification of 112 Pollutants Which Are VOCs and PM-10

[25 Pa Code §127.512(j)]

Except when precluded by the Clean Air Act, the Permittee may modify the mixture of pollutants regulated under Section 112 of the Clean Air Act (42 U.S.C.A. §7412) which are VOCs or PM-10 if:

(a) The emission limitations of the permit are not violated, and

(b) The Permittee keeps a log which identifies the mixture of pollutants regulated under Section 112 and reports such changes to AMS in the next semiannual report.

9. Risk Management

[25 Pa Code §§127.441(d), 127.512(i) and 40 CFR Part 68]

(a) If required by Section 112(r) of the Clean Air Act, the Permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act and 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).

(b) When a regulated substance listed in 40 CFR §68.130 is present in a process at the Title V facility in more than the listed threshold quantity, the Permittee shall prepare and implement a risk management plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act.

(1) The Permittee shall submit the first RMP to AMS and EPA no later than the latest of the following:

(i) June 21, 1999;

(ii) Three years after the date on which a regulated toxic substance is first listed under §68.130; or

(iii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The Permittee shall submit any additional relevant information requested by AMS or EPA concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR §68.190.

(3) The Permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68 and guidance developed by EPA, including a checklist addressing the required elements of a complete RMP.

(c) As used in this permit condition, and defined in 40 CFR §68.3, the term “process” means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

(d) If the Title V facility is subject to 40 CFR Part 68, as part of the certification required under this permit, the Permittee shall:

(1) Submit a compliance schedule for satisfying the requirements of 40 CFR Part 68 by the date specified in 40 CFR §68.10(a); or

(2) Certify that the Title V facility is in compliance with all requirements of 40 CFR Part 68 including the registration and submission of the RMP.

(e) If the Title V facility is subject to 40 CFR Part 68, the Permittee shall maintain records supporting the implementation of an accidental release program for five years in accordance with 40 CFR §68.200.

(f) When the Title V facility is subject to the accidental release program requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68, appropriate enforcement action will be taken by AMS if:

(1) the Permittee fails to register and submit the RMP or a revised plan pursuant to 40 CFR Part 68.

(2) the Permittee fails to certify that the Title V facility is in compliance with the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68, and 25 Pa Code §127.512(i).

10. Stratospheric Ozone Protection

[25 Pa Code §127.441(b) and 40 CFR Part 82]

The permittee shall comply with the standards for labeling of products containing or manufactured with ozone depleting substances pursuant to 40 CFR 82, Subpart E. The Permittee shall satisfy applicable requirements of 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction, during the service, maintenance, repair and disposal of equipment containing Class I and Class II refrigerants or any non-exempt refrigerants regulated under such regulations except as provided for motor vehicle air conditioners in Subpart B. The Permittee shall be allowed to switch from any ozone depleting substance to any alternative that is listed in the Significant New Alternative Program (SNAP) pursuant to 40 CFR 82, Subpart G.

PES operates equipment that store greater than 50 lbs of refrigerant and are therefore subject to the following leak definitions per 40 CFR §82.157(c):

- 20% leak rate for commercial refrigeration equipment.
- 30% leak rate for industrial process refrigeration equipment.
- 10% leak rate for comfort cooling appliances or other appliances with a full charge of 50 or more pounds of refrigerant not previously covered.

PES operates a cafeteria refrigerant system that is subject to the 20% leak rate, two compressors that are subject to the 30% leak rate, and several Air Conditioning units that are subject to the 10% leak rate.

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11. Sampling, Testing and Monitoring Procedures

[25 Pa Code §§127.441(c) & 127.463(e); Chapter 139; & 114(a)(3), 504(b) of the Clean Air Act & AMR I Sec. III]

(a) The Permittee shall perform the emissions monitoring and analysis procedures or test methods for applicable requirements of this Title V permit. In addition to the sampling, testing and monitoring procedures specified in this permit, the Permittee shall comply with any additional applicable requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Unless alternative methodology is required by the Clean Air Act (including §§114(a)(3) or 504(b)) and regulations adopted thereunder, the sampling, testing and monitoring required by or used by the Permittee to demonstrate compliance with any applicable regulation or permit condition shall be conducted in accordance with the requirements of 25 Pa Code Chapter 139.

12. Recordkeeping Requirements

[25 Pa Code §127.511 & Chapter 135]

(a) The Permittee shall maintain and make available, upon request by AMS, the following records of monitored information:

(1) The date, place (as defined in the permit) and time of sampling or measurements.

(2) The dates the analyses were performed.

(3) The company or entity that performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of analyses.

(6) The operating conditions as existing at the time of sampling or measurement.

(b) The Permittee shall retain records of the required monitoring data and supporting information for at least five (5) years from the date of the monitoring, sample, measurement, report or application. Supporting information includes calibration and maintenance records and original strip-chart or electronic recordings for continuous monitoring instrumentation, and copies of reports required by the permit.

(c) The Permittee shall maintain and make available to AMS upon request, records including computerized records that may be necessary to comply with the reporting, recordkeeping, and emission statement requirements in 25 Pa Code Chapter 135 (relating to reporting of sources). In accordance with 25 Pa Code Chapter 135, §135.5, such records may include records of production, fuel usage, maintenance of production or pollution control equipment or other information determined by AMS to be necessary for identification and quantification of potential and actual air contaminant emissions. If direct recordkeeping is not possible or practical, sufficient records shall be kept to provide the needed information by indirect means.

13. Reporting Requirements

[25 Pa Code §§127.411(d), 127.442, 127.463(e) 127.511(c), & AMR I Sec. II]

(a) The Permittee shall comply with the reporting requirements for the applicable requirements specified in this Title V permit. In addition to the reporting requirements specified herein, the Permittee shall comply with any additional applicable reporting requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Pursuant to 25 Pa Code §127.511(c), the Permittee shall submit reports of required monitoring, on or before the following January 31 or July 31, whichever date is earlier, and every six months thereafter, covering the immediately preceding six month periods of July 1 - December 31 and January 1 - June 30 respectively. Instances of deviations (as defined in 25 Pa Code §121.1) from permit requirements shall be clearly identified in the reports. The reporting of deviations shall include the probable cause of the deviations and corrective actions or preventative measures taken, except that sources with continuous emission monitoring systems shall report according to the protocol established and approved by AMS for the source. The required reports shall be certified by a responsible official.

(c) Any records, reports or information obtained by AMS or referred to in a public hearing shall be made available to the public by AMS except for such records, reports or information for which the Permittee has shown cause that the documents could be considered confidential and protected from disclosure to the public under Section 4013.2 of the Pennsylvania Air Pollution Control Act and consistent with Section 112(d) and 114(c) of the Clean Air Act and 25 Pa Code §127.411(d). The Permittee may not request a claim of confidentiality for any emissions data generated for the Title V facility.

14. Philadelphia Toxic Notification

[AMR VI Sec. II & III]**

(a) The Permittee shall notify AMS of any changes to its “Notice of Toxic Air Contaminant Emissions” within 30 days of the changes.

(b) The requirements of this condition shall not apply to toxic air contaminants emitted from the following:

(1) Combustion process using only commercial fuel, including internal combustion engines;

(2) Retail dry cleaning operations;

(3) Retail and non-commercial storage and handling of motor fuels;

(4) Incineration of waste materials other than liquid, semi-liquid or solid by-product industrial wastes; and

(5) Incidental or minor sources including laboratory-scale operations, fireplaces and household appliances, cooking appliances, general comfort ventilation of occupied spaces, housecleaning operations, residential-scale solvent use and pesticide application, and such other sources or categories of sources which

are determined by AMS to be of minor significance for the purposes of this Regulation, or which AMS determines to be more appropriately evaluated by special survey methods.

15. Emission Statement

[25 Pa Code §135.21 & AMR I Sec. II.B.2.]

On or before March 1 of each year, the Permittee shall provide AMS with a statement, in a form as AMS may prescribe, for classes or categories of sources, showing the actual emissions from each source for the previous calendar year and a description of the method used to calculate the emissions. The statement shall contain emission information for the following pollutants:

(1) Oxides of nitrogen and VOCs. The statement for these pollutants shall contain a certification by a company officer or plant manager that the information contained in the statement is accurate. [25 Pa Code 135.21]

(2) Total suspended particulate, PM-10, sulfur oxides, carbon monoxide, hazardous air pollutants, and any other pollutants or information requested by AMS. [Phila. Code Sec. 3-301]

16. Reporting Of Malfunctions

[25 Pa. Code §127.511 & AMR I Sec. II.A.5.]

(a) The Permittee shall, within two (2) hours of knowledge of any occurrence, notify AMS, at 215-685-7572, during business hours and 215-686-4514 during other times, of any malfunction of the source(s) or associated air pollution control devices listed in Table A1 of this permit, which results in, or may result in, the emission of air contaminants in excess of the limitations specified in this permit, or regulation contained in 25 Pa Code Article III or the Philadelphia Air Management Code.

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(b) Malfunction(s) which occur at this Title V facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number.

(c) A written report shall be submitted to AMS within two (2) working days following the (notification of the) incident, and shall describe, at a minimum, the following:

(1) The malfunction(s).

(2) The emission(s).

(3) The duration.

(4) Any corrective action taken.

17. Compliance Certification

[25 Pa Code §127.513]

(a) The Permittee shall submit to AMS and EPA Region III a certification of compliance with each term and condition of this permit including the emission limitations, standards or work practices. This certification shall be submitted by March 1 of each year for the period of the previous calendar year and shall include:

(1) The identification of each term or condition of the permit that is the basis of the certification.

(2) The compliance status.

(3) The methods used for determining the compliance status of the source, currently and over the reporting period.

(4) Whether compliance was continuous or intermittent.

(b) The compliance certifications shall be submitted to AMS and EPA in accordance with the Submissions requirement of this permit specified in Condition #17 of this section.

18. Submissions

[25 Pa Code §§127.402(d) and 127.513(1)]

(a) Reports, test data, monitoring data, notifications, and requests for renewal of the permit shall be submitted to:

Chief of Source Registration
Air Management Services
321 University Ave.
Philadelphia, PA 19104-4543

(b) Any report or notification for the EPA Administrator or EPA Region III should be addressed to:

Associate Director
Office of Enforcement and Permits Review (3AP10)
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(c) An application, form, report or compliance certification submitted pursuant to this permit condition shall contain a certification by a responsible official as to the truth, accuracy, and completeness as required under 25 Pa Code §127.402(d).

(d) Unless otherwise required by the Clean Air Act or regulations adopted thereunder, this certification and any other certification required pursuant to this permit shall state that based on information and belief formed after reasonable inquiry, the statements and information in the documents are true, accurate, and complete.

SECTION D. SOURCE SPECIFIC REQUIREMENTS

1. Facility

(a) Work Practice Standards

(1) SO2 Sources [SO2 Operating Permit No. SO2-95-039]

(i) The Permittee shall operate its sources consistent with all parameters established in the dispersion model submitted to AMS on August 6, 1999 and listed in the following tables A3 and A4 of SO2 Operating Permit No. SO2-95-039:

TABLE A3-FACILITY INVENTORY LIST (Girard Point Stack Parameters)

Stack ID	COMMENT	UTME	UTMN	Base elevation	Height	Diameter
S-111	1232 FCCU Feed Preheat Furnace B104	482.181	4417.285	4.570	35.052	2.438
S-112	1332 htr H1	482.181	4416.764	4.570	27.432	1.981
S-113	Heater 602	482.176	4416.772	4.570	26.822	1.448
S-114	Heater 601	482.190	4416.808	4.570	25.603	1.372
S-115	Heater 600	482.176	4416.808	4.570	26.822	1.448
S-116	1332 htr H2	482.194	4416.762	4.570	26.822	1.372
S-117	Heater 400 & 401 comb	482.142	4416.809	4.570	30.480	2.286
S-119	1332 htr H3	482.186	4416.756	4.570	27.432	1.981
S-120	AVU 137 UNIT F1 & F2 FUEL BURNING	481.793	4417.475	4.570	60.960	3.962
S-122	AVU 137 UNIT F3 FUEL BURNING	481.774	4417.498	4.570	23.012	1.372
S-123A	B101 htr 231 Stack A	482.150	4416.710	4.570	22.860	1.052
S-123B	B101 htr 231 Stack B	482.153	4416.705	4.570	22.860	1.052
S-123C	B101 htr 231 Stack C	482.156	4416.701	4.570	22.860	1.052
S-124	H1 htr 433 FUEL BURNING	482.072	4417.018	4.570	41.453	2.896
S-125	#3 BOILER HOUSE stack	481.845	4416.765	4.570	60.960	5.791
S-126	Boiler No. 45 Stack	481.845	4416.765	4.570	45.720	1.962
S-153	1231 Flare	482.348	4417.595	4.570	62.880	1.110
S-154	1232 Flare	482.300	4417.549	4.570	60.360	1.110
S-155	433 Flare	481.960	4417.431	4.570	81.700	1.110
S-156	1232 FCCU Unit/ CO boiler stack	482.096	4417.363	4.570	45.720	2.896

TABLE A4-FACILITY INVENTORY LIST (Point Breeze Stack Parameters)

Stack ID	COMMENT	UTME (km)	UTMN (km)	Base elevation (m)	Height (m)	Diameter (m)
S-801	210A – HTR H101	482.829	4418.297	7.250	41.605	2.254
S-802	210B – HTR H201	482.838	4418.290	7.250	60.817	2.896
S-803	210C – HTR 13H1	482.910	4418.269	7.470	66.396	3.232
S-804	UNIT 859 1H-1 Stack				36.347	1.778
S-807	MAGNAFORMER 860 - HTRS 2H1, 2H2 & 2H4, STACK A common	482.868	4418.026	5.790	35.636	1.905
S-808	MAGNAFORMER 860 - 2H1, 2H2 & 2H4 STACK B common	482.875	4418.022	5.790	35.636	1.905
S-809	MAGNAFORMER 860 - HTR 2H3 AND 2H5 STACK A common	482.865	4418.014	5.790	33.528	2.045
S-810	MAGNAFORMER 860 - HTRS 2H3 & 2H5 – STACK B common	482.872	4418.010	5.790	33.528	2.045
S-811	MAGNAFORMER 860 - HTR 2H6	482.882	4418.052	5.760	33.528	1.270
S-812	MAGNAFORMER 860 - HTR 2H7	482.885	4418.058	5.760	33.528	1.372
S-813	MAGNAFORMER 860 HTR 2H8	482.888	4418.063	5.760	33.528	1.372
S-818	MAGNAFORMER 864 - HTR PH1	483.132	4418.262	7.890	39.091	1.486
S-819	MAGNAFORMER 864 - HTR PH2 & HTR PH4	483.111	4418.263	7.890	33.528	2.122
S-820	MAGNAFORMER 864 - HTR PH3	483.101	4418.255	7.890	33.528	2.046
S-822	MAGNAFORMER 864 - HTR PH5	483.101	4418.269	7.890	33.528	2.046
S-822	MAGNAFORMER 864 - HTR PH7	483.142	4418.269	7.890	33.528	1.372
S-823	MAGNAFORMER 864 - HTR PH11	483.151	4418.268	7.890	33.528	1.486
S-824	MAGNAFORMER 864 - HTR PH12	483.163	4418.272	7.890	36.576	1.626
S-825	DISTILLATE HDS 865 - HTR 11H1	483.106	4418.379	7.800	42.680	1.830
S-826	DISTILLATE HDS 865 - HTR 11H2	483.119	4418.379	7.800	55.169	1.880
S-827	GAS OIL HDS 866 - HTR 12H1	483.145	4418.382	7.830	38.100	1.524
S-828	FCCU 868 8H-101	483.210	4418.154	6.710	35.947	1.308
S-8701	LSD HDS UNIT 870 – HTR H1	483.166	4418.139	3.962	54.864	1.575

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S-8702	LSD HDS UNIT 870 – HTR H2	483.316	4418.152	3.962	54.864	1.016
S-8703	LSD HDS UNIT 870 – HTR H3	483.219	4418.184	3.962	45.720	1.829
S-976	NORTH FLARE - SOUTH YARD	482.807	4417.911	5.300	90.500	2.930
S-977	SOUTH FLARE - SOUTH YARD	482.719	4417.582	3.320	90.130	2.930
S-985	FCCU RETURN STACK 868 8H-103	483.214	4418.253	6.710	60.960	2.700
S-983	UNIT 867 SRU COMBUSTION	482.648	4418.010	5.670	70.100	1.070

(ii) The Permittee shall remodel to demonstrate compliance with the National Ambient Air Quality Standard (NAAQS) for SO_2 if AMS has cause to believe that the attainment or maintenance of the standard is in jeopardy.

(2) Process unit turnarounds. Purging of volatile organic compounds during depressurization of reactors, fractionating columns, pipes, or vessels during unit shut-down, repair, inspection, or startup shall be performed in such a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the internal pressure in such equipment reaches 19.7 psia (136 kilopascals). [AMS letter dated 4/14/94; 25 PA Code §129.55(d)]

(3) The Permittee may burn non-commercial fuels in accordance with Air Management Code Section 3-207(2), AMR III, Section 1.A and 25 PA Code §123.22(e)(3).

(4) All Processes must vent to control devices specified in the process flow diagrams included in Section A. of this permit unless changes to the facility's configuration are made pursuant a valid plan approval or installation permit.

(5) Each boiler and heater shall only burn fuel types as listed in Table A-1.

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(6) Greenhouse gas (GHG) emissions shall be derived as required by the Mandatory Greenhouse Gas Reporting rule codified as 40 CFR Part 98. The GHG emission factors used for sources in this section were derived from the methods described in 40 CFR 98 Subpart C for General Stationary Fuel Combustion Sources, which includes an analysis of the composition of the refinery fuel gas being combusted for each heater. The GHG emission factor for each heater was derived from the emission factors in Subpart C and the higher heating value of the refinery fuel gas being used. All CO2e emissions limitations in this permit were calculated using the future projected annual firing duty of each heater or boiler and the specific CO2e emission factor. This method is at least as accurate as the EPA AP-42 emission factor for CO2 as this factor only reflects the combustion of natural gas.

(b) Testing Requirements

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[25 PA Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Method 7E shall be used for nitrogen oxides.

(ii) U.S.E.P.A. Reference Method 5 and 202 shall be used for particulate matter.

(iii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iv) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(v) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(vi) U.S.E.P.A Reference Method 25A shall be used for volatile organic compounds.

(vii) Performance Specification 7, Method 11 shall be used for hydrogen sulfide.

(3) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5, 7E, and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 PA Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(4) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3 and the Permittee shall only use test methods authorized in accordance with 25 Pa. Code §139.

(5) SO2 Sources

(i) The Permittee shall test for sulfur content of the refinery fuel gas burned on a daily basis.

(ii) The Permittee shall test for sulfur content of the fuel upon receipt of each fuel oil delivery.

(iii) ASTM 4294 for sulfur in fuel can be used when the Permittee supports the data with a quality control plan and demonstrates the ability to accurately perform this test.

(iv) ASTM D5453 shall be used to determine hydrogen sulfide content of the fuel gas streams. The Permittee shall dedicate separate test equipment for liquid streams and gaseous streams. The Permittee shall calibrate the Antek equipment before each use. ASTM 5504 may be used when the Antek equipment is out of service or unavailable.

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following :

(1) visible and fugitive emissions during operation daily.

(2) All CEMs shall meet the requirements of 25 PA Code Chapter 139.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5, 139, and SO2 Operating Permit No. SO2-95-039]

The Permittee shall keep the following records:

(1) Records of the daily inspection for visible and fugitive emissions and any corrective actions taken.

(2) Baseline operating records, sampling data concurrent with any emission tests, and any supporting calculations used to determine emissions;

(3) Records of the occurrence or duration of each startup, shutdown, and malfunction of operation of a combustion unit;

(4) Records of the occurrence, duration, and cause (if known) of each malfunction of air pollution equipment or monitoring equipment used to comply with the restrictions or monitoring provisions of this permit;

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(5) For monitoring equipment used to comply with the monitoring requirements of this permit, records documenting the completion of installation, calibration checks, and maintenance.

(e) Reporting Requirements

[25 Pa Code §127.511(c) & AMR I Section II]

(1) The Permittee shall quarterly submit to AMS reports of each CEMs in accordance to Chapter 139 and PA Continuous Source Monitoring Manual.

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(2) SO2 Sources

(i) The Permittee shall submit to AMS the CEM report for SO2 in accordance to Chapter 139 procedure quarterly. The report shall contain, at the minimum, the following information:

(A) The date, time duration, and magnitude of excess emissions.

(B) The reason for any excessive emissions.

(C) Corrective action taken.

(D) For each day, the number of valid monitoring hours, the causes for any invalid monitoring hours contained in daily average and corrective actions taken.

(ii) The results of all quality control and quality assurance actions taken. The Permittee shall submit to AMS quarterly reports of the performance of the facility using the City of Philadelphia Monitoring Report Form as required in Section C.11 of this permit. These reports shall be submitted on or before January 31, April 30, July 31, and October 31 for the previous quarter. These reports shall consist of the following:

(A) A description of any deviations from permit requirements that occurred during the three-month reporting period, the probable cause of such deviations, and corrective actions or preventive measures taken;

(B) A description of any malfunction of processes, air pollution control equipment, or monitoring equipment that occurred during the three-month reporting period, the date and duration of the incidents, the probable cause of the incidents, and actions taken to remediate such incidents;

(C) A description of any sources which have not operated in more than one year.

(3) Annual compliance certification in accordance with Section C.16.

(4) General Provisions Applicability to 40 CFR 63 Subparts F, G, and H

(i) Table 3 of 40 CFR 63 Subpart F specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subparts F, G, and H. [40 CFR 63.103(a)]

(ii) Table 6 of 40 CFR 63 Subpart CC specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subpart CC. [40 CFR 63.642(c)]

(iii) Table 1 of 40 CFR 63 Subpart Q specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subpart Q. [40 CFR 63.400(b)]

(iv) Owners and operators of sources subject to 40 CFR Subpart Y must comply with the requirements of 40 CFR Subpart A in accordance with the provisions for applicability of 40 CFR subpart A to 40 CFR Subpart Y Table 1. [40 CFR 63.560(c)]

(5) Semi-Annual Progress Report in accordance with Consent Decree Order 05-CV-2866. Each report shall contain the following:

(i) Progess report on the implementation of the requirement s of “Affirmative Relief/Environmental Projects”.

(ii) A summary of the emission data

(iii) Description of any problems anticipated with respect to meeting the requirements of Section V of the Consent Decree.

(iv) Any additional matter that the Permittee believes should be brought to the attention of EPA and AMS.

(6) The above Semi-Annual Progess Report shall be certified by the person responsible for the environmental management at the facility or by person responsible for overseeing the implementation of the Decree as follows: [Decree Order 05-CV-2866]

“I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.”

2. Group 01 – Boilers

(A) Girard Point equipment numbered CU018, CU020, CU021, and CU022.

(a) Emission Limitations

(1) Carbon Monoxide (CO) emissions

(i) Each unit may not exceed 1% by volume of exhaust gases. [AMR VIII, Section II]

(ii) CO emissions from Boiler #45 (CU-022) shall not exceed 3.9 ppmvd @ 7% O2 [25 PA Code 127.1] per Plan Approval 15247.

(2) Emission from the No. 3 Boilerhouse (CU-018, CU-020, CU-021, CU-022) shall not exceed the following in any rolling 12-month period. [AMS Plan Approval 08080, 11/2/10]

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(i) 970.5 tons of NOx on rolling 12-month period [AMS Plan Approval 15271, dated 4/25/2017]

(ii) 152.5 tons of SO2 on rolling 12-month period

(iii) 416.8 tons of CO on rolling 12-month period

(iv) 50.6 tons of PM/PM10 on rolling 12-month period

(v) 34.0 tons of VOC on rolling 12-month period

(3) NOx emissions from Boiler #45 (CU-022) during periods of startup, shutdown, and maintenance shall not exceed 10.0 lbs/hr. [AMS Plan Approval No. 15247, 5/19/2016]

(4) Boiler #45 (CU-022) shall be limited to the following emissions on a rolling 12-month average. [AMS Plan Approval 14149, 5/16/2014]

(i) Sufuric Acid (H_2SO_4) emissions shall be limited to 2.32 tons per year.

(ii) Lead (Pb) emissions shall be limited to 7.61E-04 tons per year.

(iii) Ammonia (NH_3) emissions shall be limited to 3.44 tons per year.

(iv) GHG emissions shall be limited to 182,774 tons per year as CO_2e.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(5) The Permittee shall ensure that the sources listed below do not exceed the following emission limitations:

Source ID	CO	VOC	Particulate[a]	PM-10	NOx	SO_2[d]	Rolling 365 Day Average SO_2 Emission Rate[d]
Lbs Pollutant/MMBTU							
CU018 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU020 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU021 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU022 (GP)	---[c]	0.00094[e]	0.0040[e]	---	0.012[e]	---	---
Tons Pollutant/Year							
CU018 (GP)	---	1.0[a]	---	---	---	---	---
CU020 (GP)	---	1.0[a]	---	---	---	---	---
CU021 (GP)	---	2.7[a]	---	---	---	---	---
CU022 (GP)	5.69[e]	1.44[e]	6.13[e]	---	5.06[e]	15.15[e]	---

[a] - Consent Decree, AMS Plan Approval 08080 dated 11/2/10. The emission are based on rolling 365-day basis. NOx emissions are limited to 0.25 lb/MMBTU on rolling 30-operating-day average using the hourly CEM data for each boiler in accordance with RACT 2 Plan Approval IP16-000264 dated 12/30/16.

[b] - Complies with 25 PA Code 123.11. This streamlined permit condition assures compliance with AMS Regulation II, Section V.

[c] - This source shall comply with the permit condition in 2.(a)(1) of this section.

[d] - SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA code 123.22, AMS Permit 98001 and AMS approval letter dated March 18, 1998, and AMS Plan Approval 08080 dated 11/2/10

[e] - AMS Plan Approval No. 14149 dated 9/2/14, establishes limits for CU022 based on 3-hour average stack tests for VOC and PM and hourly average CEMs data for NOx to

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comply with applicable BAT limits. Amended by AMS Plan Approval No. 15247, dated 5/19/16. Annual emissions for other pollutants are limited to the following: 2.32 TPY H_2SO_4, 7.61E-04 TPY Pb, 3.44 TPY Ammonia[f], 182,774 TPY GHG as CO_2e

[f] - Ammonia slip from Boiler #45 shall not exceed 5.0 ppmvd @ 3% 02 [25 Pa Code 127.1] per AMS Plan Approval No. 15247.

GP - Girard Point

(b) Work Practice Standards

(1) NOx Affected Sources

(i) The Permittee of each NO_x budget source and each NO_x budget unit at the source shall hold NO_x allowances available for compliance deductions under 25 Pa Code 145.54 (relating to compliance), as of the NO_x allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NO_x emissions for the control period from the unit, as determined in accordance with 25 Pa Code 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under 25 Pa Code 145.42(e) (relating to NO_x allowance allocation) for the control period or to account for excess emissions for a prior control period under 25 Pa Code 145.54(d) or to account for withdrawal from the NO_x budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under 25 Pa Code 145.86 and 145.87 (relating to withdrawal from NO_x Budget Trading Program; and opt-in source change in regulatory status). [25 Pa Code § 145.6(b)(1)]

(ii) Each ton of NOx emitted in excess of the NOx budget emissions limitation shall constitute a separate violation. [25 Pa Code §145.6(b)(2)]

(iii) The Permittee of a NO_x budget unit that has excess emissions in any control period shall do the following: [25 Pa Code § 145.6(c)]

(A) Surrender the NOx allowances required for deduction under 25 Pa Code §145.54(d)(1)

(B) Pay any fine penalty or assessment or comply with other remedy imposed under 25 Pa Code § 145.54(d)(3) of the act.

(iv) Except as provided under 25 Pa Code 145.11 (relating to alternate NOx authorized account representative), each NOx budget source, including all NOx budget units at the source, shall have only one, NOx authorized account representative, with regard to all matters under the NOx Budget Trading Program concerning the source or any NOx budget unit at the source. [25 Pa Code §145.10(a)]

(v) Each submission under the NOx Budget Trading Program shall be submitted, signed and certified by the NOx authorized account representative for each NOx budget source on behalf of which the submission is made. [25 Pa Code 145.10(e)]

(vi) For more information on NOx affected sources, see condition (e)(4) of this section.

(2) Each No. 3 Boilerhouse boiler (CU018, CU020, & CU021, & CU022) shall burn only refinery fuel gas. [AMS Plan Approval 08080, 11/2/10, AMS Plan

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Approval 06050A dated 3/20/2015, AMS Plan Approval 15247 dated 5/19/2016]

(3) Total combustion of acid soluble oil (ASO) at the No. 3 Boiler House shall not exceed 8.92 barrels per day on a rolling 365-day basis. Total combustion of ASO system line wash material at the No. 3 Boiler House shall not exceed 35.7 barrels per day on a rolling 365-day basis. [AMS Plan Approval 08080, 11/2/10]

(4) Total heat input to the No. 3 Boilerhouse (CU-018, CU-020, CU-021, CU-022) shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis. [AMS Plan Approval 08080, 11/2/10, AMS Plan Approval 15247 dated 5/19/2016]

(5) The hourly heat input to Boiler Nos. 37 (CU-018) and 39 (CU-020) shall be capped at 495 MMBTU/hr for each boiler. The hourly heat input to Boiler No. 40 (CU-021) shall be capped at 660 MMBTU/hr. The hourly heat input to Boiler No. 45 (CU-022) shall be capped at 350 MMBTU/hr. [Case-by-case RACT, 25 PA Code Sections 129.91-95, AMS Plan Approval 08080, 11/2/10, AMS Plan Approval 14149, dated 9/2/14, AMS Plan Approval 15247 dated 5/19/2016]

(6) The No. 3 Boilerhouse (CU-018, CU-020, CU-021, CU-022) shall be equipped with continuous monitors and recorders for NOx and O2. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139.

(7) An annual adjustment or tune-up shall be performed on the combustion process for each boiler by December 31st of each year not to exceed 12 months between tunings. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2G and 3, 25 PA Code §129.93(b)(2)-(5)] The actual test may be performed anywhere between October 1 and December 31 for any source.

(8) The hydrogen sulfide content of the refinery fuel gas burned in the boilers is limited to 0.1 gr/dscf. [AMS Permit 94329 dated December 27, 1994, paragraph 3, AMS Permit 94145 to 94150 dated September 26, 1994, paragraph 3]

(9) The hydrogen sulfide content of refinery fuel gas burned in boiler 45 is limited to 162 ppmv (determined hourly on a 3-hour rolling average basis) and 60 ppmv (determined daily on a 365 successive calendar day rolling average basis. [40 CFR 60.102a(g)(1)(ii), AMS Plan Approval 14149, dated 9/2/14, AMS Plan Approval 15247 dated 5/19/2016]

(10) The Permittee shall operate Low NOx burners on CU018, CU020, CU021, and CU022 (Girard Point). [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2A, AMS Plan Approval 15247 dated 5/19/2016]

(11) CU018, CU020, CU021, and CU022 shall be operated with Flue Gas Recirculation (FGR). [Case by case RACT, 25 Pa Code §§129.91-95, Section 2A, AMS Plan Approval No. 15247, dated 5/19/16]

(i) Annual checks of CO level in the #3 Boilerhouse stack shall be conducted using a handheld instrument to assure performance of the CO oxidation catalyst.

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(12) CU022 shall be equipped with CO oxidation catalyst, Selective Catalytic Reduction (SCR), and wet electrostatic precipitator (WESP) [AMS Plan Approval No. 15247, dated 5/19/16]

(13) The Permittee shall ensure that all fuel burning sources are capped at the heat input specified in the table below:

Source ID	Hourly Heat Input Cap (MMBTU/hr)	Rolling 12-month Heat Input Cap (MMBTU/yr)
CU018 (GP)	495[a]	---
CU020 (GP)	495[a]	---
CU021 (GP)	660[a]	---
CU022 (GP)	350	---

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2C.

(14) Beginning January 31, 2016, the Permittee shall conduct tune-up for each boiler to demonstrate compliance with 40 CFR 63 Subpart DDDDD

(i) Tune-ups shall be conduction every 5 years on boiler with continuous oxygen trim system. [40 CFR 63.7540(a)(12)]

(ii) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(A) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(B) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(C) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(D) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(E) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments

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are made). Measurements may be taken using a portable CO analyzer;

(iii) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Section D.2(b)(12)(ii)(A) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(iv) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

(15) Periods of startup, shutdown, and maintenance shall not exceed 200 hours per rolling 12 month period for Boiler #45 [AMS Plan Approval No. 15247, 5/19/2016]

(c) Testing Requirements

[25 PA Code §139]

(1) NOx Affected Sources

(i) The Permittee shall comply with the initial certification and recertification procedures in accordance with 25 Pa Code §145.71. [25 Pa Code §145.71(b)]

(ii) The NOx authorized account representative shall submit an application to the Department within 45 days after completing all initial certification or recertification tests required under 25 Pa Code 145.71 (relating to initial certification and recertification procedures) including the information required under 40 CFR Part 75, Subpart H. [25 Pa Code §145.74(c)]

(2) Compliance with CO, PM/PM10/PM2.5 and Ammonia emission shall be demonstrated every five years from the previous stack test. [AMS Plan Approval No. 14149, 9/2/2014 AMS Plan Approval No. 15247, dated 5/19/16]

(i) The operating parameter (maximum voltage, maximum ammonia injection, and minimum inlet temperature) may be modified through subsequent AMS approved stack tests.

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance.

(2) Compliance with the NOx emission limitations listed in Section D.2(a)(3) shall be calculated on a 30-day rolling average based on hourly averages of CEM data. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 4B]

(3) The fuel type and fuel usage for each boiler.

(4) NOx emissions from Boilerhouse No. 3 shall be monitored using a continuous emission monitoring system (CEMS) and will measure O2 and NOx concentrations. [AMS Plan Approval 16000264, 12/30/2016]

(5) The Permittee shall monitor all fuel input to boilers with BTU limitations in Section D.2(b)(4),(5), & (11) on a daily basis to ensure capacity limits are not

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exceeded or install fuel limiting devices on the boilers to keep capacities below the allowable limits. The compliance method must be in place by June 30th 2000. [Case-by-case RACT, 25 Pa Code §§129.91-95]

(6) The Permittee shall demonstrate compliance with the SO2 emission limitations by monitoring the sulfur content of the fuel burned. [SO2 Operating Permit No. SO2-95-039, and Permits 94145 to 94150 dated September 26, 1994, paragraph 6]

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(7) NOx Affected Sources

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(i) 25 Pa Code 145.6(a) - Standard requirements – Monitoring Requirements.

(A) The Permittee and the NOx authorized account representative of each NOx budget source and each NOx budget unit at the source shall comply with the monitoring requirements of 25 Pa Code 145.70-145.76 (relating to recordkeeping and recording requirements).

(B) The emissions measurements recorded and reported in accordance with 25 Pa Code 145.70-145.76 shall be used to determine compliance by the unit with the NOx budget emissions limitation under 25 Pa Code 145.6(c).

(ii) 25 Pa Code 145.6(b) - Standard requirements – NOx Requirements.

(A) The Permittee of each NOx budget source and each NOx budget unit at the source shall hold NOx allowances available for compliance deductions under 25 Pa Code 145.54 (relating to compliance), as of the NOx allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with 25 Pa Code 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under 25 Pa Code 145.42(e) (relating to NOx allowance allocation) for the control period or to account for excess emissions for a prior control period under 25 Pa Code 145.54(d) or to account for withdrawal from the NOx budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under 25 Pa Code 145.86 and 145.87 (relating to withdrawal from NOx Budget Trading Program; and opt-in source change in regulatory status).

(B) A NOx budget unit shall be subject to the above requirements in Section D.2.(d)(7) (ii)(A) starting on May 1, 2003, or the date on which the unit commences operation, whichever is later.

(v) The Permittee of a unit that is not subject to an acid rain emissions limitation shall comply with requirements of 40 CFR 75.62, except that the monitoring plan is only required to include the information required by 40 CFR Part 75, Subpart H. [25 Pa Code §145.74(b)(2)]

(8) The Permittee shall daily monitor the fuel type and fuel usage on a daily basis of the No 3 Boilerhouse to ensure the heat inputs limits are not exceeded. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 02184 dated 5/13/04, AMS Plan Approval 08080, 11/2/10, AMS Plan Approval 15271 dated 4/25/17]

(9) The Permittee shall demonstrate compliance with SO2 limits of the No. 3 Boilerhouse boilers by monitoring the sulfur content of fuel burned. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO2 Operating Permit No. SO2-95-039, [AMS Plan Approval 08080, 11/2/10]

(9) The Permittee shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas to No. 3 Boilerhouse with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 25 PA Code Chapter 139 and 40 CFR 60.105(a)(4). [AMS Plan Approval 08080, 11/2/10]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Fuel type and fuel usage of the fuel burned on a daily basis.

(2) Records of annual adjustments or tuneups. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5; 25 PA Code §129.93(b)(3)(i)-(v)]

(3) CEM recorder records.

(4) NOx Affected Sources [NOx Operating Permit]

(i) The Permittee shall monitor and report NOx emissions in accordance with 40 CFR Part 96, Subpart HHHH (relating to monitoring and reporting), and establish a CAIR-authorized account representative and general account, in accordance with 40 CFR Part 96, Subparts BBBB and FFFF (relating to CAIR designated representative for CAIR NOx Ozone Season sources; and CAIR NOx Ozone Season Allowance Tracking System), incorporated into Subchapter D by reference, for the purposes of ensuring continued compliance with the non-EGU NOx Trading Program budget limitation 25 Pa Code 145.8(d)(1) and of retiring CAIR NOx Ozone Season allowances. [25 Pa Code 145.8(d)(2)]

(ii) A CAIR-authorized account representative and general account shall be established in accordance with 40 CFR Part 96, Subparts BB and FF (relating to CAIR designated representative for CAIR NOx sources; and CAIR NOx allowance tracking system), incorporated into 25 Pa Code 145 Subchapter D by reference, for the purpose of retiring CAIR NOx allowances. [25 Pa Code 145.8(d)(3)]

(iii) If the combined NOx emissions from all units subject to 25 Pa Code 145 (in the state of Pennsylvania) exceed 3,438 tons in an ozone season, then a unit whose actual emissions exceed the unit's allowable emissions for that ozone season, as determined under 25 Pa Code 145.8(d)(5), shall surrender to the Pa DEP by April 30 of the year following the ozone season one CAIR NOx Ozone Season allowance and one CAIR NOx allowance for each ton of excess emissions. A unit whose excess emissions are 0.5 ton or greater of the next excess ton shall surrender 1 full ton of CAIR NOx allowances (banked or current) for that excess emission. Units under common ownership may include the allowable and actual emissions from multiple units to determine whether a unit must surrender allowances. [25 Pa Code 145.8(d)(6)]

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(iv) If a facility's allowable emissions exceed the facility's actual emissions for an ozone season, the owner or operator may deduct the difference or any portion of the difference from the actual emissions of units under the facility's common control that are subject to § § 129.201—129.203 (relating to boilers; stationary combustion turbines; and stationary internal combustion engines). [25 Pa Code 145.8(d)(11)]

(5) The Permittee shall keep the following records for the No 3 Boilerhouse boilers: [AMS Plan Approval 08080, 11/2/10]

(i) Daily fuel type, fuel usage, and refinery fuel gas heating value for each boiler.

(ii) No. 3 Boilerhouse rolling 12-month emissions on a monthly basis to demonstrate compliance with the emission limits. NOx emissions shall be determined based on CEM data. Other emissions shall be determined based on AMS-approved stack test data, AP-42 emissions factors, or other AMS-approved emission factors. When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used. [AMS Plan Approval No. 15271, dated 4/25/17]

(iii) Total heat input to the No. 3 Boilerhouse in MMBTU per year (HHV) on a rolling 365-day basis.

(iv) Annual stack CO check using handheld instruments.

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(6) Maintain on-site and submit, if requested by the Administrator, an annual report containing the following information to demonstrate compliance with 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)(10)(vi)]

(i) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the process heater;

(ii) A description of any corrective actions taken as a part of the tune-up; and

(iii) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(f) Reporting Requirements

(1) NOx Affected Sources

(i) To surrender allowances under 25 Pa Code 145.8(d)(6), the Permittee shall surrender the required CAIR NOx Ozone Season allowances and CAIR NOx allowances to the Pa DEP designated NOx allowance tracking system account and provide to the PA DEP, in writing, the following: [25 Pa Code 145.8(d)(7)]

(A) The serial number of each allowance surrendered.

(B) The calculations used to determine the quantity of allowances required to be surrendered.

(ii) If the Permittee fails to comply with 25 Pa Code 145.8(d)(6), Permittee shall by June 30 surrender three CAIR NOx Ozone Season allowances and three CAIR NOx allowances of the current or later year vintage for each ton of

excess emissions as calculated under 25 Pa Code 145.8(d)(6). [25 Pa Code 145.8(d)(8)]

(iii) The surrender of CAIR NOx ozone season allowances and CAIR NOx allowances under 25 Pa Code 145.8(d)(6) does not affect the liability of the owner or operator of the unit for any fine, penalty or assessment, or an obligation to comply with any other remedy for the same violation, under the CAA or the act. [25 Pa Code 145.8(d)(9)]

(A) For purposes of determining the number of days of violation, if a facility has excess emissions for the period May 1 through September 30, each day in that period (153 days) constitutes a day in violation unless the owner or operator of the unit demonstrates that a lesser number of days should be considered.

(B) Each ton of excess emissions is a separate violation.

(2) For each boiler, the Permittee shall submit the following:

(i) Submit all notifications required by 40 CFR 63.7545;

(ii) Submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD;

(iii) Submit immediate startup, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

(iv) Submit a signed statement in the Notification of Compliance Status report that indicates that the Permittee conducted a tune-up of the unit. [40 CFR 63.7530(d)]

(v) The Notification of Compliance Status shall include a signed certification that the energy assessment was completed according to 40 CFR 63 Subpart DDDDD Table and is an accurate depiction of your facility at the time of the assessment. [40 CFR 63.7530(e)]

(B) Point Breeze equipment numbered CU-025 (Boiler No. 1).

(a) Emission Limitations

(1) Particulate matter from Boiler No. 1 may not exceed 0.10 lbs/MMBtu.

(2) Carbon Monoxide (CO) emissions from Boiler No. 1 may not exceed 1% by volume of exhaust gases. [AMR VIII]

(b) Work Practice Standards

(1) Boiler No. 1 shall be operated and maintained in accordance with both the manufacturer's specifications and the specifications as approved by AMS Installation Permit No. 11276.

(2) Boiler No. 1 shall only burn No. 2 fuel oil or natural gas.

(3) The maximum sulfur content of No. 2 fuel oil shall be 15 ppm by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

(4) If visible emissions are detected, adjustments shall be made to the unit to eliminate the visible emissions or a certified smoke reader shall be used to determine the opacity of the emissions.

(c) Monitoring Requirements

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(1) Visible emissions from Boiler No. 1 shall be monitored daily. The visual check does not need to meet the requirements of U.S.E.P.A Reference Method 9.

(2) PES shall monitor monthly fuel usage to Boiler No. 1.

(d) Recordkeeping Requirements

(1) PES shall record monthly fuel usage and document the sulfur content of fuel oil used in Boiler No. 1.

(2) PES shall keep records of the daily visual checks for Boiler No. 1.

(3) All records shall be kept for a period of five (5) years and produced upon request.

3. Group 02 – Process Heaters

Girard Point equipment numbered CU004, CU005, CU006, CU007, CU008, CU009, CU010, CU011, CU012, CU013, CU014, CU015, CU016, and CU017. Point Breeze equipment numbered CU101, CU102, CU103, CU108, CU109, CU110, CU111, CU112, CU113, CU114, CU115, CU118, CU123, CU124, CU125, CU126, CU127, CU128, CU129, CU-137, CU-138, CU-139, and CU-140.

(a) Emission Limitations

(1) Each unit shall not burn any fuel gas that contains hydrogen sulfide (H2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104(a)(1), Consent Decree Order 05-CV-2866]

(2) Carbon Monoxide emissions from each heater shall not exceed 1% of the exhaust gases [AMR VIII]

(3) Emission from the 1332 CRU H-2 Heater (CU-009) shall not exceed as follows:

(i) Carbon Monoxide emissions shall not exceed 400 ppmdv at 3% oxygen, [40 CFR 63 Subpart DDDDD, Table 1, 25 Pa Code §§127.1, AMS Plan Approval 05124 dated 10/4/05]

(ii) Nitrogen Oxide emission shall not exceed 0.04 lbs/MMBTU at 3% O2 (3-run average) and 10.51 tons per rolling 12 month period upon completion of the Tier 3 project. [25 Pa Code 127.1, AMS Plan Approval 05124 dated 10/4/05, AMS Plan Approval No. 15253, 9/22/16]

(iii) VOC Emissions shall not exceed 1.00 ton per rolling 12 month period [AMS Plan Approval JP16-000264, 12/30/16]

(iv) PM emissions from the heater shall not exceed 0.10 lbs/MMBtu gross heat input. [AMS Approved IP16000142, 10/17/16]

(v) SO2 emissions from the heater shall not exceed 0.53 lbs/MMBtu at any time or 0.33 lbs/MMBtu on a rolling 365-day average. [AMS Approved IP16000142, 10/17/16]

(4) Emissions from the 1332 CRU H-3 Heater (CU-012) shall not exceed as follows [AMS Plan Approval No. 15253, 9/22/16]:

(i) Nitrogen Oxide (NOx) emissions shall not exceed 17.67 tons per rolling 12-month period upon completion of the Tier 3 project.

(ii) VOC emissions shall not exceed 0.97 tons per rolling 12-month period upon completion of the Tier 3 project.

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(5) Emission from the 1332 H-401 and H-400 Heaters (CU-010 and CU-011) shall not exceed as follows:

(i) The combined Nitrogen Oxide (NOx) emissions from the heaters shall not exceed 62.7 tons per year on a rolling 12-month basis [AMS Plan Approval 09040, dated 2/1/10]

(ii) Nitrogen Oxides (NOx) emissions into the atmosphere from the shared exit stack of the process heaters after the SCR system shall not exceed 0.06 lb/MMBTU on a 365 rolling operating day basis, calculated daily [AMS Plan Approval 09040, dated 2/1/10]

(A) During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU, as defined in the RACT Plan Approval (8/1/2000). All emissions during the natural draft duration shall be counted toward the annual limitation in Section D.3(a)(5)(ii).

(B) The daily average NOx emissions from CU-010 and CU-011 shall not exceed 0.15 lbs NOx/MMBtu for either heater. On a rolling 30 operating day average, NOx emissions from these heaters shall not exceed 0.25 lbs/MMBtu. [AMS Ract Plan Approval dated 2/9/16, AMS IP16-000264 dated 12/30/16]

(iii) Ammonia (NH3) emission from the shared exit stack S-117 of process heaters after the SCR system shall not exceed 1.16 lbs/hr. [25 Pa Code 127.1, AMS Plan Approval 09040, dated 2/1/10]

(iv) Particulate matter emissions from the Heater 1332 H-401 (CU-010) shall not exceed 0.17 lb/MMBTU and 1332 H-400 (CU-011) shall not exceed 0.19 lb/MMBTU [25 PA Code 123.11(a)(2) and AMS Reg. II, Sec. V, AMS Plan Approval 09040, dated 2/1/10]

(6) Emission from the 210 13H-1 Heater (CU-103) shall not exceed as follows:

(i) Sulfur dioxide (SO2) emissions shall not exceed 11.01 tons in any rolling 12-month period. [AMS Plan Approval 02184 dated 8/12/04]

(7) Emission from the 870 H1 and H2 Heaters (CU-137 and CU-138) shall not exceed as follows: [AMS Plan Approval No. 15271, 4/25/17]

(i) Nitrogen Oxide (NOx) emissions from the heaters shall not exceed 0.035 lb/MMBTU. [AMS Plan Approval 02184, dated 8/12/04]

(ii) NOx emissions

(A) 870 H1 shall not exceed 3.40 lbs/hr and 12.32 tpy on a 12 month rolling average upon completion of the Tier 3 project for the annual limit. [AMS Plan Approval No. 15253, 09/22/16 & AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 1.86 lbs/hr and 6.50 tpy on a rolling 12 month average upon completion of the Tier 3 project for the annual limit. [AMS Plan Approval No. 15253, 09/22/16 & AMS Plan Approval No. 15271, 4/25/17]

(iii) CO emissions

(A) 870 H1 shall not exceed 14.04 lbs/hr and 61.50 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

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NOx emissions shall not exceed 31.8 ton per year on a rolling 365-day basis [AMS Plan Approval 10180, dated 2/3/11]¶
NOx emissions shall not exceed 0.030 lbs/MMBTU on a rolling 365-day basis [AMS Plan Approval 10180, dated 2/3/11]¶
Particulate matter emissions shall not exceed 0.10 lbs/MMBTU gross heat input. [AMR II. Section V.2, AMS Plan Approval 10180, dated 2/3/11]¶
Sulfur dioxide emissions shall not exceed 500 ppmvd [Plan Approval 10180 dated 2/3/11, Plan Approval 00186 dated 3/22/03, 25 PA Code 123.21(b)]¶

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(B) 870 H2 shall not exceed 4.37 lbs/hr and 19.13 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(iv) VOC emissions

(A) 870 H1 shall not exceed 0.52 lbs/hr and 0.17 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 0.29 lbs/hr and 0.21 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(v) SO_2 emissions

(A) 870 H1 shall not exceed 3.88 lbs/hr and 16.99 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 2.12 lbs/hr and 9.29 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(vi) PM/PM10 emissions

(A) 870 H1 shall not exceed 0.18 lbs/hr and 0.79 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 0.1 lbs/hr and 0.43 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(vii) Carbon monoxide emissions from the heaters shall not exceed 400 ppmdv at 3% oxygen [25PA Code 127.1 (BAT), AMS Plan Approval 02184, dated 8/12/04]

(8) Emission from the Unit 433 Isostripper H-1 Heater (CU-017) shall not exceed as follows: [AMS Plan Approval 06050, dated 12/4/06, PM, CO, and SO2 limits assure compliance with 25 PA Code 123.11 & 123.22, AMR II Sec VII, AMR VIII Sec II]

(i) NOx emissions shall not exceed 39.9 ton per year on a rolling 365-day basis and 0.25 lbs/MMBtu on a rolling 30 operating day average [AMS IP16-000264, 12/30/16]

(ii) NOx emissions shall not exceed 0.035 lbs/MMBTU on an hourly basis using CEMs

(A) During periods of start-up and shutdown, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. Start up shall be defined as that period of time from initiation of the heater operation until the unit reaches steady state. Shutdown shall be defined as the cessation of the heater operation. Each period shall not exceed 8 hours. Shutdown and startup periods are limited to 40 hours per 12 month rolling period combined. [AMS Plan Approval No. 06050A, 3/20/15]

(B) During periods of chemical washing of the 433 Unit, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. The total chemical washing and dryout periods shall not exceed 144 hours per rolling 24 month period. The air dry out period time is defined as the time required to operate the Heater at very low firing rates when compressed air or nitrogen is injected into the unit and the temperature increased to evaporate free water in the system. Free water must be removed prior to

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re-introducing acid into the unit, and is evidenced by no longer finding any water at low point bleeders.

(iii) Particulate matter (total PM/PM10) emissions shall not exceed 8.5 ton per year on a rolling 365-day basis.

(iv) Particulate matter (total PM/PM10) emissions shall not exceed 0.00745 lbs/MMBTU gross heat input.

(v) Carbon monoxide emissions shall not exceed 112.2 ton per year on a rolling 365-day basis.

(vi) Carbon monoxide emissions shall not exceed 0.0985 lbs/MMBTU gross heat input.

(vii) Sulfur dioxide emissions shall not exceed 37.6 ton per year on a rolling 365-day basis.

(viii) Sulfur dioxide emissions shall not exceed 0.033 lbs/MMBTU gross heat input.

(ix) VOC emissions shall not exceed 7.4 tons per year on a rolling 365-day basis. [AMS Plan Approval 06050A, dated 3/20/2015]

(x) VOC emissions shall not exceed 0.0065 lbs/MMBtu gross heat input. [AMS Plan Approval 06050A, dated 3/20/2015]

(9) Emission from the Unit 859 1H-1 Heater (CU-139) shall not exceed as follows: [AMS Plan Approval 06144, dated 1/29/08, PM, CO, and SO2 limits assure compliance with 25 PA Code 123.11 & 123.22, AMR II Sec VII, AMR VIII Sec II, and 40 CFR Subpart DDDDD Table 1]]

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(i) NOx emissions shall not exceed 8.6 ton per year on a rolling 365-day basis

(ii) NOx emissions shall not exceed 0.02 lbs/MMBTU on an hourly based on 3-one-hour stack test

(iii) Particulate matter (total PM/PM10) emissions shall not exceed 3.2 ton per year on a rolling 365-day basis.

(iv) Particulate matter (total PM/PM10) emissions shall not exceed 0.00745 lbs/MMBTU gross heat input.

(v) Carbon monoxide emissions shall not exceed 35.4 ton per year on a rolling 365-day basis.

(vi) Carbon monoxide emissions shall not exceed 0.0825 lbs/MMBTU gross heat input.

(vii) Sulfur dioxide emissions shall not exceed 5.2 ton per year on a rolling 365-day basis.

(viii) Sulfur dioxide emissions shall not exceed 0.033 lbs/MMBTU gross heat input.

(10) The Unit 868 8H-101 Heater (CU-129) is limited as follows: [25 PA Code 127.1, AMS Plan Approval 12195, 2/19/14]

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(i) Carbon Monoxide emissions shall not exceed 400 ppmdv at 3% oxygen.

(ii) Nitrogen Oxides (NOx) emissions shall not exceed 0.113 lbs/MMBtu on a 30-day rolling average and 27.1 tons per rolling 12-month period.

(iii) Carbon Monoxide (CO) emissions shall not exceed 4.9 lbs/hour and 18.9 tons per rolling 12-month period.

(iv) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.6 tons per rolling 12-month period.

(v) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 1.7 tons per rolling 12-month period.

(vi) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vii) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 27,054 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(viii) Heat input shall not exceed 480,000 MMBTU on a rolling 365-day basis.

(11) The Unit 231 B-101 Heater (CU-016) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.03 lbs/MMBtu on a 30-day rolling average and 12.8 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 8.6 lbs/hour and 34.4 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.8 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.20 lbs/MMBtu and 3.1 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 49,243 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 856,000 MMBTU on a rolling 365-day basis.

(12) The Unit 210 H-101 Heater (CU-101) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.089 lbs/MMBtu on a 30-day rolling average and 73.1 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 15.7 lbs/hour and 66.9 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 2.7 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.19 lbs/MMBtu and 6.1 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 95,847 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 1,643,000 MMBTU on a rolling 365-day basis.

(13) The Unit 210 H-201 Heater (CU-102) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

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(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.030 lbs/MMBtu on a 30-day rolling average, 0.25 lbs/MMBtu on a 30 operating day average, and 32.6 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 20.8 lbs/hour and 88.5 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 3.2 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 8.0 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 126,707 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 2,172,000 MMBTU on a rolling 365-day basis.

(14) The Unit 864 PH-1 Heater (CU-118) is limited as follows: [AMS Plan Approval 15253, 9/22/16]

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(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 18.40 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 25.04 tons per rolling 12 month period upon completion of the Tier 3 project.
(iv) Firing duty shall not exceed 80.0 MMBtu/hr on a daily average basis.
(v) Firing duty shall not exceed 613,200 MMBtu per rolling 365-day period.

(15) The Unit 864 PH-7 Heater (CU-123) is limited as follows: [AMS Plan Approval 15253, 9/22/16]
(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.
(ii) NOx emissions shall not exceed 9.99 tons per rolling 12 month period upon completion of the Tier 3 project.
(iii) CO emissions shall not exceed 13.59 tons per rolling 12 month period upon completion of the Tier 3 project.
(iv) Firing duty shall not exceed 45.5 MMBtu/hr on a daily average basis.
(v) Firing duty shall not exceed 332,880 MMBtu per rolling 365-day period.

(16) The Unit 864 PH-11 Heater (CU-124) is limited as follows: [AMS Plan Approval 15253, 9/22/16]
(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.
(ii) NOx emissions shall not exceed 15.24 tons per rolling 12 month period upon completion of the Tier 3 project.
(iii) CO emissions shall not exceed 20.75 tons per rolling 12 month period upon completion of the Tier 3 project.
(iv) Firing duty shall not exceed 74.0 MMBtu/hr on a daily average basis.
(v) Firing duty shall not exceed 508,080 MMBtu per rolling 365-day period.

(17) The Unit 864 PH-12 Heater (CU-125) is limited as follows: [AMS Plan Approval 15253, 9/22/16]
(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.
(ii) NOx emissions shall not exceed 16.56 tons per rolling 12 month period upon completion of the Tier 3 project.
(iii) CO emissions shall not exceed 22.54 tons per rolling 12 month period upon completion of the Tier 3 project.
(iv) Firing duty shall not exceed 85.1 MMBtu/hr on a daily average basis.
(v) Firing duty shall not exceed 551,880 MMBtu per rolling 365-day period.

(18) The Unit 865 11H-1 Heater (CU-126) is limited as follows: [AMS Plan Approval 12195, 2/19/14]
(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.030 lbs/MMBtu on a 30-day rolling average and 10.5 tons per rolling 12-month period.
(ii) Carbon Monoxide (CO) emissions shall not exceed 7.2 lbs/hour and 28.5 tons per rolling 12-month period.
(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.7 tons per rolling 12-month period.

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(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 2.6 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 40,777 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

Heat input shall not exceed 699,000 MMBTU on a rolling 365-day basis.

(19) The Unit 865 11H-2 Heater (CU-127) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

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(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.113 lbs/MMBtu on a 30-day rolling average and 28.3 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 5.3 lbs/hour and 20.4 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.5 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 1.8 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 29,168 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 500,000 MMBTU on a rolling 365-day basis.

(20) The Unit 866 12H-1 Heater (CU-128) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

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(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.113 lbs/MMBtu on a 30-day rolling average and 25.8 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 5.0 lbs/hour and 18.6 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.5 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 1.7 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 26,601 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 456,000 MMBTU on a rolling 365-day basis.

(21) The Unit 870 H3 Heater (CU-140) is limited as follows: [AMS Plan Approval 15253 9/22/16]

(i) NOx emissions shall not exceed 0.03 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 11.96 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 11.96 tons per rolling 12 month period upon completion of the Tier 3 project.

(iv) Firing duty shall not exceed 91.0 MMBtu/hr on a daily average basis.

(v) Firing duty shall not exceed 797,160 MMBtu per rolling 365-day period.

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(22) The Permittee shall ensure that the heaters listed below do not exceed the following particulate, NOx emission, and SO2 limitations: [Case-by-case RACT, 25 Pa Code §§129.91-95, SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 05124 dated Oct. 4, 2005]

Table D.3.a.1

Source ID	Particulate Limitation (lbs PM/MMBTU)	NOx Limitation (lbs NO_x/ MMBTU/)[a]	SO_2 Limitation[b] (lbs SO_2/MMBTU)	Rolling 365 Day Average Emission Rate[b] (lbs SO_2/MMBTU)
CU-004 GP	0.2[d]	0.177[a]	0.53	0.33
CU-005 GP	0.2[d]	---	0.53	0.33
CU-006 GP	0.2[d]	---	0.53	0.33
CU-007 GP	0.2[d]	---	0.53	0.33
CU-008 GP	0.2[d]	---	0.53	0.33
CU-009 GP	0.10[h]	0.04[h]	0.53	0.33
CU-012 GP	0.2[d]	---	0.53	0.33
CU-014 GP	0.2[d]	0.257[a,n,p]	0.53	0.33
CU-015 GP	0.1[d]	0.060[i]	0.53	0.53
CU-016 GP	0.2[d,j]	0.03[a,j]	0.53[j]	0.33[j]
CU-017 GP	0.00745[m]	0.035[m]	0.033[m]	0.33
CU-101 PB	0.19[c]	0.089[a]	0.53	0.33
CU-103 PB	0.1[d]	0.104[a]	0.53	0.33
CU-109 PB	0.2[d]	0.250[a,p]	0.53	0.33
CU-110 PB	0.2	0.163[a]	0.53	0.33
CU-111 PB	0.2[d]	0.250[a,p]	0.53	0.33
CU-112 PB	0.2[d]	0.163[a]	0.53	0.33
CU-113 PB	0.2[d]	---	0.53	0.33
CU-114 PB	0.2[d]	0.157[a]	0.53	0.33
CU-115 PB	0.2[d]	---	0.53	0.33
CU-118 PB	0.1[d]	0.06[a,q]	0.53	0.33
CU-123 PB	0.1[d]	0.06[q]	0.53	0.33
CU-124 PB	0.1[d]	0.06[a,q]	0.53	0.33
CU-125 PB	0.1[d]	0.06[a,q]	0.53	0.33
CU-126 PB	0.1[d]	0.03[a,j]	0.53	0.33
CU-127 PB	0.1[d]	---	0.53	0.33

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Source ID	Particulate Limitation (lbs PM/MMBTU)	NOx Limitation (lbs NO_x/ MMBTU/)[a]	SO_2 Limitation[b] (lbs SO_2/MMBTU)	Rolling 365 Day Average Emission Rate[b] (lbs SO_2/MMBTU)
CU-128 PB	0.1[d]	---	0.53	0.33
CU-129 PB	0.1[d]	---	---	0.33
Quarterly NOx compliance not required for the following sources[n]				
CU-010 GP	0.17 [g]	0.06 [a,g]	0.53	0.33
CU-011 GP	0.19 [g]	0.06 [a,g]	0.53	0.33
CU-013 GP	0.12[c]	0.230[a]	0.53	0.33
CU-102 PB	0.10[d,k]	0.030 [k]	0.53	0.33
CU-137 PB	0.1[d]	0.035 [f]		
CU-138 PB	0.1[d]	0.035 [f]	---	---
CU-139 PB (859 1H-1)	0.00745[l]	0.02[l]	0.033[l]	
CU-140 PB (870 H-3)	---	0.03[q]	---	---

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95.

[b] - SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA code 123.22.

[c] - Complies with 25 PA Code 123.11. This streamlined permit condition assures compliance with AMS Regulation II, Section V.

[d] - Complies with AMS Regulation II, Section V. This streamlined permit condition assures compliance with 25 PA Code 123.11.

[e] - Complies with Best Available Technology, 25 PA Code 127.1

[f] - AMS Plan Approval 02184 dated May 12, 2004

[g] - AMS Plan Approval 09040 dated February 1, 2010, the NOx emission are 365 rolling operating day basis, calculated daily. During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU RACT Plan Approval (8/1/2000).

[h] - AMS Plan Approval 05124 dated October 4, 2005, Complies with AMS Regulation II, Section V. This streamlined permit condition assures compliance with 25 PA Code 123.11.

[i] - AMS Plan Approval 07163 dated February 5, 2008

[j] - AMS Plan Approval 12195 dated February 19, 2014

[k] - AMS Plan Approval 10180 dated February 3, 2011

[l] - AMS Plan Approval 06050 dated December 4, 2006. This streamlined permit condition assures compliance with AMS Regulation II, Section V and 25 PA Code 123.11

[m] - AMS Plan Approval 06144 dated January 29, 2008. This streamlined permit condition assures compliance with AMS Regulation II, Section V and 25 PA Code 123.11

[n] - NOx emission are based on the 30-day rolling average.

[o] - AMS RACT Plan Approval dated February 9, 2016

[p] - AMS IP16-000264, dated December 30, 2016. Sets 30 operating day average emission limit to 0.25 lb NOx/MMBtu

[q] - AMS Plan Approval 15253 dated September 22, 2016

GP - Girard Point

PB - Point Breeze

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(b) Work Practice Standards

(1) The Permittee shall perform an annual adjustment or tune-up for the specified sources listed in the Table D.3.b.1 below. This adjustment shall include, at a minimum, the following: [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2E; 25 PA Code §129.93(b)(2) and (5)]

(i) Sources shall complete annual combustion tuning by December 31st of each year not to exceed 12 months between tunings and shall at a minimum meet the requirements set forth in 25 Pa. 129.93 (b)(2) through (5). [AMS RACT Plan Approval, 2/9/16]

(ii) Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.

(iii) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx, and to the extent practicable minimize emissions of CO.

(iv) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

(v) For oil and gas and combination oil/gas fired units requiring an annual adjustment or tune-up on the combustion process, the Permittee shall make the annual adjustment in accordance with the EPA document "Combustion Efficiency Optimization Manual for Operators of Oil and Gas-fired Boilers," September 1983 (EPA-340/1-83-023) or equivalent procedures approved in writing by the AMS.

(2) The Permittee shall ensure that the specified fuel burning sources listed in Table D.3.b.1 shall be operated within the specifications in the table.

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Table D.3.b.1

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Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-004	70 [a]	Annual Tuneup or Adjustment [a]	Ultra Low NOx Burner
CU-005	45	Annual Tuneup or Adjustment [a]	
CU-006	49	Annual Tune-up or Adjustment [a]	
CU-007	48	Annual Tune-up or Adjustment [a]	
CU-009	60 [b]	Annual Tune-up or Adjustment [a]	Ultra Low Nox Burners[b] Fuel flow monitor[b]
CU-010	233 [a]	Annual Tune-up or Adjustment [a]	
CU-011	186 [a]	Annual Tuneup or Adjustment [a]	

Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-013	415 [a]	Annual Tune-up or Adjustment [a]	
CU-014	155 [a]	Annual Tune-up or Adjustment [a]	
CU-015	60	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner Fuel Flow Monitor
CU-016	91 [a]	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[l]
CU-017	260 k	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[m]
CU-101	183	Annual Tune-up or Adjustment [a]	
CU-102	242 [a]	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[n]
CU-103	235.4	Annual Tune-up or Adjustment [a]	
CU-109	69.78	Annual Tune-up or Adjustment [a]	
CU-110	174.67	Annual Tune-up or Adjustment [a]	
CU-111	99.44	Annual Tune-up or Adjustment [a]	
CU-112	155	Annual Tune-up or Adjustment [a]	
CU-114	59	Annual Tune-up or Adjustment [a]	
CU-115	49.6	Annual Tune-up or Adjustment [a]	
CU-118	80	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-123	45.5	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-124	74	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-125	85.1	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-126	87.3[g]	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[l]
CU-127	64.2 [l]	Annual Tune-up or Adjustment [a]	
CU-128	61.2 [l]	Annual Tune-up or Adjustment [a]	

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Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-129	60.0 [l]	Annual Tune-up or Adjustment [a]	Low NOx Burner [d]
CU-137	97 [e,d]	Annual Tune-up or Adjustment [a, o]	Ultra Low NOx Burners with flue gas Recirculation [d,e]
CU-138	53 [e,d]	Annual Tune-up or Adjustment [a, o]	Ultra Low NOx Burners with flue gas Recirculation [d,e]
CU-139	98		Ultra Low NOx Burners
CU-140	110 [o]		Ultra Low NOx Burners [o]

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95. Dated December 6, 2002
[b] - AMS Plan approval 05124 dated October 4, 2005
[c] - AMS Installation Permit 03054 dated July 29, 2003
[d] - 25 Pa Code §§127.1, 25 Pa Code §§127.12(a)(5) complies with Best Available Technology.
[e] - AMS Plan Approval 02184 dated May 12, 2004
[f] - AMS Plan Approval 09040 dated February 1, 2010
[g] - Case-by-case RACT, 25 Pa Code §§129.91-95, AMS Plan Approval 04237 dated August 12, 2005
[k] - AMS Plan Approval 06050 dated December 4, 2006
[l] - AMS Plan Approval 12195 dated February 19, 2014
[m] - AMS Plan Approval 06050A dated March 20, 2015
[n] - AMS RACT Plan Approval dated February 9, 2016
[o] - AMS Plan Approval 15253 dated September 22, 2016

(3) The Permittee shall operate the SCR system while operating the 1332 H-400/401 (CU-010 & CU-011) heaters except during times required to replace SCR catalyst or to do maintenance to the SCR/air pre-heater system or to operate the heaters at low firing rate during reformer catalyst regenerations. [AMS Plan Approval 09040, dated 2/1/10]

(i) The Permittee shall take a daily NOx sample during these maintenance periods when it is necessary to by-pass the SCR/air pre-heater system and the NOx CEM, and the heaters are operated in natural draft mode. During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU, as defined in the RACT Plan Approval (8/1/2000).

(ii) All emissions during the natural draft duration shall be counted toward the annual limitation in Section D.3(a)(5).

(4) Each process heater shall only burn refinery fuel gas or natural gas as listed in Table A-1.

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(i) The Permittee shall not burn any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104 (a) (1)]

(5) During 1332 H-400/401 (CU-010 & CU-011) heater start-up the SCR system shall be brought into operation as soon as the flue gas temperature has stabilized in the range of 650 to 780 degrees Fahrenheit (F), the temperature range necessary to satisfy the catalyst system [AMS Plan Approval 09040, dated 2/1/10].

(6) The 868 8H-101 (CU-129) shall only fire refinery fuel gas and shall be equipped with low NOx burners. The firing rate shall not exceed 49.5 MMBTU/hr. [AMS Plan Approval 03054 dated 7/2/03]

(7) The fuel throughput of the 859 ULSD Hydrotreater shall be limited to 60,000 barrels per day calculated on a rolling 365 day average [AMS Plan Approval 06144, dated 1/29/08]

(8) The CU-010, CU-011, CU-013, CU-014, CU-017, CU-102 heaters shall be equipped with continuous monitors and recorders for NOx and O_2. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139. [Consent Decree Order 05-CV-2866]

(9) Beginning January 31, 2016, the Permittee shall conduct tune-up for each process heater to demonstrate compliance with 40 CFR 63 Subpart DDDDD

(i) Annual tune-up shall be conducted on each process heater that do not have continuous oxygen trim system [40 CFR 63.7540(a)(10)]

(ii) Tune-ups shall be conduction every 5 years on process heaters with continuous oxygen trim system. [40 CFR 63.7540(a)(12)]

(iii) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(A) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(B) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(C) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(D) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(E) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments

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are made). Measurements may be taken using a portable CO analyzer;

(vi) The Permittee may delay the burner inspection for process heaters with continuous oxygen trim system specified in Section D.3(b)(9)(iii)(A) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(vii) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

(10) The 870 H-1 (CU-137) heater shall be limited to a firing duty of 97.0 MMBtu/hr on a daily average basis and 849,720 MMBtu per rolling 365-day period. [AMS Plan Approval 15271, 4/25/2017]

(11) The 870 H-2 (CU-138) heater shall be limited to a firing duty of 53.0 MMBtu/hr on a daily average basis and 464,280 MMBtu per rolling 365-day period. [AMS Plan Approval 15271, 4/25/2017]

(12) The 870 H-3 (CU-140) heater shall be limited to a firing duty of 91.0 MMBtu/hr on a daily average basis and 797,160 MMBtu per rolling 365-day period. [AMS Plan Approval No. 15253, 9/22/16]

(13) The 1332 H-2 (CU-009) heater shall be limited to a firing duty of 60.0 MMBtu/hr on a daily average basis and 525,600 MMBtu per rolling 365-day period. [AMS Plan Approval No. 15253, 9/22/16]

(14) The 1332 H-3 (CU-012) heater shall be limited to a firing duty of 43.0 MMBtu/hr on a daily average basis and 376,680 MMBtu per rolling 365-day period. [AMS Plan Approval No. 15253, 9/22/16]

(15) Heaters CU-016, CU-101, CU-102, CU-126, CU-127, CU-128, and CU-129 shall monitor and record the MMBTU heat input hourly on a rolling 365-day basis, calculated daily. Fuel gas BTU content shall be continuously monitored at the 862 Unit or tested and recorded daily. The 862 Unit continuous heat input monitor shall meet the requirements of 25 Pa. Code Chapter 139 [AMS Plan Approval 12195, 2/19/14]

(c) Testing Requirements

[25 PA Code §139]

(1) Compliance with the emission limits for the combustion sources listed in Section D.3(a)(22) -Table D.3.a.1shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year of sampling, the Permittee may petition AMS for semiannual monitoring. AMS may, at any time, require three one-hour stack tests per fuel type for each unit where fuels can be fired separately. AMS may, at any time, require three one-hour stack tests for dual-fuel type combustion sources where both fuels must be fired at the same time and compliance with emission limits shall be through the use of one set of three one-hour stack tests. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 4C]

(2) The Permittee shall conduct performance test at the exhaust stack to establish emission factors and demonstrate compliance with NH3 emissions of the 1332 H400/401 (CU-010 & CU-011) heaters. NH3 emissions shall be determined

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(i) Option 1: On and after January 30, 2019, vent emissions to a flare that meets the requirements of § 63.670. Prior to January 30, 2019, vent emissions to a flare that meets the requirements for control devices in § 63.11(b) and visible emissions from a flare must not exceed a total of 5 minutes during any 2-hour operating period, or vent emissions to a flare that meets the requirements of § 63.670¶
(ii) Option 2: Reduce uncontrolled emissions of total organic compounds (TOC) or nonmethane TOC from your process vent by 98 percent by weight using a control device or to a concentration of 20 ppmv (dry basis as hexane), corrected to 3 percent oxygen, whichever is less stringent. If you vent emissions to a boiler or process heater to comply with the percent reduction or concentration emission limitation, the vent stream must be introduced into the flame zone, or any other location that will achieve the percent reduction or concentration standard.¶

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using the average of 3 one-hour tests per the EPA Reference Method CTM 027. [AMS Plan Approval 09040, dated 2/1/10].

(i) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, the Permittee must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher rate.

(ii) The NH3 performance test shall be conducted within 5 years of the last performance test.

(3) The Permittee shall conduct a CO performance test on the 1332 CRU H-2 (CU-009) heater on an annual basis in accordance with 40 CFR 63.7515.

(4) The Permittee shall submit a stack test protocol to Air Management Services (AMS) at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing. If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, the Permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates.

(5) Within 60 days of achieving max production rate, but no later than 180 days after re-starting the 1332 CRU H-2 (CU-009) heater, PES shall conduct performance tests to demonstrate compliance with the NOx emission limit specified in Condition D.3.(a)(4). The NOx and CO stack tests must be conducted simultaneously. The stack test protocol shall be submitted to AMS for approval at least 30 days before the test date and the test results shall be submitted within 60 days after the test. [AMS IP16000142, 10/17/16]

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(6) For 870 Heaters 1 and 2 (CU-137 an CU-138), the Permittee shall conduct a stack test for CO every five (5) years or upon request from AMS. [AMS Plan Approval 15271, 4/25/2017]

(7) For all heaters, (except for CU-005, CU-006, CU-007, CU-012, CU-115, and CU-123) PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations. [25 Pa. 129.100(a)(4)]

(8) For Unit 870 H-3 Heater (CU-140), within 60 days of achieving maximum capacity, but no longer than 180 days after start-up, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emission limits from Condition D.3.(a)(21). The NOx and CO tests must be conducted simultaneously [AMS Plan Approval 15271, 4/25/2017].

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(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall utilize an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device. [40 CFR 60.105(a)(4)]

(i) The span value for this instrument is 425 mg/dscm H_2S. 40 CFR

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.

(iii) The performance evaluations for the H_2S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations.

(iv) H2S shall be monitored at following locations:

H2S CEMs location	SourceID	Source Name
GP Fuel Gas Mix Drum (V-10001)	CU-004	1232-B104
	CU-005	1332-H1
	CU-006	1332-H602
	CU-007	1332-H601
	CU-009	1332-H2[a]
	CU-010	1332-H401
	CU-011	1332-H400
	CU-012	1332-H3
	CU-013	137-F1
	CU-014	137-F2
	CU-015	137-F3
	CU-016	231 B-101
	CU-017	433 H-1
	CU-018	3BH-37
	CU-020	3BH-39
	CU-021	3BH-40
PB Fuel gas Mix Drum (1V148)	CU-101	210 H-101
	CU102	210-H-201
	CU-103	210-13H1
	CU-109	860-2H2
	CU-110	860-2H3
	CU-111	860-2H4
	CU-112	860-2H5
	CU-114	860 2H-7
	CU-115	860 2H-8
	CU-118	864 PH-1
	CU-123	864-PH7
	CU-124	864-PH11
	CU-125	864-PH12
	CU-126	865-11H1
	CU-127	865-11H2
	CU-128	866-12H1
	CU-137	870 H-1
	CU-138	870 H-2

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H2S CEMs location	SourceID	Source Name
	CU-139	859 1H-1
H2S CEM at 868 H-101 Heater	CU-129	868 8H-101
H2S CEM at Unit 870 Heaters	CU-137	870 H-1
	CU-138	870 H-2
	CU-140	870 H-3

a – Allow H2S monitoring of the fuel gas supplied to the 1332 H2 Heater at the Girard Point Mix Drum (V-10001) in lieu of the original H2S CEM installed at the 1332 H-2 Heater under Plan Approval No. 05214. [AMS Plan Approval No. 16013 Condition 11, 7/11/17]

b – [AMS Plan Approval No. 15253, 9/22/16

(2) The Permittee shall monitor the refinery fuel gas heating value and consumption daily, when the heater is in operation

(3) The Permittee shall install a parametric emissions monitoring system (PEMS) on the 868 8H 101 heater (CU-129) for Carbon Monoxide. The chosen parameters and software CEM shall accurately predict the emissions. Accuracy of the system shall be demonstrated during a stack test. PES and AMS have agreed to a system by which oxygen is monitored and maintained at 0.5% or greater to achieve the following Carbon Monoxide emission restriction. The parameters and predicted emissions shall be monitored and recorded continuously to ensure compliance with the Carbon Monoxide emission limitation of 400ppmdv at 3% oxygen. [AMS Installation Permit. 03054 dated July 29, 2003]

(4) The Permittee shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis, 0 percent excess air) of NO_X emissions into the atmosphere, on the exit stack after the 1332 H-400/401 heaters (CU-010 & 011) SCR system. The monitor must include an O_2 monitor for correcting the data for excess air. The NOx and O2 CEMS must comply with PA CSMM Revision 7 and 25 PA Code Chapter 139. [AMS Plan Approval 09040, dated 2/1/10].

(5) For 1332 H-400/401 heaters (CU-010 & 011)

(i) The Permittee shall monitor for NOx, PM, NH3 emissions from the heaters. [AMS Plan Approval 09040, dated 2/1/10].

(ii) The Permittee shall daily monitor the fuel type and fuel usage of the heaters to ensure the capacity limits are not exceeded. [AMS Plan Approval 09040, dated 2/1/10].

(iii) The Permittee shall monitor and record ammonia injection of the heaters SCR system on an hourly basis to ensure compliance. [AMS Plan Approval 09040, dated 2/1/10].

(iv) The Permittee shall continuously monitor flue gas temperature at the inlet of the SCR to ensure good operating practice. [AMS Plan Approval 09040, dated 2/1/10].

(6) The Permittee shall monitor NOx concentration of Unit 231 B 101 (CU-016) process heater using a portable NOx analyzer semi-annually [AMS Plan Approval 04140 dated 9/14/04, AMS Plan Approval 06069 dated 6/13/06]

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(7) The Permittee shall monitor all fuel input and heating values to heaters to assure compliance with Section D.3(b)(2) on a daily basis to ensure capacity limits are not exceeded or install fuel limiting devices on the heaters to keep capacities below the allowable limits. [Case-by-case RACT, 25 Pa Code §§129.91-95]

(8) The fuel type and fuel usage for each process heater. [SO2 Operating Permit No. SO2-95-039]

(9) For heaters CU-009, CU-012, CU-118, CU-123, CU-124, CU-125, and CU-140, the permittee shall monitor and record NOx and CO emissions calculated monthly to demonstrate compliance with the 12 month rolling period emission limits for NOx and CO. Compliance determination shall be based on AMS-approved stack tests. [AMS Plan Approval 15253, 9/22/16]

(10) Heaters CU-010, CU-011, CU-013, CU-014, CU-017, and CU-102 CEMS shall use an AMS-approved Continuous Emissions Monitoring System (CEMS) to comply with NOx emissions limits and must meet the requirements of 25 Pa Code Chapter 139, the Pennsylvania Continuous Source Monitoring Manual (Revision 7), and 25 Pa Code §129.100(a)(1) [AMS Permit 12195, 2/19/14, AMS RACT Plan Approval, 2/9/16, and AMS Permit 16000264, 12/30/16]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 129.91 – 129.94, 129.100(d), 135.21, 135.5 & 139, AMS RACT Plan Approval, dated 2/9/2016, AMS RACT II Plan Approval No. 16000264, dated 12/30/2016]

The Permittee shall keep the following records:

(1) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5C]

(2) For combustion units required to perform an annual adjustment or tune-up, the Permittee of the adjusted equipment shall record each adjustment procedure in a permanently bound log book or other method approved by the AMS. This log shall contain, at a minimum, the following information: [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5; 25 PA Code §129.93(b)(3)(I)-(v)]

(i) The date of the tuning procedure.

(ii) The name of the service company and technicians.

(iii) The final operating rate or load.

(iv) The final CO and NOx emission rates.

(v) The final excess oxygen rate.

(3) Records of periods of excess emissions shall be determined semiannually for all rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system exceeds 230 mg/dscm (0.10 gr/dscf). [40 CFR 60.105(e)(3)(ii)]

(4) The Permitee shall keep records of the following for each heater:

(i) Continuous Hydrogen Sulfide monitoring system records

(ii) Daily refinery gas consumptions, heating value, and sulfur content

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(A) Heating value in MMBTU/hr shall be recorded hourly, calulated on a 24-hour (calendar day) average.

(iii) Stack test results

(iv) Continuous PEMS records for Carbon Monoxide for the 868 8H101 (CU1-129) heater.

(v) Maintenance records

(5) For 1332 H-400/401 heaters (CU-010 & 011)

(i) The Permittee shall keep records for NOx, PM, NH3 emissions from the heaters. [AMS Plan Approval 09040, dated 2/1/10].

(A) NOx emissions shall be determined daily based on CEM data. The NOx emission shall be converted to lbs/MMBTU at 0% O_2 using the equation below to ensure compliance.

Lb/MMBTU = (ppmdv)*(1.194x10^{-7})*(F-factor)*(20.9 / (20.9 - % O_2)) where the F factor = scf flue gas per MMBTU calculated daily from daily fuel gas samples.

(B) NH3 emissions shall be determined based on AMS approved stack data and the PM emissions shall be determined based on AP-42 emission factor or other AMS-approved emission factor.

(ii) The Permittee shall daily record the fuel type and fuel usage of the heater to ensure the capacity limits are not exceeded. [AMS Plan Approval 09040, dated 2/1/10].

(iii) The Permittee shall record ammonia injection of heater SCR system on an hourly basis to ensure compliance. [AMS Plan Approval 09040, dated 2/1/10].

(iv) The Permittee shall continuously record flue gas temperature at the inlet of the SCR to ensure good operating practice.. [AMS Plan Approval 09040, dated 2/1/10].

(6) The Permittee shall record the following for Unit 231 B 101 (CU-016): [AMS Plan Approval 04140 dated 9/13/04, AMS Plan Approval 06069 dated 6/13/08]

(i) SO2 emission shall be calculated using fuel sulfur content

(ii) PM, NOx, and CO shall be calculated using AP-42 emission factors or other AMS approved emission factors

(A) If at any time AMS has cause to believe that air containment emission is in excess of the limits specified, the Permittee shall be required to conduct whatever tests deemed necessary by AMS to determine the actual emission rate.

(7) Maintain on-site and submit, if requested by the Administrator, an annual report containing the following information to demonstrate compliance with 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)(10)(vi)]

(iv) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the process heater;

(v) A description of any corrective actions taken as a part of the tune-up; and

(vi) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(8) PES shall maintain a filecontaining all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements of 25 PA Code §129.91 – §129.94 [AMS RACT Plan Approval, dated 2/9/2016]

(i) The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 - §129.94 are met.

(ii) Records shall be retained for at least two years and shall be made available to the Department on request.

(9) PES shall keep records demonstrating compliance with the requirements of AMS Permit IP16-000264 as per 25 Pa Code §129.100(d).

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(f) Reporting Requirements

(1) The Permittee shall submit CEM and production reports to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

(2) For 868 8H-101 (CU-129), written quarterly reports of excess emissions shall include the following information:

(i) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period. [40 CFR 60.7(c)(1)]

(ii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted. [40 CFR 60.7(c)(2)]

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. [40 CFR 60.7(c)(3)]

(iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report. [40 CFR 60.7(c)(4)]

(v) The summary report form shall contain the information and be in the format shown in Figure 1 below unless otherwise specified by the AMS. One summary report form shall be submitted for each pollutant monitored at each affected facility. [40 CFR 60.7(d)]

(A) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form

shall be submitted and the excess emission report need not be submitted unless requested by the AMS. [40 CFR 60.7(d)(1)]

(B) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report shall both be submitted. [40 CFR 60.7(d)(2)]

FIGURE 1—SUMMARY REPORT— GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

Pollutant (Circle One—SO_2/NOx/ TRS/H_2S/CO/Opacity)
Reporting period dates:
From to:
Company:
Emission Limitation:
Address:
Monitor Manufacturer and Model No.:
Date of Latest CMS Certification or Audit:
Process Unit(s) Description:
Total source operating time in reporting period[1]:

Emission data summary[1]	CMS performance summary[1]
1.Duration of excess emissions in reporting period due to:	1. CMS downtime in reporting period due to:
a. Startup/shutdown	a. Monitor equipment malfunctions
b. Control equipment problems	b. Non-Monitor equipment malfunctions
c. Process problems	c. Quality assurance calibration
d. Other known causes	d. Other known causes
e. Unknown causes	e. Unknown causes
2. Total duration of excess emission	2. Total CMS Downtime
3. Total duration of excess emissions X (100) [Total source operating time] %[2]	3. [Total CMS Downtime] X (100) [Total source operating time] %[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

(C) On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name
Signature
Title
Date

(vi) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the Region III Office, and the AMS [40 CFR 60.4(a)(b)]:

(vii) The Permittee shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 60.107(f)]

(3) The Permittee shall report excess emission from the process heaters defined as follows: [40 CFR 60.105(e), AMS Plan Approval 09040, dated 2/1/10]

(i) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system 230 mg/dscm (0.10 gr/dscf).

(4) For each process heater, the Permittee shall submit the following:

(i) Submit all notifications required by 40 CFR 63.7545;

(ii) Submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD;

(iii) Submit immediate startup, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

(iv) Submit a signed statement in the Notification of Compliance Status report that indicates that the Permittee conducted a tune-up of the unit. [40 CFR 63.7530(d)]

(v) The Notification of Compliance Status shall include a signed certification that the energy assessment was completed according to 40 CFR 63 Subpart DDDDD Table and is an accurate depiction of your facility at the time of the assessment. [40 CFR 63.7530(e)]

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4. Group 03 – Flare

Girard Point equipment numbered P-117, P-118, and P-119. Point Breeze equipment numbered P-642, P-643, and CD-104, P-646 (two (2) Sulfur Plant emergency flares) are to be removed according to IP19-000260 & IP18-000263, but will remain in operation until at least 9/26/2019.

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(a) Emission Limitations

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

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(1) For each flare, emissions of sulfur oxides shall not exceed 0.05 percent by volume. [AMR III, Section II.B]

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(2) Hydrogen Sulfide (H_2S) content of the fuel gas burned in each flare shall not exceed 230 mg/dscm (0.1 grains per dry standard cubic foot). [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1), AMS Plan Approval 15271

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dated 4/25/17, AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The combustion of gases generated by the Startup, Shutdown, or Malfunction of the refinery process unit or releases to flare as a result of relief valve leakage or other emergency malfunction are exempt from the above requirement.

Point Breeze LPG Flare (CD-104)

(3) The volatile organic compound emission from the operation of the LPG shall not exceed 24 tons per 12-month rolling period. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 2). Potential VOC emissions are less than 24 tons per year and are mostly fugitives. Compliance with this requirement is assured by the LDAR program.]

(b) Work Practice Standards

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

(1) The flares shall be designed for and operated with no visible emissions as determined by the methods specified in Section D.4(c)(2)-(5), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]

(2) The flares shall be operated and maintained in conformance with manufacturer's specifications and good engineering and air pollution control practices. [40 CFR 60.18(d), 40 CFR 63.11(b)(1), AMS Plan Approval 15271 dated 4/25/17]

(3) The flares shall be operated at all times when gases may be vented to them. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

(4) The flares shall be operated with a pilot flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]

(5) Flares shall be operated with a pilot flame present at all times, as determined by the methods specified in paragraphs D.4(c)(2)-(5). [40 CFR 60.18(c)(2)]

(6) The Permittee has the choice of adhering to either the heat content specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or adhering to the requirements in 40 CFR 60.18(c)(3)(i). [40 CFR 60.18(c)(3)]

(7) Steam-assisted flares shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]

(8) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided below: [40 CFR 60.18(c)(4)]

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(3) The concentration of SO_2 emissions in the stack gases of the South Yard South Flare shall not exceed 20 ppmv (dry basis, zero percent excess air). [40 CFR 60.104(a)(i), AMS Plan Approval 15271 dated 4/25/17]¶
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(i) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c)(4)(ii)]

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c)(4)(iii)]

(9) The Permittee shall investigate the cause of Hydrocarbon Flaring, Acid Gas Flaring and Tail Gas incidents, take reasonable steps to correct and minimize the conditions that have caused or contributed to Hydorcarbon Flaring, Acid Gas Flaring and Tail Gas incidents [Consent Decree Order 05-CV-2866]

(10) The permittee shall not burn any fuel gas containing H_2S in excess of 162 ppmv in the flare. The H_2S content in the fuel gas shall be determined hourly on a 3-hour rolling average basis. The combustion in the flare of process upset gases or fuel gas that is released to the flare as the result of relief valve leakage or other emergency malfunctions is exempt from the above limit. [40 CFR 60.103a(h) and 40 CFR 60.103a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(11) On or before January 30, 2019, the owner or operator of a flare used as a control device for an emission point subject to §63.670 shall meet the applicable requirements for flares as specified in paragraphs (a) through (g) of 40 CFR §63.670 and the applicable requirements in §63.671. The owner or operator may elect to comply with the requirements of paragraph §63.670(r) in lieu of the requirements in paragraphs (d) through (i), as applicable. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(12) Pilot flame presence: The owner or operator shall operate each flare with a pilot flame present at all times when regulated material is routed to the flare. Each 15-minute block during which there is at least one minute where no pilot flame is present when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The owner or operator shall monitor for the presence of a pilot flame as specified in paragraph (g) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(13) Visible emissions: The owner or operator shall specify the smokeless design capacity of each flare and operate with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare. The owner or operator shall monitor for visible emissions from the flare as specified in paragraph (h) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

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(14) Flare tip velocity: For each flare, the owner or operator shall comply with either paragraph (d)(1) or (2) of §63.670, provided the appropriate monitoring systems are in-place, whenever regulated material is routed to the flare for at least 15-minutes and the flare vent gas flow rate is less than the smokeless design capacity of the flare. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as provided in paragraph (d)(2) of §63.670, the actual flare tip velocity (Vtip) must be less than 60 feet per second. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670.

(ii) Vtip must be less than 400 feet per second and also less than the maximum allowed flare tip velocity (Vmax) as calculated according to the following equation. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670 and monitor gas composition and determine NHVvg using the procedures specified in paragraphs (j) and (l) of §63.670.

$$Log_{10}(V_{max}) = \frac{NHV_{vg} + 1{,}212}{850}$$

Where:

V_{max} =	Maximum allowed flare tip velocity, ft/sec.
NHV_{vg} =	Net heating value of flare vent gas, as determined by paragraph (l)(4) of §63.670 , Btu/scf.
1,212 =	Constant.
850 =	Constant.

(15) Combustion zone operating limits: For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVcz as specified in paragraph (m) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(16) Dilution operating limits for flares with perimeter assist air. For each flare actively receiving perimeter assist air, the owner or operator shall operate the flare to maintain the net heating value dilution parameter (NHVdil) at or above 22 British thermal units per square foot (Btu/ft 2) determined on a 15-minute block period basis when regulated material is being routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVdil as specified in paragraph (n) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(17) Calculation methods for cumulative flow rates and determining compliance with Vtip operating limits. The owner or operator shall determine Vtip on a 15-minute block average basis according to the following requirements. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall use design and engineering principles to determine the unobstructed cross sectional area of the flare tip. The unobstructed cross sectional area of the flare tip is the total tip area that vent gas can pass through. This area does not include any stability tabs, stability rings, and upper steam or air tubes because flare vent gas does not exit through them.

(ii) The owner or operator shall determine the cumulative volumetric flow of flare vent gas for each 15-minute block average period using the data from the continuous flow monitoring system required in paragraph (i) of §63.670 according to the following requirements, as applicable. If desired, the cumulative flow rate for a 15-minute block period only needs to include flow during those periods when regulated material is sent to the flare, but owners or operators may elect to calculate the cumulative flow rates across the entire 15-minute block period for any 15-minute block period where there is regulated material flow to the flare.

(A) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block average flow volumes.

(B) If continuous pressure/temperature monitoring system(s) and engineering calculations are used as allowed under paragraph (i)(4) of §63.670 , the owner or operator shall, at a minimum, determine the 15-minute block average temperature and pressure from the monitoring system and use those values to perform the engineering calculations to determine the cumulative flow over the 15-minute block average period. Alternatively, the owner or operator may divide the 15-minute block average period into equal duration subperiods (e.g., three 5-minute periods) and determine the average temperature and pressure for each subperiod, perform engineering calculations to determine the flow for each subperiod, then add the volumetric flows for the subperiods to determine the cumulative volumetric flow of vent gas for the 15-minute block average period.

(iii) The 15-minute block average Vtip shall be calculated using the following equation.

$$V_{tip} = \frac{Q_{cum}}{Area \times 900}$$

Where:

V_{tip} =	Flare tip velocity, feet per second.
Q_{cum} =	Cumulative volumetric flow over 15-minute block average period, actual cubic feet.
Area =	Unobstructed area of the flare tip, square feet.
900 =	Conversion factor, seconds per 15-minute block average.

(iv) If the owner or operator chooses to comply with paragraph (d)(2) of §63.670 , the owner or operator shall also determine the net heating value of the flare vent gas following the requirements in paragraphs (j) and (l) of §63.670 and calculate Vmax using the equation in paragraph (d)(2) of §63.670 in order to compare Vtip to Vmax on a 15-minute block average basis.

(18) Calculation methods for determining flare vent gas net heating value. The owner or operator shall determine the net heating value of the flare vent gas (NHVvg) based on the composition monitoring data on a 15-minute block average basis according to the following requirements. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) If compositional analysis data are collected as provided in paragraph (j)(1) or (2) of §63.670 , the owner or operator shall determine NHVvg of a specific sample by using the following equation.

$$NHV_{vg} = \sum_{i=1}^{n} x_i NHV_i$$

Where:

NHV_{vg} =	Net heating value of flare vent gas, Btu/scf.
i =	Individual component in flare vent gas.
n =	Number of components in flare vent gas.
x_i =	Concentration of component i in flare vent gas, volume fraction.
NHV_i =	Net heating value of component i according to table 12 of this subpart, Btu/scf. If the component is not specified in table 12 of this subpart, the heats of combustion may be determined using any published values where the net enthalpy per mole of offgas is based on combustion at 25 °C and 1 atmosphere (or constant pressure) with offgas water in the gaseous state, but the standard temperature for determining the volume corresponding to one mole of vent gas is 20 °C.

(ii) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 but a hydrogen concentration monitor is not used, the owner or operator shall use the direct output of the monitoring system(s) (in Btu/scf) to determine the NHVvg for the sample.

(iii) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 and hydrogen concentration monitoring data are collected as provided in paragraph (j)(4) of §63.670 , the owner or operator shall use the following equation to determine NHVvg for each sample measured via the net heating value monitoring system.

$NHV_{vg} = NHV_{measured}\ 938xH2$

Where:

NHVvg =	Net heating value of flare vent gas, Btu/scf.
NHVmeasured =	Net heating value of flare vent gas stream as measured by the continuous net heating value monitoring system, Btu/scf.
xH2 =	Concentration of hydrogen in flare vent gas at the time the sample was input into the net heating value monitoring system, volume fraction.
938 =	Net correction for the measured heating value of hydrogen (1,212 − 274), Btu/scf.

(iv) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block averages.

(v) When a continuous monitoring system is used as provided in paragraph (j)(1) or (3) of §63.670 and, if applicable, paragraph (j)(4) of §63.670, the owner or operator may elect to determine the 15-minute block average NHVvg using either the calculation methods in paragraph (l)(5)(i) of §63.670 or the calculation methods in paragraph (l)(5)(ii) of §63.670. The owner or operator may choose to comply using the calculation methods in paragraph (l)(5)(i) of §63.670 for some flares at the petroleum refinery and comply using the calculation methods (l)(5)(ii) of §63.670 for other flares. However, for each flare, the owner or operator must elect one calculation method that will apply at all times, and use that method for all continuously monitored flare vent streams associated with that flare. If the owner or operator intends to change the calculation method that applies to a flare, the owner or operator must notify AMS and EPA 30 days in advance of such a change.

(A) Feed-forward calculation method. When calculating NHVvg for a specific 15-minute block:

(1) Use the results from the first sample collected during an event, (for periodic flare vent gas flow events) for the first 15-minute block associated with that event.

(2) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the second 15-minute block associated with that event.

(3) For all other cases, use the results that are available from the most recent sample prior to the 15-minute block period for that 15-minute block period for all flare vent gas steams. For the

purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:45 a.m. to 1:00 a.m.

(B) Direct calculation method. When calculating NHVvg for a specific 15-minute block:

(1) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the first 15-minute block associated with that event.

(2) For all other cases, use the arithmetic average of all NHVvg measurement data results that become available during a 15-minute block to calculate the 15-minute block average for that period. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:30 a.m. to 12:45 a.m.

(vi) When grab samples are used to determine flare vent gas composition:

(A) Use the analytical results from the first grab sample collected for an event for all 15-minute periods from the start of the event through the 15-minute block prior to the 15-minute block in which a subsequent grab sample is collected.

(B) Use the results from subsequent grab sampling events for all 15 minute periods starting with the 15-minute block in which the sample was collected and ending with the 15-minute block prior to the 15-minute block in which the next grab sample is collected. For the purpose of this requirement, use the time the sample was collected rather than the time the analytical results become available.

(vii) If the owner or operator monitors separate gas streams that combine to comprise the total flare vent gas flow, the 15-minute block average net heating value shall be determined separately for each measurement location according to the methods in paragraphs (l)(1) through (6) of §63.670 and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

(19) Calculation methods for determining combustion zone net heating value. The owner or operator shall determine the net heating value of the combustion

zone gas (NHVcz) as specified in paragraph (m)(1) or (2) of §63.670, as applicable. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as specified in paragraph (m)(2) of §63.670 , determine the 15-minute block average NHVcz based on the 15-minute block average vent gas and assist gas flow rates using the following equation. For periods when there is no assist steam flow or premix assist air flow, NHVcz = NHVvg.

$$NHV_{cz} = \frac{Q_{vg} \times NHV_{vg}}{(Q_{vg} + Q_s + Q_{a,premix})}$$

Where:

NHV_{cz} =	Net heating value of combustion zone gas, Btu/scf.
NHV_{vg} =	Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Q_{vg} =	Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.
Q_s =	Cumulative volumetric flow of total steam during the 15-minute block period, scf.
$Q_{a,premix}$ =	Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

(ii) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVcz using the following equation.

$$NHV_{cz} = \frac{(Q_{vg} - Q_{NG2} + Q_{NG1}) \times NHV_{vg} + (Q_{NG2} - Q_{NG1}) \times NHV_{NG}}{(Q_{vg} + Q_s + Q_{a,premix})}$$

Where:

NHV_{cz} =	Net heating value of combustion zone gas, Btu/scf.
NHV_{vg} =	Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Q_{vg} =	Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Q_{NG2} = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.

Q_{NG1} = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1=QNG2.

NHV_{NG} = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Q_s = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

$Q_{a,premix}$ = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

(20) Calculation methods for determining the net heating value dilution parameter. The owner or operator shall determine the net heating value dilution parameter (NHVdil) as specified in paragraph (n)(1) or (2) of §63.670, as applicable. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as specified in paragraph (n)(2) of §63.670 , determine the 15-minute block average NHVdil based on the 15-minute block average vent gas and perimeter assist air flow rates using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{Q_{vg} \times Diam \times NHV_{vg}}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHV_{dil} = Net heating value dilution parameter, Btu/ft 2.

NHV_{vg} = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Q_{vg} = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as $Diam = 2 \times \sqrt{\frac{Area}{\pi}}$.

Q_s = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

$Q_{a,premix}$ = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

$Q_{a,perimeter}$ = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

(ii) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVdil using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{[(Q_{vg} - Q_{NG2} + Q_{NG1}) \times NHV_{vg} + (Q_{NG2} - Q_{NG1}) \times NHV_{NG}] \times Diam}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHV_{dil} = Net heating value dilution parameter, Btu/ft 2.

NHV_{vg} = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Q_{vg} = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Q_{NG2} = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.

Q_{NG1} = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1 =QNG2.

NHV_{NG} = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as $Diam = 2 \times \sqrt{\frac{Area}{\pi}}$.

Q_s = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

$Q_{a,premix}$ = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

$Q_{a,perimeter}$ = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

(21) Emergency flaring provisions. The owner or operator of a flare that has the potential to operate above its smokeless capacity under any circumstance shall comply with the provisions in paragraphs (o)(1) through (8) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Develop a flare management plan to minimize flaring during periods of startup, shutdown, or emergency releases. The flare management plan must include the information described in paragraphs (o)(1)(i) through (vii) of §63.670 .

(A) A listing of all refinery process units, ancillary equipment, and fuel gas systems connected to the flare for each affected flare.

(B) An assessment of whether discharges to affected flares from these process units, ancillary equipment and fuel gas systems can be minimized or prevented during periods of startup, shutdown, or emergency releases. The flare minimization assessment must (at a minimum) consider the items in paragraphs (o)(1)(ii)(A) through (C) of §63.670 . The assessment must provide clear rationale in terms of costs (capital and annual operating), natural gas offset credits (if applicable), technical feasibility, secondary environmental impacts and safety considerations for the selected minimization alternative(s) or a statement, with justifications, that flow reduction could not be achieved. Based upon the assessment, each owner or operator of an affected flare shall identify the minimization alternatives that it has implemented by the due date of the flare management plan and shall include a schedule for the prompt implementation of any selected measures that cannot reasonably be completed as of that date.

(1) Modification in startup and shutdown procedures to reduce the quantity of process gas discharge to the flare.

(2) Implementation of prevention measures listed for pressure relief devices in § 63.648(j)(5) for each pressure relief device that can discharge to the flare.

(3) Installation of a flare gas recovery system or, for facilities that are fuel gas rich, a flare gas recovery system and a co-generation unit or combined heat and power unit.

(C) A description of each affected flare containing the information in paragraphs (o)(1)(iii)(A) through (G) of §63.670.

(1) A general description of the flare, including whether it is a ground flare or elevated (including height), the type of assist system (e.g., air, steam, pressure, non-assisted), whether the flare is used on a routine basis or if it is only used during periods of startup, shutdown or emergency release, and whether the flare is equipped with a flare gas recovery system.

(2) The smokeless capacity of the flare based on design conditions. Note: A single value must be provided for the smokeless capacity of the flare.

(3) The maximum vent gas flow rate (hydraulic load capacity).

(4) The maximum supplemental gas flow rate.

(5) For flares that receive assist steam, the minimum total steam rate and the maximum total steam rate.

(6) For flares that receive assist air, an indication of whether the fan/blower is single speed, multi-fixed speed (e.g., high, medium, and low speeds), or variable speeds. For fans/blowers with fixed speeds, provide the estimated assist air flow rate at each fixed speed. For variable speeds, provide the design fan curve (e.g., air flow rate as a function of power input).

(7) Simple process flow diagram showing the locations of the flare following components of the flare: Flare tip (date installed, manufacturer, nominal and effective tip diameter, tip drawing); knockout or surge drum(s) or pot(s) (including dimensions and design capacities); flare header(s) and subheader(s); assist system; and ignition system.

(D) Description and simple process flow diagram showing all gas lines (including flare waste gas, purge or sweep gas (as applicable), supplemental gas) that are associated with the flare. For purge, sweep, supplemental gas, identify the type of gas used. Designate which lines are exempt from composition or net heating value monitoring and why (e.g., natural gas, gas streams that have been demonstrated to have consistent composition, pilot gas). Designate which lines are monitored and identify on the process flow diagram the location and type of each monitor. Designate the pressure relief devices that are vented to the flare.

(E) For each flow rate, gas composition, net heating value or hydrogen concentration monitor identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of the manufacturer's specifications, including, but not limited to, make, model, type, range, precision, accuracy, calibration, maintenance and quality assurance procedures.

(F) For each pressure relief device vented to the flare identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of each pressure release device, including type of relief device (rupture disc, valve type) diameter of the relief device opening, set pressure of the relief device and listing of the prevention measures implemented. This information may be maintained in an electronic database on-site and does not need to be submitted as part of the flare management plan unless requested to do so by AMS and EPA.

(G) Procedures to minimize or eliminate discharges to the flare during the planned startup and shutdown of the refinery process units and

ancillary equipment that are connected to the affected flare, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(ii) Each owner or operator required to develop and implement a written flare management plan as described in paragraph (o)(1) of §63.670 must submit the plan to AMS and EPA as described in paragraphs (o)(2)(i) through (iii) of §63.670 .

(A) The owner or operator must develop and implement the flare management plan no later than January 30, 2019 or at startup for a new flare that commenced construction on or after February 1, 2016.

(B) The owner or operator must comply with the plan as submitted by the date specified in paragraph (o)(2)(i) of §63.670 . The plan should be updated periodically to account for changes in the operation of the flare, such as new connections to the flare or the installation of a flare gas recovery system, but the plan need be re-submitted to AMS and EPA only if the owner or operator alters the design smokeless capacity of the flare. The owner or operator must comply with the updated plan as submitted.

(C) All versions of the plan submitted to AMS and EPA shall also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to refineryRTR@epa.gov.

(iii) The owner or operator of a flare subject to this subpart shall conduct a root cause analysis and a corrective action analysis for each flow event that contains regulated material and that meets either the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(A) The vent gas flow rate exceeds the smokeless capacity of the flare and visible emissions are present from the flare for more than 5 minutes during any 2 consecutive hours during the release event.

(B) The vent gas flow rate exceeds the smokeless capacity of the flare and the 15-minute block average flare tip velocity exceeds the maximum flare tip velocity determined using the methods in paragraph (d)(2) of §63.670 .

(iv) A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a flare flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (o)(4)(i) through (v) of §63.670 .

(A) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event that meets both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 .

(B) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event regardless of the number of 15-minute block periods in which the flare tip velocity was exceeded or the number of 2 hour periods that contain more the 5 minutes of visible emissions.

(C) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares that are operated in series (i.e., cascaded flare systems) to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(D) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670, regardless of the configuration of the flares, if the root cause is reasonably expected to be a force majeure event, as defined in this subpart.

(E) Except as provided in paragraphs (o)(4)(iii) and (iv) of §63.670 , if more than one flare has a flow event that meets the criteria in paragraph (o)(3)(i) or (ii) of §63.670 during the same time period, an initial root cause analysis shall be conducted separately for each flare that has a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . If the initial root cause analysis indicates that the flow events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(v) Each owner or operator of a flare required to conduct a root cause analysis and corrective action analysis as specified in paragraphs (o)(3) and (4) of §63.670 shall implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (o)(5)(i) through (iii) of §63.670 .

(A) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that no corrective action should be implemented, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the event.

(B) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(C) No later than 45 days following the event for which a root cause and corrective action analyses were required, the owner or operator shall

record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(vi) The owner or operator shall determine the total number of events for which a root cause and corrective action analyses was required during the calendar year for each affected flare separately for events meeting the criteria in paragraph (o)(3)(i) of §63.670 and those meeting the criteria in paragraph (o)(3)(ii) of §63.670 . For the purpose of this requirement, a single root cause analysis conducted for an event that met both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 would be counted as an event under each of the separate criteria counts for that flare. Additionally, if a single root cause analysis was conducted for an event that caused multiple flares to meet the criteria in paragraph (o)(3)(i) or (ii) of §63.670 , that event would count as an event for each of the flares for each criteria in paragraph (o)(3) of §63.670 that was met during that event. The owner or operator shall also determine the total number of events for which a root cause and correct action analyses was required and the analyses concluded that the root cause was a force majeure event, as defined in this subpart.

(vii) The following events would be a violation of this emergency flaring work practice standard.

(A) Any flow event for which a root cause analysis was required and the root cause was determined to be operator error or poor maintenance.

(B) Two visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(C) Two flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(D) Three visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for any reason.

(E) Three flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for any reason.

Point Breeze South Yard South Flare (P-643)

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(22) The flare shall be operated with a minimum of a 98% Combustion Efficiency at all times when waste gases are vented to it. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e), AMS Plan Approval 15271 dated 4/25/17]

(23) PES shall operate and maintain a flare gas recovery system to prevent continuous or routine combustion in the flare. [Consent Decree, Use of the flare gas recovery system obviates the need to continuously monitor emissions as otherwise required by 40 CFR 60.105(a)(4), AMS Plan Approval 15271 dated 4/25/17]

(i) Periodic maintenance shall be conducted for flare gas recovery systems.

(ii) All reasonable measures shall be taken to minimize emissions during the periodic maintenance on a flare gas recovery system is being performed.

(iii) The flare gas recovery system may be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes.

(24) The Permittee shall develop and implement a written flare management plan no later than the November 11, 2015 in accordance with 40 CFR 60.103a [AMS Plan Approval 15271 dated 4/25/17].

(i) The Permittee shall conduct a root cause analysis and a corrective action analysis for each of the following [Consent Decree and 40 CFR 103a(c)]

(A) Any time the SO_2 emission exceeds 227 kilograms (kg) (500 lbs) in any 24-hour period; or

(B) Any discharge to the flare in excess of 14,160 standard cubic meter (m3) (500,000 standard cubic feet (scf)) above the baseline, determined in 40 CFR 60.103a(a)(4).

(25) The Permittee shall complete a root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified Condition D.4(b)(24)(i) above. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are as follows: [40 CFR 60.103a(d)]

(i) If a single continuous discharge meets any of the conditions specified in Condition D.4(b)(24)(i) for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.

(ii) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions in Condition D.4(b)(24)(i), a single root cause analysis and corrective action analysis may be conducted.

(iii) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in 40 CFR 60.103a(a)(5) were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in §60.108a(c)(6) and reported as described in §60.108a(d)(5).

(iv) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in 40 CFR 60.103a(c)(1)(i)-(iii) in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted.

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(v) Except as provided above in Condition D.4(b)(25), if discharges occur that meet any of the conditions specified in Condition D.4(b)(24)(i) above for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(26) The Permittee shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to Condition D.4(b)(25) above in accordance with the following applicable requirements: [40 CFR 60.103a(e)]

(i) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the Permittee concludes that corrective action should not be conducted, the Permittee shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 CFR §60.108a(c)(6)(ix).

(ii) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(iii) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the Permittee shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 CFR §60.108a(c)(6)(x).

Point Breeze LPG Flare (CD-104)

(27) The permittee shall not burn any fuel gas that contains H2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis in the LPG Flare. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit. [40 CFR §60.103a(h)] [AMS Installation Permit No. IP18-00260 & IP18-000263 Issued September 9, 2018]

(28) All bypass vent streams shall be equipped with flow indicators and recorders. As an alternative, the Permittee may secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4), 40 CFR 63.645(c)]

(c) Testing Requirements
[25 PA Code §139]

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(1) Test methods and procedures for SO_2 from combustion sources shall be equivalent to or modified to produce results equivalent to those which would be obtained by employing procedures specified in PADER Source Testing Manual. Details for sampling equipment are contained in either Appendix A of 40 CFR 60 or the PADER Source Testing Manual [25 PA Code §139.13(1)].

(2) Test Method 22 in Appendix A of 40 CFR 60 shall be used to determine the compliance of flares with the visible emission limitations. The observation period is 2 hours and shall be used according to Method 22. [40 CFR 63.11(b)(4), 40 CFR 60.18(f)(1)]

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation [40 CFR 60.18(f)(3)]:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i=Concentration of sample component “i” in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

(5) The maximum permitted velocity, V_{max}, for flares complying with Section D.3(b)(9)(i) shall be determined by the following equation: [40 CFR 60.18(f)(5)]

$$\text{Log10}\ (V_{max}) = (HT + 28.8)/31.7$$

where:

V_{max}=Maximum permitted velocity, M/sec

28.8=Constant

31.7=Constant

H_T=The net heating value as determined in 40 CFR 60.18 (f)(3).

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

The Permittee shall monitor the following:

(1) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2), AMS Plan Approval 15271 dated 4/25/17]

(2) The Permittee shall monitor the fuel type and fuels usage and sulfur content of the fuel burned for each flare pilot on a daily basis. [AMS Plan Approval 15271 dated 4/25/17]

(3) The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO_2 emissions using the same analysis and calculations used in the modeling demonstration. [AMS Plan Approval 15271 dated 4/25/17]

(4) The Permittee shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.18(d)]

(5) The flares 1231,1232, and 433 flares shall operate as a fuel gas combustion device, monitoring the fuel gases put into the flare header.

(6) SO_2 Emission Calculations for the Acid Gas (AG) Flaring [Consent Decree Order 05-CV-2866]

(i) The quantity of SO_2 emissions resulting from AG Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR] [TD] [ConcH_2S] [8.44×10^{-5}].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Acid Gas was first flared.

(ii) The rate of SO_2 emissions from AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

ER = [FR] [ConcH_2S] [0.169].

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

where

ER = Emission Rate in pounds of SO_2 per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour

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TD = Total Duration of Flaring Incident in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment.

(7) The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The Permittee shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H_2S.

(ii) The Permittee shall conduct performance evaluations for each H_2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.

(iii) The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(iv) Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned in the flares.

(v) The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H_2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph §§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument

Deleted: <#>EPA's determination for 1231/1232 Plant Flare system AMP [dated June 3, 2011]¶
<#>For the 455 car-seal closed connections, the Permittee shall monitor monthly to determine if these valves have been opened and are still intact. Valves that are found to have broken seals will be reported in the Permittee's semiannual flare report as required by the Consent Decree¶
<#>For the 10 pressure control valves listed in Table 1 of AMP in Section G, the Permittee shall use material balances and engineering knowledge to determine whether 500 lbs or more of the SO_2 in a 24 hour period has been released when a valve has opened due to malfunction. If this standard is exceeded, a hydrocarbon flaring incident has occurred and will be addressed as one in accordance with the Consent Decree¶
<#>For the 7 connections listed in Table 2 of the AMP in Section G, the Permittee shall use approved CEMs to monitor and demonstrate compliance.¶
<#>For the 11 connections listed in Table 2 of the AMP in Section G, the Permittee shall conduct a one-time sampling to estimated total SO_2 emissions are under 100 lbs/day as allowed under Appendix H of the Consent Decree.¶
<#>EPA's determination for 433 Unit Plant Flare system AMP [dated June 3, 2011]¶
<#>For the 5 connections described in the Amp in Section G, the Permittee shall use approved CEMs to monitor and demonstrate compliance.¶
<#>No further sampling is required for exempt streams and pressure relief valves.¶
<#>The Permittee shall monitor monthly to verify that the seals of the car-sealed valves have not been opened and are intact. Valves that are found to have broken seals will be reported in the Permittee's semiannual flare report as required by the Consent Decree¶

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required in paragraph (e)(1) is used to demonstrate compliance with the H_2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).

(8) The Permittee is not required to comply with Condition D.4(d)(9)(i)-(vi) for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the following requirements shall be considered inherently low in sulfur content. [40 CFR §60.107a(3), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Pilot gas for heaters and flares.

(ii) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.

(iii) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.

(iv) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in Condition D.4(d)(11).

(A) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in Condition D.4(d)(11)(iii). [40 CFR §60.107a(b)(3)]

(9) Exemption from H_2S monitoring requirements for low-sulfur fuel gas streams. The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H_2S monitoring requirements in Condition D.4(b)(10) for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs in 40 CFR 60§ 107a (a)(1) and (2) until there are changes in operating conditions or stream composition. [40 CFR §60.107a(b), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(A) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;

(B) A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);

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Deleted: (vi) . The owner or operator of modified flare that meets the following all three criteria shall comply with the requirements of Condition D.4(d)(9)(i)-(v) no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans pursuant to §60.13(i) until the flare is in compliance with requirements of Condition D.4(d)(9)(i)-(v).¶
(A) . The flare was an affected facility subject to subpart J of this part prior to becoming an affected facility under §60.100a.¶
(B) The owner or operator had an approved alternative monitoring plan or plans pursuant to §60.13(i) for all fuel gases combusted in the flare.¶
(C) . The flare did not have in place on or before September 12, 2012 an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases that is capable of complying with the requirements of Condition D.4(d)(9)(i)-(v).¶

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(C) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;

(D) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv H_2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. The owner or operator shall use detector tubes ("length-of-stain tube" type measurement) following the "Gas Processors Association Standard 2377-86 (incorporated by reference - see §60.17), using tubes with a maximum span between 10 and 40 ppmv inclusive when 1≤N≤10, where N = number of pump strokes, to test the applicant fuel gas stream for H_2S; and

(E) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H_2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H_2S content in the fuel gas stream going to the loading rack flare).

(ii) The effective date of the exemption is the date of submission of the information required in Condition D.4(d)(11)(i). [40 CFR 60§ 107a (b)(1)]

(iii) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in Conditions D.4(d)(11)(iii)(A), D.4(d)(11)(iii)(B), or D.4(d)(11)(iii)(C). [40 CFR §60.107a (b)(3)(i), (b)(3)(ii), or (b)(3)(iii)]

(A) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H_2S test on a grab sample and record the results as proof that the concentration is still within the range.

(B) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of Condition D.4(d)(11)(i) within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

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(C) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H_2S monitoring using daily stain sampling to demonstrate compliance using length-of-stain tubes with a maximum span between 200 and 400 ppmv inclusive when 1≤N≤5, where N = number of pump strokes. The owner or operator must begin monitoring according to the requirements in paragraphs §60.107a(a)(1) or (a)(2) as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H_2S concentration limit. The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H_2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

(10) Sulfur monitoring for assessing root cause analysis threshold for affected flares. Except as described in Condition D.4(d)(12)(iv), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii). Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii), the owner or operator of a modified flare must comply with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii) upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii), the owner or operator of a modified flare must comply with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii) of no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(e), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Total reduced sulfur monitoring requirements. The owner or operator shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(A) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this

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paragraph and paragraph (a)(2) of §60 107a provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to this part. The owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each total reduced sulfur monitor.

(ii) H_2S monitoring requirements. The owner or operator shall install, operate, calibrate, and maintain an instrument or instruments for continuously monitoring and recording the concentration of H_2S in gas discharged to the flare according to the requirements in Condition D.4(d)(12)(ii)(A)-(C) and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in Conditions D.4(d)(12)(ii)(D)-(I).

(A) The owner or operator shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H_2S monitor may be used to comply with the requirements of this paragraph and Condition D.4(d)(9) provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each H_2S monitor according to the requirements in §60.13(c) and Performance Specification 7 of appendix B to this part. The owner or operator shall use EPA Method 11, 15 or 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference - see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not

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necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(D) In the first 10 operating days after the date the flare must begin to comply with §60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in Condition D.4(d)(12)(ii)(I).

(E) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of appendix A-5 to part 60, EPA Method 16A of appendix A-6 to part 60, ASTM Method D4468-85 (Reapproved 2006) (incorporated by reference - see §60.17) or ASTM Method D5504-08 (incorporated by reference - see §60.17).

(F) The owner or operator shall develop a 10-day average total sulfur-to-H_2S ratio and 95-percent confidence interval as follows:

(1) Calculate the ratio of the total sulfur concentration to the H_2S concentration for each day during which samples are collected.

(2) Determine the 10-day average total sulfur-to-H_2S ratio as the arithmetic average of the daily ratios calculated in Condition D.4(d)(12)(ii)(F)(1).

(3) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios based on the 10 individual daily ratios using Equation 14 of §60.107a.

$$AR = Ratio_{avg} \pm 2.262 \times SDev$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

$Ratio_{Avg}$ = 10-day average total sulfur-to-H_2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H_2S concentration ratios used to develop the 10-day average total sulfur-to-H_2S concentration ratio, unitless.

(G) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the

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total sulfur concentration using the measured total sulfur concentration measured for that day.

(H) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H_2S ratio by the daily average H_2S concentrations obtained using the monitor as required by paragraph Condition D.4(d)(12)(ii)(A) through (C) to estimate total sulfur concentrations.

(I) If the total sulfur-to-H_2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(iii) SO_2 monitoring requirements. The owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of SO_2 from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of 60 §107a, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of 60 §107a, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of 60 §107a, and calculate the total sulfur content (as SO_2) in the fuel gas using Equation 15 of 60 §107a.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG}$$

Where:

TS_{FG} = Total sulfur concentration, as SO_2, in the fuel gas, ppmv.

C_{SO_2} = Concentration of SO_2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

F_d = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHV_{FG} = Higher heating value of the fuel gas, MMBtu/scf.

(iv) Exemptions from sulfur monitoring requirements. Flares identified in Conditions D.4(d)(12)(iv)(A) through (D) are exempt from the requirements in Conditions D.4(d)(12)(i) through (iii). For each such flare, except as provided in Condition D.4(d)(12)(iv)(D), engineering calculations shall be used to calculate the SO_2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(A) Flares that can only receive:

(1) Fuel gas streams that are inherently low in sulfur content as described in Conditions D.4(d)(10)(i) through (iv); and/or

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(2) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H_2S monitoring requirements as described in Condition D.4(d)(11).

(B) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(14).

(C) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(14).

(D) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO_2 emissions, regardless of whether or not the monitoring alternative in Condition D.4(d)(14) is selected for the secondary flare.

(11) Flow monitoring for flares. The owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition D.4(d)(13)(i), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.

(A) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.

(B) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.

(C) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.

(D) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.

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(E) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

(12) Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(13) Excess emissions. For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions D.4(d)(15)(i) and (ii). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(i) H_2S concentration limits for flares.

(A) Each rolling 3-hour period during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under Condition D.4(d)(9) exceeds 162 ppmv.

(ii) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition D.4(d)(11)(iii)(C), each day during which the daily concentration of H_2S exceeds 162 ppmv.

(14) Pilot flame monitoring. The owner or operator shall continuously monitor the presence of the pilot flame(s) using a device (including, but not limited to, a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of detecting that the pilot flame(s) is present. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(15) Visible emissions monitoring. The owner or operator shall monitor visible emissions while regulated materials are vented to the flare. An initial visible emissions demonstration must be conducted using an observation period of 2 hours using Method 22 at 40 CFR part 60, appendix A-7. Subsequent visible emissions observations must be conducted using either the methods in paragraph (h)(1) of §63.670 or, alternatively, the methods in paragraph (h)(2) of §63.670 . The owner or operator must record and report any instances where visible emissions are observed for more than 5 minutes during any 2 consecutive hours as specified in § 63.655(g)(11)(ii). [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) At least once per day, conduct visible emissions observations using an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If at any time the owner or operator sees visible emissions,

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even if the minimum required daily visible emission monitoring has already been performed, the owner or operator shall immediately begin an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If visible emissions are observed for more than one continuous minute during any 5-minute observation period, the observation period using Method 22 at 40 CFR part 60, appendix A-7 must be extended to 2 hours or until 5-minutes of visible emissions are observed.

(ii) Use a video surveillance camera to continuously record (at least one frame every 15 seconds with time and date stamps) images of the flare flame and a reasonable distance above the flare flame at an angle suitable for visual emissions observations. The owner or operator must provide real-time video surveillance camera output to the control room or other continuously manned location where the camera images may be viewed at any time.

(16) Flare vent gas, steam assist and air assist flow rate monitoring. The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare header or headers that feed the flare as well as any supplemental natural gas used. Different flow monitoring methods may be used to measure different gaseous streams that make up the flare vent gas provided that the flow rates of all gas streams that contribute to the flare vent gas are determined. If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare. If pre-mix assist air and perimeter assist are both used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

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(i) The flow rate monitoring systems must be able to correct for the temperature and pressure of the system and output parameters in standard conditions (i.e., a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere).

(ii) Mass flow monitors may be used for determining volumetric flow rate of flare vent gas provided the molecular weight of the flare vent gas is determined using compositional analysis as specified in paragraph (j) of §63.670 so that the mass flow rate can be converted to volumetric flow at standard conditions using the following equation.

$$Q_{vol} = \frac{Q_{mass} \times 385.3}{MWt}$$

Where:

Qvol = Volumetric flow rate, standard cubic feet per second.
Qmass = Mass flow rate, pounds per second.
385.3 = Conversion factor, standard cubic feet per pound-mole.
MWt = Molecular weight of the gas at the flow monitoring location, pounds per pound-mole.

(iii) Mass flow monitors may be used for determining volumetric flow rate of assist air or assist steam. Use equation in paragraph (i)(2) of §63.670 to convert mass flow rates to volumetric flow rates. Use a molecular weight of 18 pounds per pound-mole for assist steam and use a molecular weight of 29 pounds per pound-mole for assist air.

(iv) Continuous pressure/temperature monitoring system(s) and appropriate engineering calculations may be used in lieu of a continuous volumetric flow monitoring systems provided the molecular weight of the gas is known. For assist steam, use a molecular weight of 18 pounds per pound-mole. For assist air, use a molecular weight of 29 pounds per pound-mole. For flare vent gas, molecular weight must be determined using compositional analysis as specified in paragraph (j) of §63.670.

(17) Flare vent gas composition monitoring. The owner or operator shall determine the concentration of individual components in the flare vent gas using either the methods provided in paragraph (j)(1) or (2) of §63.670, to assess compliance with the operating limits in paragraph (e) of §63.670 and, if applicable, paragraphs (d) and (f) of §63.670 . Alternatively, the owner or operator may elect to directly monitor the net heating value of the flare vent gas following the methods provided in paragraphs (j)(3) of §63.670 and, if desired, may directly measure the hydrogen concentration in the flare vent gas following the methods provided in paragraphs (j)(4) of §63.670 . The owner or operator may elect to use different monitoring methods for different gaseous streams that make up the flare vent gas using different methods provided the composition or net heating value of all gas streams that contribute to the flare vent gas are determined. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

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(i) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring (i.e., at least once every 15-minutes), calculating, and recording the individual component concentrations present in the flare vent gas.

(ii) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, and maintain a grab sampling system capable of collecting an evacuated canister sample for subsequent compositional analysis at least once every eight hours while there is flow of regulated material to the flare. Subsequent compositional analysis of the samples must be performed according to Method 18 of 40 CFR part 60, appendix A-6, ASTM D6420-99 (Reapproved 2010), ASTM D1945-03

(Reapproved 2010), ASTM D1945-14 or ASTM UOP539-12 (all incorporated by reference - see § 63.14).

(iii) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a calorimeter capable of continuously measuring, calculating, and recording NHVvg at standard conditions.

(iv) If the owner or operator uses a continuous net heating value monitor according to paragraph (j)(3) of §63.670 , the owner or operator may, at their discretion, install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the hydrogen concentration in the flare vent gas.

(v) Direct compositional or net heating value monitoring is not required for purchased ("pipeline quality") natural gas streams. The net heating value of purchased natural gas streams may be determined using annual or more frequent grab sampling at any one representative location. Alternatively, the net heating value of any purchased natural gas stream can be assumed to be 920 Btu/scf.

(vi) Direct compositional or net heating value monitoring is not required for gas streams that have been demonstrated to have consistent composition (or a fixed minimum net heating value) according to the methods in paragraphs (j)(6)(i) through (v) of §63.670 .

(A) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(1) A description of the flare gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the flare gas stream/system and the affected flare(s) to be considered;

(2) A statement that there are no crossover or entry points to be introduced into the flare gas stream/system (this should be shown in the piping diagrams) prior to the point where the flow rate of the gas streams is measured;

(3) An explanation of the conditions that ensure that the flare gas net heating value is consistent and, if flare gas net heating value is expected to vary (e.g., due to product loading of different material), the conditions expected to produce the flare gas with the lowest net heating value;

(4) The supporting test results from sampling the requested flare gas stream/system for the net heating value. Sampling data must include, at minimum, 2 weeks of daily measurement values (14 grab samples) for frequently operated flare gas streams/systems; for infrequently operated flare gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. If the flare gas stream composition can vary, samples must be

taken during those conditions expected to result in lowest net heating value identified in paragraph (j)(6)(i)(C) of §63.670 . The owner or operator shall determine net heating value for the gas stream using either gas composition analysis or net heating value monitor (with optional hydrogen concentration analyzer) according to the method provided in paragraph (l) of §63.670 ; and

(5) A description of how the 2 weeks (or seven samples for infrequently operated flare gas streams/systems) of monitoring results compares to the typical range of net heating values expected for the flare gas stream/system going to the affected flare (e.g., “the samples are representative of typical operating conditions of the flare gas stream going to the loading rack flare” or “the samples are representative of conditions expected to yield the lowest net heating value of the flare gas stream going to the loading rack flare”).

(6) The net heating value to be used for all flows of the flare vent gas from the flare gas stream/system covered in the application. A single net heating value must be assigned to the flare vent gas either by selecting the lowest net heating value measured in the sampling program or by determining the 95th percent confidence interval on the mean value of all samples collected using the t-distribution statistic (which is 1.943 for 7 grab samples or 1.771 for 14 grab samples).

(B) The effective date of the exemption is the date of submission of the information required in paragraph (j)(6)(i) of §63.670 .

(C) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in paragraph (j)(6)(iii)(A), (B), or (C) of §63.670 .

(1) If the operation change results in a flare vent gas net heating value that is still within the range of net heating values included in the original application, the owner or operator shall determine the net heating value on a grab sample and record the results as proof that the net heating value assigned to the vent gas stream in the original application is still appropriate.

(2) If the operation change results in a flare vent gas net heating value that is lower than the net heating value assigned to the vent gas stream in the original application, the owner or operator may submit new information following the procedures of paragraph (j)(6)(i) of §63.670 within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(3) If the operation change results in a flare vent gas net heating value has greater variability in the flare gas stream/system such the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin monitoring the composition or net heat content of the flare vent gas stream using the methods in §63.670 (i.e., grab samples every 8 hours until such time a continuous monitor, if elected, is installed).

(18) Operation of CPMS. For each CPMS installed to comply with applicable provisions in § 63.670, the owner or operator shall install, operate, calibrate, and maintain the CPMS as specified in paragraphs (a)(1) through (8) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

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(i) Except for CPMS installed for pilot flame monitoring, all monitoring equipment must meet the applicable minimum accuracy, calibration and quality control requirements specified in table 13 of this subpart.

(ii) The owner or operator shall ensure the readout (that portion of the CPMS that provides a visual display or record) or other indication of the monitored operating parameter from any CPMS required for compliance is readily accessible onsite for operational control or inspection by the operator of the source.

(iii) All CPMS must complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.

(iv) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall operate all CPMS and collect data continuously at all times when regulated emissions are routed to the flare.

(v) The owner or operator shall operate, maintain, and calibrate each CPMS according to the CPMS monitoring plan specified in paragraph (b) of §63.671 .

(vi) For each CPMS except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraph (c) of §63.671 .

(vii) The owner or operator shall reduce data from a CPMS as specified in paragraph (d) of §63.671.

(viii) The CPMS must be capable of measuring the appropriate parameter over the range of values expected for that measurement location. The data recording system associated with each CPMS must have a resolution that is equal to or better than the required system accuracy.

(19) CPMS monitoring plan. The owner or operator shall develop and implement a CPMS quality control program documented in a CPMS monitoring plan that covers each flare subject to the provisions in §63.670 and each CPMS installed to comply with applicable provisions in §63.670. The owner or

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operator shall have the CPMS monitoring plan readily available on-site at all times and shall submit a copy of the CPMS monitoring plan to AMS and EPA upon request by AMS and EPA. The CPMS monitoring plan must contain the information listed in paragraphs (b)(1) through (5) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Identification of the specific flare being monitored and the flare type (air-assisted only, steam-assisted only, air- and steam-assisted, pressure-assisted, or non-assisted).

(ii) Identification of the parameter to be monitored by the CPMS and the expected parameter range, including worst case and normal operation.

(iii) Description of the monitoring equipment, including the information specified in paragraphs (b)(3)(i) through (vii) of §63.670 .

(A) Manufacturer and model number for all monitoring equipment components installed to comply with applicable provisions in § 63.670.

(B) Performance specifications, as provided by the manufacturer and any differences expected for this installation and operation.

(C) The location of the CPMS sampling probe or other interface and a justification of how the location meets the requirements of paragraph (a)(1) of §63.670 .

(D) Placement of the CPMS readout, or other indication of parameter values, indicating how the location meets the requirements of paragraph (a)(2) of §63.670 .

(E) Span of the CPMS. The span of the CPMS sensor and analyzer must encompass the full range of all expected values.

(F) How data outside of the span of the CPMS will be handled and the corrective action that will be taken to reduce and eliminate such occurrences in the future.

(G) Identification of the parameter detected by the parametric signal analyzer and the algorithm used to convert these values into the operating parameter monitored to demonstrate compliance, if the parameter detected is different from the operating parameter monitored.

(iv) Description of the data collection and reduction systems, including the information specified in paragraphs (b)(4)(i) through (iii) of §63.670 .

(A) A copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard and to calculate the applicable averages.

(B) Identification of whether the algorithm excludes data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments.

(C) If the data acquisition algorithm does not exclude data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments, a description of the procedure for excluding this data when the averages calculated as specified in paragraph (e) of §63.670 are determined.

(v) Routine quality control and assurance procedures, including descriptions of the procedures listed in paragraphs (b)(5)(i) through (vi) of this section and a schedule for conducting these procedures. The routine procedures must provide an assessment of CPMS performance.

(A) Initial and subsequent calibration of the CPMS and acceptance criteria.

(B) Determination and adjustment of the calibration drift of the CPMS.

(C) Daily checks for indications that the system is responding. If the CPMS system includes an internal system check, the owner or operator may use the results to verify the system is responding, as long as the system provides an alarm to the owner or operator or the owner or operator checks the internal system results daily for proper operation and the results are recorded.

(D) Preventive maintenance of the CPMS, including spare parts inventory.

(E) Data recording, calculations and reporting.

(F) Program of corrective action for a CPMS that is not operating properly.

(20) Out-of-control periods. For each CPMS installed to comply with applicable provisions in § 63.670 except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraphs (c)(1) and (2) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

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(i) A CPMS is out-of-control if the zero (low-level), mid-level (if applicable) or high-level calibration drift exceeds two times the accuracy requirement of table 13 of this subpart.

(ii) When the CPMS is out of control, the owner or operator shall take the necessary corrective action and repeat all necessary tests that indicate the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established in this section is conducted. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. The owner or operator shall not use data recorded during periods the CPMS is out of control in data averages

and calculations, used to report emissions or operating levels, as specified in paragraph (d)(3) of this section.

(21) CPMS data reduction. The owner or operator shall reduce data from a CPMS installed to comply with applicable provisions in § 63.670 as specified in paragraphs (d)(1) through (3) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator may round the data to the same number of significant digits used in that operating limit.

(ii) Periods of non-operation of the process unit (or portion thereof) resulting in cessation of the emissions to which the monitoring applies must not be included in the 15-minute block averages.

(iii) Periods when the CPMS is out of control must not be included in the 15-minute block averages.

(22) Additional requirements for gas chromatographs. For monitors used to determine compositional analysis for net heating value per § 63.670(j)(1), the gas chromatograph must also meet the requirements of paragraphs (e)(1) through (3) of § 63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The quality assurance requirements are in table 13 of this subpart.

(ii) The calibration gases must meet one of the following options:

(A) The owner or operator must use a calibration gas or multiple gases that include all of compounds listed in paragraphs (e)(2)(i)(A) through (K) of this section that may be reasonably expected to exist in the flare gas stream and optionally include any of the compounds listed in paragraphs (e)(2)(i)(L) through (O) of this section. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.

(1) Hydrogen.

(2) Methane.

(3) Ethane.

(4) Ethylene.

(5) Propane.

(6) Propylene.

(7) n-Butane.

(8) iso-Butane.

(9) Butene (general). It is not necessary to separately speciate butene isomers, but the net heating value of trans-butene must be used for co-eluting butene isomers.

(10) 1,3-Butadiene. It is not necessary to separately speciate butadiene isomers, but you must use the response factor and net heating value of 1,3-butadiene for co-eluting butadiene isomers.

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(11) n-Pentane. Use the response factor for n-pentane to quantify all C5 hydrocarbons.
(12) Acetylene (optional).
(13) Carbon monoxide (optional).
(14) Propadiene (optional).
(15) Hydrogen sulfide (optional).

(B) The owner or operator must use a surrogate calibration gas consisting of hydrogen and C1 through C5 normal hydrocarbons. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.

(iii) If the owner or operator chooses to use a surrogate calibration gas under paragraph (e)(2)(ii) of §63.671, the owner or operator must comply with paragraphs (e)(3)(i) and (ii) of §63.671.

(A) Use the response factor for the nearest normal hydrocarbon (i.e., n-alkane) in the calibration mixture to quantify unknown components detected in the analysis.

(B) Use the response factor for n-pentane to quantify unknown components detected in the analysis that elute after n-pentane.

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Point Breeze South Yard South Flare (P-643)

The Permittee shall monitor the following:

(23) The quantity and heating value of the refinery fuel gas that is combusted in the flare daily. [AMS Plan Approval 15271 dated 4/25/17]

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Point Breeze LPG Flare (CD-104)

In accordance with Condition D.4.(d)(26)(ii) below, The Permittee is exempt from monitoring requirements listed in Conditions D.4.(d)(25), D.4.(d)(28)(i)-(iii), according to the EPA approved Alternative Monitoring Procedure (AMP), detailed in a letter from USEPA dated 15 April 2010. The Permittee must comply with the terms of the Alternative Monitoring Procedure (as described in D.4.(d)(32), and D.4.(f)(9)). If the gas stream composition ever changes or if the gas stream is no longer required to meet pipeline or product specifications, then the gas stream must be resubmitted to EPA for approval under the AMP. Conditions D.4.(d)(25) – (31) describe 40 CFR Subpart Ja requirements, and should be complied with unless the Permittee is otherwise exempt.

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The Permittee shall monitor the following:

(24) The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

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(i) The Permittee shall install, operate and maintain each H2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H2S.

(ii) The Permittee shall conduct performance evaluations for each H2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.

(iii) The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.

(iv) Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in the flares.

(v) The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph§§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument required in paragraph (e)(1) is used to demonstrate compliance with the H2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).

(vi) The owner or operator of modified flare that meets the following all three criteria shall comply with the requirements of Condition D.4(d)(25)(i)-(v) no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans pursuant to §60.13(i) until the flare is in compliance with requirements of Condition D.4(d)(25)(i)-(v).

(A) The flare was an affected facility subject to subpart J of this part prior to becoming an affected facility under §60.100a.

(B) The owner or operator had an approved alternative monitoring plan or plans pursuant to §60.13(i) for all fuel gases combusted in the flare.

(C) The flare did not have in place on or before September 12, 2012 an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases that is capable of complying with the requirements of Condition D.4(d)(25)(i)-(v).

(25) The Permittee is not required to comply with Condition D.4(d)(25)(i)-(vi) for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the following requirements shall be considered

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inherently low in sulfur content. [40 CFR §60.107a(3), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Pilot gas for heaters and flares.

(ii) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.

(iii) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.

(iv) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in Condition D.4(d)(27).

(A) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in Condition D.4(d)(27)(iii). [40 CFR §60.107a(b)(3)]

(26)Exemption from H2S monitoring requirements for low-sulfur fuel gas streams. The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H2S monitoring requirements in Condition D.4(b)(27) for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs in 40 CFR 60§ 107a (a)(1) and (2) until there are changes in operating conditions or stream composition. [40 CFR §60.107a(b), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(A) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;

(B) A statement that there are no crossover or entry points for sour gas (high H2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);

(C) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;

(D) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv H2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless

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other additional information would support reduced sampling. The owner or operator shall use detector tubes ("length-of-stain tube" type measurement) following the "Gas Processors Association Standard 2377-86 (incorporated by reference - see §60.17), using tubes with a maximum span between 10 and 40 ppmv inclusive when 1≤N≤10, where N = number of pump strokes, to test the applicant fuel gas stream for H2S; and

(E) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H2S content in the fuel gas stream going to the loading rack flare).

(ii) The effective date of the exemption is the date of submission of the information required in Condition D.4(d)(27)(i). [40 CFR 60§ 107a (b)(1)]

(iii) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in Conditions D.4(d)(27)(iii)(A), D.4(d)(27)(iii)(B), or D.4(d)(27)(iii)(C). [40 CFR §60.107a (b)(3)(i), (b)(3)(ii), or (b)(3)(iii)]

(A) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H2S test on a grab sample and record the results as proof that the concentration is still within the range.

(B) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of Condition D.4(d)(27)(i) within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(C) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H2S monitoring using daily stain sampling to demonstrate compliance using length-of-stain tubes with a maximum span between 200 and 400 ppmv inclusive when 1≤N≤5, where N = number of pump strokes. The owner or operator must begin monitoring according to the requirements in paragraphs §60.107a(a)(1) or (a)(2) as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H2S concentration limit.

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The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

(27) Sulfur monitoring for assessing root cause analysis threshold for affected flares. Except as described in Condition D.4(d)(28)(iv), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii). Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii), the owner or operator of a modified flare must comply with the requirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii) upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii), the owner or operator of a modified flare must comply with therequirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii) of no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(e), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Total reduced sulfur monitoring requirements. The owner or operator shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(A) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this paragraph and paragraph (a)(2) of §60 107a provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to this part. The owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not

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necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each total reduced sulfur monitor.

(ii) H2S monitoring requirements. The owner or operator shall install, operate, calibrate, and maintain an instrument or instruments for continuously monitoring and recording the concentration of H2S in gas discharged to the flare according to the requirements in Condition D.4(d)(28)(ii)(A)-(C) and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in Conditions D.4(d)(28)(ii)(D)-(I).

(A) The owner or operator shall install, operate and maintain each H2S monitor according to Performance Specification 7 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H2S monitor may be used to comply with the requirements of this paragraph and Condition D.4(d)(25) provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each H2S monitor according to the requirements in§60.13(c) and Performance Specification 7 of appendix B to this part. The owner or operator shall use EPA Method 11, 15 or 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference - see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.

(D) In the first 10 operating days after the date the flare must begin to comply with §60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in Condition D.4(d)(28)(ii)(I).

(E) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of appendix A-5 to part 60.

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EPA Method 16A of appendix A-6 to part 60, ASTM Method D4468-85 (Reapproved 2006) (incorporated by reference - see §60.17) or ASTM Method D5504-08 (incorporated by reference - see §60.17).

(F) The owner or operator shall develop a 10-day average total sulfur-to-H2S ratio and 95-percent confidence interval as follows:

(1) Calculate the ratio of the total sulfur concentration to the H2S concentration for each day during which samples are collected.

(2) Determine the 10-day average total sulfur-to-H2S ratio as the arithmetic average of the daily ratios calculated in Condition D.4(d)(28)(ii)(F)(1).

(3) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios based on the 10 individual daily ratios using Equation 14 of §60.107a.

$$AR = \quad Ratio_{avg} \pm 2.262 \times SDev$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

$Ratio_{Avg}$ = 10-day average total sulfur-to-H2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H2S concentration ratios used to develop the 10-day average total sulfur-to-H2S concentration ratio, unitless.

(G) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the total sulfur concentration using the measured total sulfur concentration measured for that day.

(H) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H2S ratio by the daily average H2S concentrations obtained using the monitor as required by paragraph Condition D.4(d)(28)(ii)(A) through (C) to estimate total sulfur concentrations.

(I) If the total sulfur-to-H2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average

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ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(iii) SO2 monitoring requirements. The owner or operator shall install, operate operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of SO2 from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of 60 §107a, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of 60 §107a, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of 60 §107a, and calculate the total sulfur content (as SO2) in the fuel gas using Equation 15 of 60 §107a.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG}$$

Where:

TS_{FG} = Total sulfur concentration, as SO2, in the fuel gas, ppmv.

C_{SO_2} = Concentration of SO2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

F_d = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHV_{FG} = Higher heating value of the fuel gas, MMBtu/scf.

(iv) Exemptions from sulfur monitoring requirements. Flares identified in Conditions D.4(d)(28)(iv)(A) through (D) are exempt from the requirements in Conditions D.4(d)(28)(i) through (iii). For each such flare, except as provided in Condition D.4(d)(28)(iv)(D), engineering calculations shall be used to calculate the SO2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(A) Flares that can only receive:

(1) Fuel gas streams that are inherently low in sulfur content as described in Conditions D.4(d)(26)(i) through (iv); and/or

(2) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H2S monitoring requirements as described in Condition D.4(d)(27).

(B) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(30).

(C) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from

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startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(30).

(D) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO2 emissions, regardless of whether or not the monitoring alternative in Condition D.4(d)(30) is selected for the secondary flare

(28) Flow monitoring for flares. The owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition D.4(d)(29)(i), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.

(A) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.

(B) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.

(C) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.

(D) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.

(E) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

(29) Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

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(30) Excess emissions. For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions D.4(d)(31)(i) and (ii). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(i) H2S concentration limits for flares.

(A) Each rolling 3-hour period during which the average concentration of H2S as measured by the H2S continuous monitoring system required under Condition D.4(d)(25) exceeds 162 ppmv.

(ii) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition D.4(d)(27)(iii)(C), each day during which the daily concentration of H2S exceeds 162 ppmv.

(31) The Permittee will sample and analyze propane products produced at the Point Breeze Propane Terminal for hydrogen sulfide content on a daily basis, at a minimum, and report to EPA any analysis showing a hydrogen sulfide content of 20 ppm or greater along with a description of the investigation conducted by the Permittee to determine the cause of the high sulfur condition and the investigation results [Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010].

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

The Permittee shall keep the following records:

(1) For all flares, continuous records of presence of pilot flame.

(2) For all flares record the following:

(i) Fuel types, fuel usage, and sulfur analysis of the fuel burned in the pilots on a daily basis. [SO_2 Operating Permit No. SO2-95-039]

(A) The sulfur content of the natural gas burnt in the flare pilot may be based on AP-42 factors for combustion sources.

(ii) Occurrences when the feed to the flare has exceeded the worst case analysis for SO_2 in the modeling demonstration including the date, time, duration and calculated emissions of the exceedance. [SO_2 Operating Permit No. SO2-95-039]

(iii) Date, time, duration, and calculated emissions of any exceedance per Section D.4(d)(3).

(3) SO_2 emission for each Acid Gas or Tail Gas Flaring incident. Calculations shall be in accordances with Section D.4(d)(6) [Consent Decree Order 05-CV-2866]

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(4) SO_2 emission for each Hydrocarbon Flaring Incident. SO_2 emission calculations for each Hydrocarbon flaring Incident shall use AG Flaring Incident formulas accordances with Section D.4(d)(6) [Consent Decree Order 05-CV-2866]

(5) Flare monitoring records. The owner or operator shall keep the records specified in § 63.655(i)(9). [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

Point Breeze South Yard South Flare (P-643)

The Permittee shall keep the following records:

(6) If the monitoring option in 40 CFR 60.107a(e)(2) is used, the Permittee shall keep records of the H_2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H_2S ratios, the calculated 10-day average total sulfur-to-H_2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H_2S ratio. [40 CFR 60.108a(c)(7), AMS Plan Approval 15271 dated 4/25/17]

(A) Root cause analysis

(B) Stack tests conducted on the flare.

(7) The date, time, and duration of each flaring incident, the cause of the flaring incident, the flow rate of gases being sent to the flare during each flaring incident, and the amount of each pollutant emitted during each incident. [AMS Plan Approval 15271 dated 4/25/17]

(8) Discharges greater than 500 lb SO_2 in any 24-hour period from the flare. Records shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds. The records shall include information as required in 40 CFR 60.108a(c)(6). [Consent Decree and 40 CFR 60.108a(c)(6), AMS Plan Approval 15271 dated 4/25/17]

(9) A copy of the Flare Management Plan.[40 CFR 60.108a(c)(1), AMS Plan Approval 15271 dated 4/25/17]

(f) Reporting Requirements

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

(1) Submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

(2) No later than 45 days following the end of an Acid Gas Flaring Incident occurring after Date of Entry, the Permittee shall submit to AMS and EPA a report with following: [Consent Decree Order 05-CV-2866]

(i) The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, the Permittee shall set forth the starting and ending dates and times of each release;

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(ii) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

(ii) The steps, if any, that the Permittee took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

(iii) A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;

(iv) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If the Permittee concludes that corrective action(s) is (are) required the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If the Permittee concludes that corrective action is not required, the report shall explain the basis for that conclusion;

(v) A statement that: (a) specifically identifies each of the grounds for stipulated penalties as specified in Paragraphs 56 and 57 of the Consent Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds;

(vi) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 53.d and 53.e of the Consent Decree shall be submitted; provided, however, that if the Permittee has not submitted a report or a series of reports containing the information required to be submitted within the 45-day time period set forth (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section XI of the Consent Decree shall apply, but the Permittee shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Philadelphia Energy Solution's failure to submit the report required under this Paragraph within the time frame set forth.

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(vii) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), the Permittee shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

(3) For each Tail Gas Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) [Consent Decree Order 05-CV-2866]

(4) For each Hydrocarbon Flaring Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) and shall: [Consent Decree Order 05-CV-2866]

(i) Submit the Hydrocarbon Flaring Incident reports as part of the Semi-Annual Progess Reports in accordance with Section D.1(e)(6).

(5) Reporting. The owner or operator shall comply with the reporting requirements specified in § 63.655(g)(11). [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

Point Breeze South Yard South Flare (P-643)

(6) The permittee shall report semiannually all rolling 3-hour periods during which the average concentration of H_2S in fuel gas exceeded 0.1 grains per dscf or all rolling 3-hour periods during which the average concentration of S02 in the stack exceeded 20 ppmv (dry basis, zero percent excess air). [AMS Plan Approval 15271 dated 4/25/17

(7) All notifications required in 40 CFR 60 Subpart Ja shall be submitted to the following address: [40 CFR60.103a(b)(3), AMS Plan Approval 15271 dated 4/25/17]

U.S. Environmental Protection Agency,
Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01),
Attention: Refinery Sector Lead,
109 T.W. Alexander Drive,
Research Triangle Park, NC 27711.

Electronic copies in lieu of hard copies may also be submitted to refinerynsps@epa.gov.

(8) The Permittee shall submit CEM report for the H_2S to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM. [AMS Plan Approval 15271 dated 4/25/17]

Point Breeze LPG Flare (CD-104)

(9) The investigation into propane product hydrogen sulfide content (as described in Condition D.4.(d)(32)) must be conducted immediately upon the Permittee's knowledge of the high sulfur condition in the propane products. All reports to EPA Region III must be sent to the address below [Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010]:

James W. Hagedorn

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Environmental Scientist
EPA Region III Office of Air Enforcement and Compliance Assistance
Mail Code 3AP20
1650 Arch Street
Philadelphia, Pennsylvania 19103

5. Group 04 - Loading Facilities and Control Equipment

Girard Point equipment numbered P-129, P-183 and P-637. Point Breeze equipment numbered P-638 and P-644.

(a) Emission Limitations

(1) Volatile Organic Compounds (VOC) emissions from the railcar butane loading/unloading operation (P-637) shall be less than 2.7 tons on rolling 12-month period [Plan Approval Exemption, AMS Installation Permit No. 14045, dated 8 April 2014]

(2) Fugitive VOC emissions from each crude rail car unloading facility (P-644) shall not exceed 500 lbs per rolling 12-month period [AMS Installation Permit No. 13020B, dated 20 March 2015]

(b) Work Practice Standards

(1) The Permittee shall utilize an LDAR program as described for Group 06, Section D.7.(a). [25 PA Code §129.58]

(2) The Permittee shall utilize a carbon adsorber at the benzene railcar unloading station to control benzene vapors from a manual vent on the nitrogen pressurization system. The adsorber should be operated by keeping the outlet below 20 ppm by volume benzene. In the event that the vent is activated, the outlet shall be monitored at the start and the end of the vent period with a portable chromatograph. If a portable chromatograph is not available, a drager tube may be used as a substitute. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(3) The Permittee shall only process butane/isobutane/n-butane/butylene streams at butane railcar loading/unloading stations [AMS Installation Permit No. 14045, dated 8 April 2014].

(4) The loading/unloading hoses and pipes associated with butane loading/unloading (P-637) shall be vented to the 1231/1232 flare and depressurized to 5-7 psig prior to disconnecting from the station [AMS Installation Permit No. 14045, dated 8 April 2014].

(5) All connections shall be equipped with fittings which shall be vapor tight and will automatically and immediately close upon disconnection so as to prevent organic material emissions [AMS Installation Permit No. 14045, dated 8 April 2014].

(6) No person shall cause, suffer. allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking

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Moved up [3]: The volatile organic compound emission from the operation of the LPG shall not exceed 24 tons per 12-month rolling period. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 2). Potential VOC emissions are less than 24 tons per year and are mostly fugitives. Compliance with this requirement is assured by the LDAR program.]¶

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Moved up [4]: <#>All bypass vent streams shall be equipped with flow indicators and recorders. As an alternative, the Permittee may secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4), 40 CFR 63.645(c)] ¶

Deleted: <#>The permittee shall not burn any fuel gas that contains H2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis in the LPG Flare. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit. [40 CFR §60.103a(h)] [AMS Installation Permit No. IP18-00260 & IP18-000263 Issued September 9, 2018]¶

valves, pumps. compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V Sec XIII]

(i) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the AMS;

(A) Leak definition for valves and pumps shall comply with Global Consent Decree issued as part of Civil Action No. 05-02866,

(ii) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.

(7) The butane railcar loading/unloading stations shall be installed, operated and maintained in accordance with both the manufacturer's specification and the specifications in the installation permit [AMS Installation Permit No.: 14045]

(8) All pumps handling organic materials having a vapor pressure of 1.5 pounds per square inch absolute or greater at ambient conditions shall have mechanical seals, or other components of equal or greater efficiency approved by AMS [AMS Installation Permit No. 13020B, dated 20 March 2015].

(9) The Permittee shall only unload using vapor tight connections and when vapor recovery system is in operation [AMS Installation Permit No. 13020B, dated 20 March 2015].

(10) The Permittee shall incorporate all components of fugitive source into the Refinery's current Leak Detection and Repair Program. The leak inspection program shall be in accordance with 25 PA Code 129.58, AMR V, A visual check for leaks shall be performed at the beginning of each transfer, and PES shall continue to visually monitor for leaks during the transfer [AMS Installation Permit No. 13020B, dated 20 March 2015].

(c) Testing Requirements

[25 PA Code §139]

(1) For determining the magnitude of VOC leaks, use EPA Method 21 as described for Group 06, Section D.7.(b).

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) For equipment leaks, utilize the same monitoring techniques and frequencies as used for Group 06, Section D.7.(c).

(2) The Permittee shall monitor and keep records of any emissions that bypass any control devices associated with the benzene unloading operation. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(3) Monthly product unloaded from benzene rail cars.

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(4) For Butane Railcar Loading/Unloading (P-637), the Permittee shall monitor and keep records of VOC emissions on monthly and rolling 12-month basis. VOC emission shall be based on number of loading/unloading operations per day, number of venting to atmosphere, and the following emission factors or other AMS approved factors [AMS Installation Permit No. 14045, dated 8 April 2014].

(i) Stinger: 0.008 lb/hose (all loading/unloading events)

(ii) Vapor hose: 0.1 lb/hose (only when opening hose to atmosphere)

(iii) Product hose: 0.2 lb/hose (only when opening hose to atmosphere)

(5) For Butane Railcar Loading/Unloading (P-637), The fugitive emission shall be monitored and recorded on quarterly basis in accordance with the LDAR program for all valves, flanges, and connectors in VOC service [AMS Installation Permit No. 14045, dated 8 April 2014].

(6) The Permittee shall monitor and record the following for crude oil transfer operations in a format that is acceptable to AMS [AMS Installation Permit No. 13020B, dated 20 March 2015]:

(i) On monthly basis monitor and record crude throughput at the 137 Crude Unit and the 210 Crude Unit.

(ii) Calculate monthly fugitive VOC emission from all valves, pumps compressors, safety pressure relief devices or other process equipment components to demonstrate compliance with Condition 2.

(A) Verification shall be based on EPA 1995 Protocol for Equipment Leak Emission Estimates, Table 2-12, or subsequent AMS approved factors.

(iii) On a monthly basis, record the following:

(A) The true vapor pressure and Reid Vapor Pressure of the crude oil loaded.

(B) Any daily malfunctions that occur during the transfer operation.

(C) Quantity of crude oil loaded during malfunctions.

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall retain a schematic diagram of the affected vent stream, collection system, fuel system, combustion devices and any bypass system that is associated with the LPG on site. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4)]

(2) Maintain a monitoring log similar to that shown for Group 06, Section D.7.(c)(5).

(3) Records of any emissions that bypass any control devices associated with the benzene unloading operation. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(4) Monthly product unloaded from benzene railcars.

Moved up [2]: The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]¶
(i) The Permittee shall install, operate and maintain each H2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H2S.¶
The Permittee shall conduct performance evaluations for each H2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.¶
The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.¶
Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in the flares.¶
The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph§§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument required in paragraph (e)(1) is used to demonstrate compliance with the H2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).¶
The owner or operator of modified flare that meets the following all three criteria shall comply with the requirements of Condition D.5(d)(4)(i)-(v) no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans

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Deleted: $TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG}$¶
¶
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(5) For each Group 2 transfer rack, the Permittee shall maintain records in 40 CFR 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack. [40 CFR 63.126(c)]

(i) The Permittee of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in 40 CFR 63.130(f)(1) – (3) in a readily accessible location on site: [40 CFR 63.130(f)]

(A) An analysis demonstrating the design and actual annual throughput of the transfer rack; [40 CFR 63.130(f)(1)]

(B) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations. [40 CFR 63.130(f)(2)]

(C) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack. [40 CFR 63.130(f)(3)]

(1) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressure less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated. [40 CFR 63.130(f)(3)(i)]

(2) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred. [40 CFR 63.130(f)(3)(ii)]

(f) Reporting Requirements

(1) Submit quarterly reports as described for Group 06, Section D.7.(d).

(2) The Permittee shall submit semi-annual reports for the Crude Loading Facility (P-644) as required by the Global Consent Decree issued as part of Civil Action No. 05-02866 [AMS Installation Permit No. 13020B, dated 20 March 2015].

6. Group 05 – Sulfur recovery units

Point Breeze equipment numbered P659, P660, CD108 (Amine Tail Gas Scrubber), CD109 (Tail Gas Incinerator – TGU-1), and CD114 (Tail Gas Incinerator – TGU-2)

(a) Emission Limitations

(1) Emissions of SO_2 shall not exceed a concentration of 250 ppm SO_2 by volume on a dry basis at zero percent excess air on a rolling 12-hour average; or operate the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis), except during startup or shutdown conditions. [40 CFR § 60.104(a)(2)(i), 40

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CFR § 63.1568(a)(2), Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91 for P659, AMS Plan Approval 01162 dated 10/8/02, AMS Plan Approval 04322, dated 2/28/06 and AMS Plan Approval 06144, dated 1/29/08]

(2) During periods of startup and shutdown, shall comply with 63.1568(a)(4)(i) by meeting emission limitations in 63.1568(a)(1)(i); comply with 63.1568(a)(4)(ii) by sending any shutdown purge gases to the flare; or comply with 63.1568(4)(iii) by sending any startup or shutdown purge gases to the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis).

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(3) The combined SO_2 emission rate from P659 and P660 shall not exceed 31.72 lbs/hr. [SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA Code §129.13, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(4) When operating only one Claus unit (P659 or P660), the SO_2 emission rate from Sulfur Recovery units, shall not exceed 15.36 lbs/hr or 67 tons per rolling 12-month period. [Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91, AMS Plan Approval 01162 dated 10/8/02]

(b) Work Practice

(1) The 867 SRU combined (North and South) sulfur production rate shall be limited to 80 Long ton per day averaged over a rolling 12-month period [Plan Approval 06144, issued 1/29/08].

(c) Testing Requirements

[25 PA Code §139]

(1) The performance evaluations for the SO_2 monitor shall use Performance Specification 2. Methods 6C and 3A, in accordance with 40 CFR 60.106(f)(1) and 40 CFR 60.106(f)(3) respectively, shall be used for conducting the relative accuracy evaluations. [40 CFR 60.105(a)(5)(ii), 40 CFR 60.106(f)(1) and 40 CFR 60.106(f)(3)]

(2) The Permittee shall conduct CEMS performance evaluations at such times as may be required by the EPA Administrator and AMS under section 114 of the Act. The frequency shall be in accordance with 25 Pa Code §139 and the "Source Testing Manual." [40 CFR 60.13(c), 25 Pa Code §139]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall demonstrate compliance with the SO2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 40 CFR Part 60, Subpart J and Appendix B, 40 CFR Part 63, Subpart UUU and 25 PA Code Chapter 139. .[Plan Approval 04322, dated 2/28/06 and Plan Approval 06144, dated 1/29/08]

(2) Continuously monitor and record the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include

an oxygen monitor for correcting the data for excess air. [40 CFR 60.105(a)(5)]

(i) The span values for CD-109 (TGU-1) monitor is 500 ppm SO_2 and 12.5 percent O_2. [Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91 for P659]

(ii) The span values for CD-110 (TGU-2) monitor is 500 ppm SO2 and 25 percent O2. [40 CFR 60.105(a)(5), Plan Approval 06144 dated 1/29/08].

(3) The Permittee shall record the SRU sulfur recovery rate daily for each unit and averaged over a rolling 12-month period on a monthly basis for the combined units [SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(4) SO2 Emission Calculations for the Tail Gas Incidents. [Consent Decree Order 05-CV-2866]

(i) For Tail Gas Incidents, the Permittee shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as those set forth in Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including unscheduled shutdowns of a Claus Sulfur Recovery Plant. Notwithstanding the foregoing, stipulated penalties shall not apply to emissions resulting from the scheduled Start-up or Shutdown of a Sulfur Recovery Plant.

(ii) The quantity of SO_2 emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event:

(A) If Tail Gas is combusted in a flare, the SO_2 emissions are calculated using the methods outlined in Section D.4.(c)(6); or

(B) If Tail Gas exceeding the 250 ppmvd (NSPS J limit) is emitted from a monitored SRP incinerator, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [FR_{Inc.}]_i [Conc.\ SO_2 - 250]_i [0.169 \times 10^{-6}] [(20.9 - \%\ O_2)/20.9]_i$$

where:

ER_{TGI} = Emissions in excess of the 250 ppm limit from the Tail Gas Unit at the SRP incinerator, pounds of SO_2 over a 24-hour period

TD_{TGI} = Hours when the incinerator CEM was exceeding 250 ppmvd SO_2 on a rolling twelve hour average, corrected to 0% O2, in each 24-hour period of the Incident

i = Each hour within TD_{TGI}

$FR_{Inc.}$ = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident

Conc. SO_2 = The average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O_2, for each hour of the Incident

% O_2 = O_2 concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident

0.169×10^{-6} = [lb mole of SO_2 / 379 SO_2] [64 lbs SO_2 / lb mole SO_2] [1×10^{-6}]

Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then the Permittee shall estimate emissions based on best engineering judgment.

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Record periods of excess emissions when all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under Section D.6(c)(2) exceeds 250 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(4)(i)]

NOTE: All averages shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 12-hour average shall be determined as the arithmetic average of 12 contiguous 1-hour averages.

(2) Source shall be periodically observed for process and log data, strip chart, or electronic monitoring media. [SO2 Operating Permit No. SO2-95-039]

(3) The Permittee shall keep continuous emission records. [SO2 Operating Permit No. SO2-95-039, 25 PA Code §139.101(5)]

(4) The Permittee shall record the SRU sulfur recovery rate daily for each unit and averaged over a rolling 12-month period on a monthly basis for the combined units [SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(5) The Permittee shall record SRU rolling 12-month SO2 emissions on a monthly basis to ensure compliance with Section D.6(a)(3) & (4). Emissions may be allocated based on total SRU emission and North SRU and South SRU sulfur recovery rate.

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(6) SO2 emission for each Tail Gas Flaring incident. Calculations shall be in accordances with Section D.6(d)(4) [Consent Decree Order 05-CV-2866]

(f) Reporting Requirements

(1) Report periods of excess emissions when all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under Section D.6(c)(2) exceeds 250 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(4)(i)]

(2) Submit excess emissions and monitoring systems performance report and-or summary report form to the AMS semiannually. More frequent reporting may be required by the AMS. All reports shall be postmarked by the 30th day following the end of each six-month period. [40 CFR 60.7(c)]

7. Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV, and 40 CFR 63 Subpart CC

[40 CFR 60.480, 60.590 & 63.648; PA129.58; AMR V Section XIII A. and E., 40 CFR 61 Subpart J]

The following Summary Table is a summary of leak detection and repair regulatory applicability for individual components within each process unit of the refinery:

Summary Table

Regulatory Level:	Federal				Local	
Program Descriptor:	**40CFR60 Sub VV Applicbty & Method**	**40CFR60 Sub GGG Applicbty (VV Mthd)**	**40CFR63 Sub CC (Electing 40CFR60 Sub VV Method)**	**40CFR63 Sub H Applicbty & Method**	**PA 129.58 VOC**	**PA 129.71 SOCMI VOC**
Applicability & Source Definition Ref.:	**60.480(a)**	**60.590(a)**	**63.640(a) 63.648(a)**	**63.100 63.160(a)**	**121.1 129.58**	**121.1 129.71**
Source Definition Summary:	VOC comp's. in SOCMI units per 60.489	compressor & group of all equip. within a process unit	all OHAP components in unit unless noted for VOC coverage	all OHAP components in facility CMPU's unless noted for VOC coverage	VOC comp's. in the unit not monitored per NSPS or NESHAP or Pa SOCMI	VOC comp's. in SOCMI units per 60.489 not MON, per NSPS, NESHAP or Pa VOC
POINT BREEZE PROCESSING AREA:						
210a/b Crude, A/C Vacuum			x (use MACT)		x	
864 Unifiner			x (use MACT)		x	
865 Distillate HDS		x			x	
866 Heavy Oil HDS			x (use MACT)		x	
868 FCC		~~x~~	x (use MACT)		x	
869 Alkylation HPN & DIB		~~x~~	x (use MACT)		x	
860 Unifiner / Reformer			x (use MACT)		x	
862 Light Ends			x (use MACT)		x	
867 SRU,with SWS, Claus, MDEA/DEA, Incin.			x (use MACT)		x	
867 (includes Bio Plant and PB WWTP)			x		x	
870(LSG)		x (use GGGa)	x		x	
859 ULSD		x(GGGa)			x	
~~Inter-Refy. Pipeline Eqpt. (Mar. Hook)~~		~~x, for 40/61/J~~				
Girard Point Wharf including Marine Vapor Recovery System		x (use VV)			x	
Fuel Gas System (GP & PB)		x (use VV)			x	
GIRARD POINT PROCESSING AREA:						
137 Crude/Vacuum			x (use VV)		x	

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Regulatory Level:	Federal				Local	
Program Descriptor:	40CFR60 Sub VV Applicbty & Method	40CFR60 Sub GGG Applicbty (VV Mthd)	40CFR63 Sub CC (Electing 40CFR60 Sub VV Method)	40CFR63 Sub H Applicbty & Method	PA 129.58 VOC	PA 129.71 SOCMI VOC
Applicability & Source Definition Ref.:	60.480(a)	60.590(a)	63.640(a) 63.648(a)	63.100 63.160(a)	121.1 129.58	121.1 129.71
Source Definition Summary:	VOC comp's. in SOCMI units per 60.489	compressor & group of all equip. within a process unit	all OHAP components in unit unless noted for VOC coverage	all OHAP components in facility CMPU's unless noted for VOC coverage	VOC comp's. in the unit not monitored per NSPS or NESHAP or Pa SOCMI	VOC comp's. in SOCMI units per 60.489 not MON. per NSPS, NESHAP or Pa VOC
1332 Hydrobon			x (use MACT)		x	
1332 Reformer			x (use MACT)		x	
231 Distillate HDS			x		x	
1232 FCC			x (use MACT)		x	x, use MACT
1232 CO Boiler			x (use MACT)		x	
431 C4 & C3 Distillation			x		x	x, use MACT
C3/C4 Compressor @ 1332		x (use VV)			x	
331 Isomerization		x (use VV)			x	
					x	
433 Alkylation (HF)		x	x (use MACT)		x	
1732 Benzene Recovery (including associated tankage)	x, use HON			x		x, use HON
1733 Cumene Production (including associated tankage)	x, use HON			x		x, use HON
# 3 Boilerhouse					x	
8832 (includes GP Waste Water Treatment Plant #2 and #4 Separator)			x (use MACT)			
8733 Sour Water Stripper					x	
531 (WGS)			x (use MACT)		x	
532 Amine Absorber			x (use MACT)			
Butane Line (between PB & GP)		x (use VV)			x	
North Tank Field (NTF)			x		x	
North Yard Oil Moveement (NYOM) - #3 Farm (non IRPL)			x		x	
NYOM Propane Terminal (subarea of NYOM)		x			x	
NYOM Inter Refinery Pipeline (subarea of NYOM)		x			x	
South Tank Field (except HON tanks and unloading)			x		x	
HON Tanks and unloading (subarea of STF)				x		x
South Yard Oil Movement (SYOM) - #1, #4, Farms subareas			x		x	
SYOM #5 Farm (subarea of SYOM)					x	
SYOM #2 Farm (subarea of SYOM)			x		x	
SYOM #2 Farm HON (subarea of SYOM)				x		x
SYOM Inter Refinery Pipeline (subarea of SYOM)		x			x	
South Yard Butane Rail Terminal (SYBRT)					x	
Crude Loading Facility					x	

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(a) Work Practice Standards

(1) PUMPS IN LIGHT LIQUID SERVICE.

(i) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-2(d), 40 CFR 60.482-2(e), and 40 CFR 60.482-2(f). [40 CFR 60.482-2(a)(1)]

(ii) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. [40 CFR 60.482-2(a)(2)]

(iii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-2(b)(1)]

(A) If there are indications of liquids dripping from the pump seal, a leak is detected.

(B) If there are indications of liquids dripping from the pump seal, the Permittee shall follow the procedure specified below in Section D.7.(a)(1)(v)(A) & (B). This requirement does not apply to a pump that was monitored after a previous weekly inspection if the instrument reading for that monitoring event was less than 10,000 ppm and the pump was not repaired since that monitoring event.

(1) Monitor the pump within 5 days as specified in 40 CFR §60.485(b). If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak shall be repaired using the procedures as follows:

(i) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described below, where practicable.

- Tightening the packing gland nuts;
- Ensuring that the seal flush is operating at design pressure and temperature.

(2) Designate the visual indications of liquids dripping as a leak, and repair the leak within 15 days of detection by eliminating the visual indications of liquids dripping.

(iv) LEAKING PUMPS.

(A) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-2(c)(1)]

(B) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(c)(2)]

(v) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 60.482-2(a), Provided the following requirements are met:

(A) Each dual mechanical seal system is-

(1) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 60.482-2(d)(1)(i)]

(2) Equipment with a barrier fluid degassing reservoir that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or [40 CFR 60.482-2(d)(1)(ii)]

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-2(d)(1)(iii)]

(B) The barrier fluid system is in heavy liquid service or is not in VOC service. [40 CFR 60.482-2(d)(2)]

(C) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(3)]

(D) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals. [40 CFR 60.482-2(d)(4)]

(E) Each sensor as described in 40 CFR 60.482-2(d)(3) is checked daily or is equipped with an audible alarm, and [40 CFR 60.482-2(d)(5)(i)]

(F) The Permittee determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(5)(ii)]

(G) LIQUID LEAKS FROM PUMPS IN LIGHT LIQUID SERVICE.

(1) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in 40 CFR 60.482-2(d)(5)(ii), a leak is detected. [40 CFR 60.482-2(d)(6)(i)]

(2) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-2(d)(6)(ii)]

(3) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(d)(6)(iii)]

(vi) Any pump that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-2(a), 40 CFR 60.482-2(c), and 40 CFR 60.482-2(d) if the pump:

(A) Has no externally actuated shaft penetrating the pump housing [40 CFR 60.482-2(e)(1)],

(B) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in 40 CFR 60.485(c), and. [40 CFR 60.482-2(e)(2)]

(C) Is tested for compliance with 40 CFR 60.482-2(e)(2) initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.482-2(e)(3)]

(vii) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from 40 CFR 60.482-2(a) through 40 CFR 60.482-2(e). [40 CFR 60.482-2(f)]

(2) COMPRESSORS. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-3 (h) and 40 CFR 60.482-3(i). [40 CFR 60.482-3(a)]

(i) Each compressor seal system as required in 40 CFR 60.482-3(a) shall be:

(A) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or [40 CFR 60.482-3(b)(1)]

(B) Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or [40 CFR 60.482-3(b)(2)]

(C) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-3(b)(3)]

(ii) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service. [40 CFR 60.482-3(c)]

(iii) Each barrier fluid system as described in 40 CFR 60.482-3(a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. [40 CFR 60.482-3(d)]

(iv) Each sensor as required in 40 CFR 60.482-3(d) shall be checked daily or shall be equipped with an audible alarm. [40 CFR 60.482-3(e)(1)]

(v) The Permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-3(e)(2)]

(vi) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under 40 CFR 60.482-3(e)(2), a leak is detected. [40 CFR 60.482-3(f)]

(vii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-3(g)]

(viii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-3(g)(2)]

(ix) A compressor is exempt from the requirements of 40 CFR 60.482-3(a) and 40 CFR 60.482-3(b), if it is equipped with a closed vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of 40 CFR 60.482-10, except as provided in 40 CFR 60.482-3(i). [40 CFR 60.482-3(h)]

(x) Any compressor that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-3(a)-(h) if the compressor:

(A) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in 40 CFR 60.485(c); and [40 CFR 60.482-3(i)(1)]

(B) Is tested for compliance with 40 CFR 60.482-3(i)(1) initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.482-3(i)(2)]

(3) PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE.

(i) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-5(a) and 40 CFR 63.648(j)(1)]

(ii) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-4(b)(1) and 40 CFR 63.648(j)(2)(i)].

(iii) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(b)(2)]

(iv) Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of 40 CFR 60.482-4(a) and 40 CFR 60.482-4(b). [40 CFR 60.482-4(c)]

(4) SAMPLING CONNECTION SYSTEMS.

(i) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in 40 CFR 60.482-1(c). [40 CFR 60.482-5(a)]

(ii) Each closed-purge, closed-loop, or closed-vent as required in 40 CFR 60.482-5(a) shall comply with the requirements specified in 40 CFR 60.482-5(b)(1) through 40 CFR 60.482-5(b)(4). [40 CFR 60.482-5(b)]

(A) Return the purged process fluid directly to the process line; or [40 CFR 60.482-5(b)(4)]

(B) Collect and recycle the purged process fluid to a process; or [40 CFR 60.482-5(b)(4)]

(C) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10. [40 CFR 60.482-5(b)(4)]

(iii) In situ sampling systems and sampling systems without purges are exempt from the requirements of 40 CFR 60.482-5(a) and 40 CFR 60.482-5(b). [40 CFR 60.482-5(c)]

(5) OPEN-ENDED VALVES OR LINES.

(i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c). [40 CFR 60.482-6(a)(1)]

(ii) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. [40 CFR 60.482-6(a)(2)]

(iii) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [40 CFR 60.482-6(b)]

(iv) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with 40 CFR 60.482-6(a) at all other times. [40 CFR 60.482-6(c)]

(6) VALVES IN GAS-VAPOR SERVICE AND LIGHT LIQUID SERVICE. Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with 40 CFR 60.482-7(b) through 40 CFR 60.482-7(e), except as provided in 40 CFR 60.482-7(f), (g), and (h), 40 CFR 60.483-1,2, and 40 CFR 60.482-1(c). [40 CFR 60.482-7(a)]

(i) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-7(b)]

(ii) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. [40 CFR 60.482-7(c)(1)]

(iii) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [40 CFR 60.482-7(c)(2)]

(iv) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-7(d)(1)]

(v) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-7(d)(2)]

(vi) First attempts at repair include, but are not limited to, the following best practices where practicable: tightening of bonnet bolts; replacement of bonnet bolts; tightening of packing gland nuts; and injection of lubricant into lubricated packing. [40 CFR 60.482-7(e)]

(vii) Any valve that is designated, as described in 40 CFR 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-7(a) if the valve:

(A) Has no external actuating mechanism in contact with the process fluid, [40 CFR 60.482-7(f)(1)]

(B) Is operated with emissions less than 500 ppm above background as determined by the method specified in 40 CFR 60.485(c), and [40 CFR 60.482-7(f)(2)]

(C) Is tested for compliance with 40 CFR 60.482-7(f)(2) initially upon designation, annually, and at other times requested by EPA. [40 CFR 60.482-7(f)(3)]

(viii) Any valve that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if the Permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-7(a), and the Permittee adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [40 CFR 60.482-7(g)]

(ix) Any valve that is designated, as described in 40 CFR 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if:

(A) The Permittee of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface. [40 CFR 60.482-7(h)(1)]

(B) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the Permittee designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and [40 CFR 60.482-7(h)(2)]

(C) The Permittee of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 60.482-7(h)(3)]

(7) PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS.

(i) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. [40 CFR 60.482-8(a)]

(ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-8(b)]

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-8(c)(1)]

(iv) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-8(c)(2)]

(v) First attempts at repair include, but are not limited to, the best practices described under 40 CFR 60.482-7(e). [40 CFR 60.482-8(d)]

(8) CLOSED VENT SYSTEMS AND CONTROL DEVICES.

(i) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater or to an exit concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 60.482-10(b)]

(ii) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C. [40 CFR 60.482-10(c)]

(iii) Flares shall comply with the requirements of 40 CFR 60.18. [40 CFR 60.482-10(d)]

(iv) The Permittee of control devices shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.482-10(e)]

(v) Except as provided in 40 CFR 60.482-10(i) through 40 CFR 60.482-10(k), each closed vent system shall be inspected according to the procedures and schedule specified in 40 CFR 60.482-10(f)(1) and 40 CFR 60.482-10(f)(2). [40 CFR 60.482-10(f)]

(A) If the vapor collection system or closed vent system is constructed of hard-piping, the Permittee shall conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and conduct annual visual inspections for visible, audible, or olfactory indications of leaks. [40 CFR 60.482-10(f)(1)]

(B) If the vapor collection system or closed vent system is constructed of ductwork, the Permittee shall conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and conduct annual inspections according to the procedures in 40 CFR 60.485(b). [40 CFR 60.482-10(f)(2)]

(vi) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in 40 CFR 60.482-10(h). [40 CFR 60.482-10(g)]

(A) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 60.482-10(g)(1)]

(B) Repair shall be completed no later than 15 calendar days after the leak is detected. [40 CFR 60.482-10(g)(2)]

(vii) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the Permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [40 CFR 60.482-10(h)]

(viii) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2). [40 CFR 60.482-10(i)]

(ix) Any parts of the closed vent system that are designated as described in 40 CFR 60.482-10(l)(1), as unsafe to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2) if they comply with the requirements specified in 40 CFR 60.482-10(j)(1) and 40 CFR 60.482-10 (j)(2): [40 CFR 60.482-10(j)]

(A) The Permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with 40 CFR 60.482-10(f)(1)(i) or 40 CFR 60.482-10(f)(2); and [40 CFR 60.482-10(j)(1)]

(B) The Permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times. [40 CFR 60.482-10(j)(2)]

(x) Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(2), as difficult to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2) if they comply with the requirements specified in of 40 CFR 60.482-10(k)(1) through 40 CFR 60.482-10(k)(3): [40 CFR 60.482-10(k)]

(A) The Permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and [40 CFR 60.482-10(k)(1)]

(B) The process unit within which the closed vent system is located becomes an affected facility through 40 CFR 60.14 or 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and [40 CFR 60.482-10(k)(2)]

(C) The Permittee has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum. [40 CFR 60.482-10(k)(3)]

(xi) Closed vent systems and control devices shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)]

(9) ALTERNATIVE STANDARDS FOR VALVES

(i) The Permittee may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent. [40 CFR 60.483-1(a)]

(ii) The following requirements shall be met if the Permittee wishes to comply with an allowable percentage of valves leaking:

(A) The Permittee must notify the EPA Administrator and AMS that the Permittee has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard. [40 CFR 60.483-1(b)(1)]

(B) A performance test as specified in 40 CFR 60.483-1(c) shall be conducted initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.483-1(b)(2)]

(C) If a valve leak is detected, it shall be repaired in accordance with 40 CFR 60.482-7(d) and 40 CFR 60.482-7(e). [40 CFR 60.483-1(b)(3)]

(iii) Performance tests shall be conducted in the following manner:

(A) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in 40 CFR 60.485(b). [40 CFR 60.483-1(c)(1)]

(B) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.483-1(c)(2)]

(C) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility. [40 CFR 60.483-1(c)(3)]

(iv) The Permittee who elects to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent. [40 CFR 60.483-1(d)]

(v) ALTERNATIVE STANDARDS FOR VALVES-SKIP PERIOD LEAK DETECTION AND REPAIR.

(A)(1) The Permittee may elect to comply with one of the alternative work practices specified in 40 CFR 60.483-2(b)(2) and 40 CFR 60.483-2(b)(3). [40 CFR 60.483-2(a)]

(2) The Permittee must notify EPA before implementing one of the alternative work practices, as specified in 40 CFR 60.487(d). [40 CFR 60.483-2(a)(2)]

(B)(1) The Permittee shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in 40 CFR 60.482-7. [40 CFR 60.483-2(b)(1)]

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, a Permittee may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)(2)]

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)(3)]

(4) If the percent of valves leaking is greater than 2.0, the Permittee shall comply with the requirements as described in 40 CFR 60.482-7 but can again elect to use 40 CFR 60.483-2. [40 CFR 60.483-2(b)(4)]

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of 40 CFR 60.483-2. [40 CFR 60.483-2(b)(5)]

(6) The Permittee must keep a record of the percent of valves found leaking during each leak detection period. [40 CFR 60.483-2(b)(6)]

(10) DELAY OF REPAIR.

(i) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit. [40 CFR 60.482-9(a)]

(ii) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service. [40 CFR 60.482-9(b)]

Delay of repair for valves will be allowed if:

(A) The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and [40 CFR 60.482-9(c)(1)]

(B) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10. [40 CFR 60.482-9(c)(2)]

(iii) Delay of repair for pumps will be allowed if:

(A) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and [40 CFR 60.482-9(d)(1)]

(B) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected. [40 CFR 60.482-9(d)(2)]

(iv) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]

(11) The Permittee shall use the definitions provided in the Federal New Source Performance Standards (NSPS) to designate streams subject to monitoring in order to comply with 25 PA Code §129.58. The testing and monitoring requirements specified in 25 PA Code §129.58 are applied to sources that handle gas or “light” liquids (meeting the definition of 40 CFR 60.485(e)). Heavy liquid shall be monitored based on visual, audible, or olfactory means of detection. A source is considered to be in VOC service if it contacts or contains a gas or liquid that has at least 10% VOC by weight. [AMS Letter dated May 30, 2000, 25 PA Code §129.58(g)]

(12) The Permittee is required to comply with AMR V. Sec. XIII that prohibits the emissions of VOC in a liquid state at the point(s) of discharge into the atmosphere. [AMS Letter dated May 30, 2000 and AMR V. Sec. XIII.A.2.]

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee shall determine compliance with the standards in 40 CFR 60.482, 40 CFR 60.483, and 40 CFR 60.484 as follows: [40 CFR 60.485(b)]

(i) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: [40 CFR 60.485(b)(1)]

(A) Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 60.485(b)(1)(i)]

(B) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)(1)(ii)]

(2) The Permittee shall determine compliance with the no detectable emission standards in 40 CFR 60.482-2(e), 40 CFR 60.482-3i, 40 CFR 60.482-4, 40 CFR 60.482-7(f), and 40 CFR 60.482-10(e) as follows: [40 CFR 60.485(c)]

(i) The requirements of 40 CFR 60.485(b) shall apply. [40 CF 60.485(c)(1)]

(ii) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)(2)]

(3) The Permittee shall test each piece of equipment unless he demonstrates that a process unit is not in VOC series, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: [40 CFR 60.485(d)]

(i) Procedures that conform to the general methods in ASTM E-260, E-168, E-169 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment. [40 CFR 60.485(d)(1)]

(ii) Organic compounds that are considered by the EPA Administrator and AMS to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid. [40 CFR 60.485(d)(2)]

(iii) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the EPA Administrator and AMS disagrees with the judgment, 40 CFR 60.486(d)(1) and (2) shall be used to resolve the disagreement. [40 CFR 60.485(d)(3)]

(4) The Permittee shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(i) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20^{o} C. Standard reference texts or ASTM D-2879 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the vapor pressures. [40 CFR 60.485(e)(1)]

(ii) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20^{o} C is equal to or greater than 20 percent by weight. [40 CFR 60.485(e)(2)]

(iii) The fluid is a liquid at operating conditions. [40 CFR 60.485(e)(3)]

(5) Samples used in conjunction with 40 CFR 60.486(d), (e), and (g) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)]

(6) The Permittee shall determine compliance with the standards of flares as follows: [40 CFR 60.485(g)]

(i) Method 22 shall be used to determine visible emissions. [40 CFR 60.485(g)(1)]

(ii) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare. [40 CFR 60.485(g)(2)]

(iii) The maximum permitted velocity (V_{max}) for air-assisted flares shall be computed using the following equation: [40 CFR 60.485(g)(3)]

$V_{max} = 8.706+0.7084H_T$

Where:

V_{max} = maximum permitted velocity, m/sec

H_T = net heating value of the gas being combusted, MJ/scm.

(iv) The net heating value (H_T) of the gas being combusted in a flare shall be computed as follows: [40 CFR 60.485(g)(4)]

$H_T = K C_i H_i$

Where:

K = conversion constant, 1.740*10^7 [(g-mole)(MJ)]/[(ppm)(scm)(kcal)]

C_i = concentration of sample component “I”, ppm.

H_i = net heat of combustion of sample component “I” at 25^o C and 760 mm HG, kcal/g-mole

(v) Method 18 and ASTM D 2504-67 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the concentration of sample component “i.” [40 CFR 60.485(g)(5)]

(vi) ASTM D 2382-76 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the net heat of combustion of component “i” if published values are not available or cannot be calculated. [40 CFR 60.485(g)(6)]

(vii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used. [40 CFR 60.485(g)(7)]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of more than one affected facility may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility. [40 CFR 60.486(a)(2)]

(2) When each leak is detected, as specified in 40 CFR 60.482-2, 40 CFR 60-482-3, 40 CFR 60.482-7, 40 CFR 60.482-8, and 40 CFR 60.483-2, the following requirements apply: [40 CFR 60.486(b)]

(i) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. [40 CFR 60.486(b)(1)]

(ii) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months. [40 CFR 60.486(b)(2)]

(iii) The identification on equipment except on a valve, may be removed after it has been repaired. [40 CFR 60.486(b)(3)]

(3) When each leak is detected as specified in 40 CFR 60.482-2, 40 CFR 60-482-3, 40 CFR 60.482-7, 40 CFR 60.482-8, and 40 CFR 60.483-2, the following information shall be recorded in a log and shall be kept for 5 years in a readily accessible location: [40 CFR 60.486(c)]

(i) The instrument and operator identification numbers and the equipment identification number. [40 CFR 60.486(c)(1)]

(ii) The date the leak was detected and the dates of each attempt to repair the leak. [40 CFR 60.486(c)(2)]

(iii) Repair methods applied in each attempt to repair the leak. [40 CFR 60.486(c)(3)]

(iv) "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm. [40 CFR 60.486(c)(4)]

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [40 CFR 60.486(c)(5)]

(vi) The signature of the individual whose decision it was that repair could not be effected without a process shutdown. [40 CFR 60.486(c)(6)]

(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days. [40 CFR 60.486(c)(7)]

(viii) Dates of process unit shutdown that occur while the equipment is unrepaired. [40 CFR 60.486(c)(8)]

(ix) The date of successful repair of the leak. [40 CFR 60.486(c)(9)]

(4) The following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR 60.482-10 shall be recorded and kept in a readily accessible location: [40 CFR 60.486(d)]

(i) Detailed schematics, design specifications, and piping and instrumentation diagrams. [40 CFR 60.486(d)(1)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.486(d)(2)]

(iii) A description of the parameter or parameters monitored, as required in 40 CFR 60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 60.486(d)(3)]

(iv) Periods when the closed vent systems and control devices required in 40 CFR 60.482-2, 40 CFR 60.482-3, 40 CFR 60.482-2, 40 CFR 60.482-5 are

not operated as designed, including periods when a flare pilot light does not have a flame. [40 CFR 60.486(d)(4)]

(v) Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR 60.482-2, 40 CFR 60.482-3, 40 CFR 60.482-2, 40 CFR 60.482-5. [40 CFR 60.486(d)(5)]

(vi) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. [40 CFR 60.482-10(l)(1)]

(vii) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. [40 CFR 60.482-10(l)(2)]

(viii) For each inspection during which a leak is detected, a record of the information specified in 40 CFR 60.486(c) [40 CFR 60.482-10(l)(3)].

(ix) For each inspection conducted in accordance with 40 CFR 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)(4)]

(x) For each visual inspection during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)(5)]

(5) The following information pertaining to all equipment subject to the requirements in 40 CFR 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(e)]

(i) A list of identification numbers for subject equipment. [40 CFR 60.486(e)(1)]

(ii) A list of identification numbers for equipment that are designated for no detectable emissions. [40 CFR 60.486(e)(2)(i)]

(iii) The designation of equipment as subject to the requirements 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), and 40 CFR 60.482-7(f) shall be signed by the Permittee. [40 CFR 60.486(e)(2)(ii)]

(iv) A list of equipment identification numbers for pressure relief devices in gas/vapor service required to comply with 40 CFR 60.482-4. [40 CFR 60.486(e)(3)]

(v) The dates of each compliance test as required in 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), 40 CFR 60.482-4, and 40 CFR 60.482-7(f). [40 CFR 60.486(e)(4)(i)]

(vi) The background level measured during each compliance test. [40 CFR 60.486(e)(4)(ii)]

(vii) The maximum instrument reading measured at the equipment during each compliance test. [40 CFR 60.486(e)(4)(iii)]

(viii) A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)(5)]

(ix) The following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and 40 CFR 60.482-7(h) shall be

recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(f)]

(x) A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the valve is unsafe-to-monitor, and the plan for monitoring each valve. [40 CFR 60.486(f)(1)]

(xi) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each value. [40 CFR 60.486(f)(2)]

(6) The following information shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(h)]

(i) Design criterion required in 40 CFR 60.482-2(d)(5) and 40 CFR 60.482-3(e)(2) and explanation of the design criterion; and [40 CFR 60.486(h)(1)]

(ii) Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)(2)]

(7) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in 40 CFR 60.480(d): [40 CFR 60.486(i)]

(i) An analysis demonstrating the design capacity of the affected facility, [40 CFR 60.486(i)(1)]

(ii) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and [40 CFR 60.486(i)(2)]

(iii) An analysis demonstrating that equipment is not in VOC service. [40 CFR 60.486(i)(3)]

(8) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)]

(9) The provisions of 40 CFR 60.7(b) and 40 CFR 60.7(d) do not apply to affected facilities subject to 40 CFR 60.486. [40 CFR 60.486(k)]

(10) The signature of the Permittee (or designate) whose decision it was that a repair could not be effected without a process shutdown is not required to be recorded. Instead, the name of the person whose decision it was that a repair could not be effected without a process shutdown shall be recorded and retained for 2 years. [40 CFR 63.655(d)(1)(i)]

(d) Reporting Requirements

(1) The Permittee subject to the provisions of 40 CFR 60 Subpart VV shall submit semiannual reports to EPA and AMS beginning six months after the initial start-up date. [40 CFR 60.487(a)]

(2) The initial semiannual report to EPA shall include the following information: [40 CFR 60.487(b)]

(i) Process unit identification. [40 CFR 60.487(b)(1)]

(ii) Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f). [40 CFR 60.482-7(b)(2)]

(iii) Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f). [40 CFR 60.487(b)(3)]

(iv) Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR 60.482-3(i) and those compressors complying with 40 CFR 60.482-3(h). [40 CFR 60.487(b)(4)]

(3) All semiannual reports to EPA shall include the following information, summarized from the information in 40 CFR 60.486: [40 CFR 60.487(c)]

(i) Process unit identification. [40 CFR 60.487(c)(1)]

(ii) For each month during the semiannual reporting period:

(A) Number of valves for which leaks were detected as described in 40 CFR 60.482(7)(b) or 40 CFR 60.483-2, [40 CFR 60.487(c)(2)(i)]

(B) Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1), [40 CFR 60.487(c)(2)(ii)]

(C) Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and 40 CFR 60.482-2(d)(6)(i), [40 CFR 60.487(c)(2)(iii)]

(D) Number of pumps for which leaks were not repaired as required in 40 CFR 60.482-2(c)(1) and 40 CFR 60.482-2(d)(6)(ii), [40 CFR 60.487(c)(2)(iv)]

(E) Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f), [40 CFR 60.487(c)(2)(v)]

(F) Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1), and [40 CFR 60.487(c)(2)(vi)]

(G) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible. [40 CFR 60.487(c)(2)(vii)]

(iii) Dates of process unit shutdowns which occurred within the semiannual reporting period. [40 CFR 60.487(c)(3)]

(iv) Revisions to items reported according to 40 CFR 60.487(b) if changes have occurred since the initial report or subsequent revisions to the initial report. [40 CFR 60.487(c)(4)]

(4) The Permittee electing to comply with the provisions of 40 CFR 60.483-1 or 40 CFR 60.483-2 shall notify EPA Administrator and AMS of the alternative standard selected 90 days before implementing either of the provisions. [40 CFR 60.487(d)]

8. Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components, Subject to 40 CFR 63 Subpart H

[40 CFR 63.160-182; 25 Pa Code 129.58; AMR V Section XIII A & E, and 40 CFR 63.648(c)]

Refer to Summary Table in Section D.7. that summarizes leak detection and repair regulatory applicabilities for individual components within each process unit of the refinery.

(a) Work Practice Standards

(1) PUMPS. The Permittee shall monitor each pump (in light liquid service) monthly to detect leaks by the method specified in 40 CFR 63.180(b) and shall comply with the requirements of 40 CFR 63.180(a) through 40 CFR 63.180(d), except as provided in 40 CFR 63.162(b) and 40 CFR 63.180(e) through 40 CFR 63.180(j). [40 CFR 63.163(b)(1)]

(2) The instrument reading, as determined by the method as specified in 40 CFR 63.180(b), that defines a leak 1,000 parts per million or greater for all pumps. [40 CFR 63.163(b)(2)(iii)(C)]

(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected. [40 CFR 63.163(b)(3)]

(4) PUMP REPAIRS.

(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 63.163(c)(3) or 40 CFR 63.171. [40 CFR 63.163(c)(1)]

(ii) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable: [40 CFR 63.163(c)(2)]

(A) Tightening of packing gland nuts. [40 CFR 63.163(c)(2)(i)]

(B) Ensuring that the seal flush is operating at design pressure and temperature. [40 CFR 63.163(c)(2)(ii)]

(iii) Repair is not required unless an instrument reading of 2,000 parts per million or greater is detected. [40 CFR 63.163(c)(3)]

(5) LEAKING PUMPS.

(i) The Permittee shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the Permittee has decided, all subsequent percent calculations shall be made on the same basis. [40 CFR 63.163(d)(1)]

(ii) If the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak is calculated on a 6-month rolling average, the Permittee shall implement a quality improvement program for pumps that complies with the requirements of 40 CFR 63.176. [40 CFR 63.163(d)(2)]

(iii) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only. [40 CFR 63.163(d)(3)]

(iv) Percent leaking pumps shall be determined by the following equation [40 CFR 63.163(d)(4)]:

$$\%P_L=((P_L-P_S)/(P_T-P_S))\times 100$$

where:

$\%P_L$=Percent leaking pumps

P_L=Number of pumps found leaking as determined through monthly monitoring.

P_T=Total pumps in organic HAP service, including those meeting the criteria in 40 CFR 63.163(d)(6) and 40 CFR 63.163(d)(7).

P_S=Number of pumps leaking within 1 month of start-up during the current monitoring period.

(6) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 63.163(a) through 40 CFR 63.163(d), provided the following requirements are met: [40 CFR 63.163(e)]

(i) Each dual mechanical seal system is:

(A) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 63.163(e)(1)(i)]

(B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of 40 CFR 63.172; or [40 CFR 63.163(e)(1)(ii)]

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream. [40 CFR 63.163(e)(1)(iii)]

(ii) The barrier fluid is not in light liquid service. [40 CFR 63.163(e)(2)]

(iii) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 63.163(e)(3)]

(iv) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. [40 CFR 63.163(e)(4)]

(A) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in 40 CFR 63.180(b) to determine if there is a leak of organic HAP in the barrier fluid. [40 CFR 63.163(e)(4)(i)]

(B) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected. [40 CFR 63.163(e)(4)(ii)]

(v) Each sensor as described in 40 CFR 63.163(e)(3) is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site. [40 CFR 63.163(e)(5)]

(vi) PRESENCE OF DRIPS.

(A) The Permittee determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 63.163(e)(6)(i)]

(B) If indications of liquids dripping from the pump seal exceed the criteria established in 40 CFR 63.163(5)(6)(i), or if, based on the criteria established in 40 CFR 63.163(5)(6)(i), the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected. [40 CFR 63.163(e)(6)(ii)].

(C) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 63.171. [40 CFR 63.163(e)(6)(iii)]

(D) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.163(e)(6)(iv)]

(7) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of 40 CFR 63.163(a) through 40 CFR 63.163(c). [40 CFR 63.163(f)]

(8) Any pump equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of 40 CFR 63.172 is exempt from the requirements of 40 CFR 63.163(b) through 40 CFR 63.163(e). [40 CFR 63.163(g)]

(9) If more than 90 percent of the pumps at a process unit meet the criteria in either 40 CFR 63.163(e) or 40 CFR 63.163(f)., the process unit is exempt from the requirements of 40 CFR 63.163(d). [40 CFR 63.163(i)]

(10) Any pump that is designated, as described in 40 CFR 63.181(b)(7)(i), as an unsafe-to-monitor pump is exempt from the requirements of 40 CFR 63.163(b) through 40 CFR 63.163(e) if:

(i) The Permittee determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.163(b) through 40 CFR 63.163(d). [40 CFR 63.163(j)(1)]; and

(ii) The Permittee has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable. [40 CFR 63.163(j)(2)]

(11) PRESSURE RELIEF DEVICES. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in 40 CFR 63.165(b), as measured by the method specified in 40 CFR 63.180(c). [40 CFR 63.165(a)]

(i) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171. [40 CFR 63.165(b)(1)]

(ii) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in 40 CFR 63.180(c). [40 CFR 63.165(b)(2)]

(12) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in 40

CFR 63.172 is exempt from the requirements of 40 CFR 63.165(a) and 40 CFR 63.165(b). [40 CFR 63.165(c)]

(13) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of 40 CFR 63.165(a) and 40 CFR 63.165(b), provided the Permittee complies with the requirements in 40 CFR 63.165(d)(2). [40 CFR 63.165(d)(1)]

(14) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171. [40 CFR 63.165(d)(2)]

(15) SAMPLING CONNECTION SYSTEMS. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR 63.162(b). Gases displaced during filling of the sample container are not required to be collected or captured. [40 CFR 63.166(a)]

(16) Each closed-purge, closed-loop, or closed-vent system as required in 40 CFR 63.166(a) shall: [40 CFR 63.166(b)]

(i) Return the purged process fluid directly to the process line; or [40 CFR 63.166(b)(1)]

(ii) Collect and recycle the purged process fluid to a process; or [40 CFR 63.166(b)(2)]

(iii) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of 40 CFR 63.172; or [40 CFR 63.166(b)(3)]

(iv) Collect, store, and transport the purged process fluid to a system or facility identified in 40 CFR 63.166(b)(4)(i), 40 CFR 63.166(b)(4)(ii), or 40 CFR 63.166(b)(4)(iii)]. [40 CFR 63.166(b)(4)]

(A) A waste management unit as defined in 40 CFR 63.111 of subpart G of 40 CFR 63, if the waste management unit is subject to, and operated in compliance with the provisions of subpart G of 40 CFR 63 applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of subpart G of 40 CFR 63, the waster management unit need not be subject to, and operated in compliance with the requirements of 40 CFR 63, subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility. [40 CFR 63.166(b)(4)(i)]

(B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or [40 CFR 63.166(b)(4)(ii)]

(C) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261. [40 CFR 63.166(b)(4)(iii)]

(17) VALVES IN GAS/VAPOR SERVICE AND IN LIGHT LIQUID SERVICE. The provisions of this section apply to valves that are either in gas service or in light liquid service. The valves shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b). The instrument reading that defines a

leak is an instrument reading of 500 parts per million or greater. [40 CFR 63.168(a), 40 CFR 63.168(b)(1) and 40 CFR 63.168(b)(2)(iii)]

(18) The Permittee shall monitor valves for leaks at the intervals specified below: [40 CFR 63.168(d)]

(i) At process units with 2 percent or greater leaking valves, calculated according to 40 CFR 63.168(e), the Permittee shall monitor each valve once per month. [40 CFR 63.168(d)(1)(i)]

(ii) At process units with less than 2 percent leaking valves, the Permittee shall monitor each valve once each quarter, except as provided in 40 CFR 63.168(d)(3) and 40 CFR 63.168(d)(4). [40 CFR 63.168(d)(2)]

(iii) At process units with less than 1 percent leaking valves, the Permittee may elect to monitor each valve once every 2 quarters. [40 CFR 63.168(d)(3)]

(iv) At process units with less than 0.5 percent leaking valves, the Permittee may elect to monitor each valve once every 4 quarters. [40 CFR 63.168(d)(4)]

(19) Percent leaking valves at a process unit shall be determined by the following equation: [40 CFR 63.168(e)(1)]

$$\%V_L=(V_L/(V_T+ V_C))\times 100$$

where:

$\%V_L$=Percent leaking valves as determined through periodic monitoring required in 40 CFR 63.168(b) through 40 CFR 63.168(d).

V_L=Number of valves found leaking excluding nonrepairables as provided in 40 CFR 63.168(e)(3)(i).

V_T=Total valves monitored, in a monitoring period excluding valves monitored as required by 40 CFR 63.168(f)(3).

V_C=Optional credit for removed valves=0.67 × net number (i.e., total removed-total added) of valves in organic HAP service removed from process unit after the date set forth in 40 CFR 63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then V_C=0.

(20) For use in determining monitoring frequency, as specified 40 CFR 63.168(d), the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs. [40 CFR 63.168(e)(2)]

(21) NONREPAIRABLE VALVES.

(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with 40 CFR 63.168(e)(3)(ii). Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods. [40 CFR 63.168(e)(3)(i)]

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves [40 CFR 63.168(e)(3)(ii)].

(22) LEAKING VALVES.

(i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.171. [40 CFR 63.168(f)(1)]

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.168(f)(2)]

(iii) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. [40 CFR 63.168(f)(3)]

(A) The monitoring shall be conducted using as specified in 40 CFR 63.180(b) and 40 CFR 63.180(c), as appropriate, to determine whether the valve has resumed leaking. [40 CFR 63.168(f)(3)(i)]

(B) Periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d) may be used to satisfy the requirements of 40 CFR 63.168(f)(3), if the timing of the monitoring period coincides with the time specified in 40 CFR 63.168(f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of 40 CFR 63.168(f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in 40 CFR 63.168(f)(3). [40 CFR 63.168(f)(3)(ii)]

(C) If a leak is detected by monitoring that is conducted pursuant to 40 CFR 63.168(f)(3), the Permittee shall follow the provisions of 40 CFR 63.168(f)(3)(iii)(A) and 40 CFR 63.168(f)(3)(iii)(B), to determine whether that valve must be counted as a leaking valve for purposes of 40 CFR 63.168(e). [40 CFR 63.168(f)(3)(iii)]

(1) If the Permittee elected to use periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d) to satisfy the requirements of 40 CFR 63.168(f)(3), then the valve shall be counted as a leaking valve. [40 CFR 63.168(f)(3)(iii)(A)]

(2) If the Permittee elected to use other monitoring, prior to the periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d), to satisfy the requirements of 40 CFR 63.168(f)(3), then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking. [40 CFR 63.168(f)(3)(iii)(B)]

(23) First attempts at repair include, but are not limited to, the following practices where practicable: [40 CFR 63.168(g)]

(i) Tightening of bonnet bolts, [40 CFR 63.168(g)(1)]

(ii) Replacement of bonnet bolts, [40 CFR 63.168(g)(2)]

(iii) Tightening of packing gland nuts, and [40 CFR 63.168(g)(3)]

(iv) Injection of lubricant into lubricated packing. [40 CFR 63.168(g)(4)]

(24) Any valve that is designated, as described in 40 CFR 63.181(b)(7)(i), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 63.168(b) through 40 CFR 63.168(f), if: [40 CFR 63.168(h)]

(i) The Permittee determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.168(b) through 40 CFR 63.168(d); and [40 CFR 63.168(h)(1)]

(ii) The Permittee has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable. [40 CFR 63.168(h)(2)]

(25) Any valve that is designated, as described in 40 CFR 63.181(b)(7)(ii), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 63.168(b) through 40 CFR 63.168(d) if: [40 CFR 63.168(h)(2)(i)]

(i) The Permittee of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner; [40 CFR 63.168(i)(1)]

(ii) The process unit within which the valve is located is an existing source or the Permittee designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and [40 CFR 63.168(i)(2)]

(iii) The Permittee of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 63.168(i)(3)]

(26) CONNECTORS IN GAS/VAPOR AND LIGHT LIQUID SERVICE. The Permittee shall monitor all connectors in gas/vapor and light liquid service, except as provided in 40 CFR 63.162(b) and in 40 CFR 63.174(f) through 40 CFR 63.174(h) at the intervals specified in 40 CFR 63.174(b). [40 CFR 63.174(a)]

(27) The connectors shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b). [40 CFR 63.174(a)(1)]

(28) If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected. [40 CFR 63.174(a)(2)]

(29) The Permittee shall monitor for leaks at the intervals specified in either 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2) and in 40 CFR 63.174(b)(3). [40 CFR 63.174(b)]

(i) For each group of process units within an existing source, by no later than 12 months after the compliance date, the Permittee shall monitor all connectors, except as provided in 40 CFR 63. 174(f) through 40 CFR 63. 174(h). [40 CFR 63.174(b)(1)]

(ii) After conducting the initial survey required in 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2), the Permittee shall perform all subsequent monitoring of connectors at the frequencies specified in 40 CFR 63.174(b)(3)(I) through 40 CFR 63.174(b)(3)(v), except as provided in 40 CFR 63.174(c)(2): [40 CFR 63.174(b)(3)]

(A) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period. [40 CFR 63.174(b)(3)(i)]

(B) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The Permittee may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period. [40 CFR 63.174(b)(3)(ii)]

(C) If the Permittee of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the Permittee may monitor the connectors one time every 4 years. A Permittee may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years. [40 CFR 63.174(b)(3)(iii)]

(D) If a process unit complying with the requirements of 40 CFR 63.174(b) using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the Permittee shall increase the monitoring frequency to one time every 2 years. The Permittee may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The Permittee may again elect to use the provisions of 40 CFR 63.174(b)(3)(iii) when the percent leaking connectors decreases to less than 0.5 percent. [40 CFR 63.174(b)(3)(iv)]

(E) If a process unit complying with requirements of 40 CFR 63.174(b)(3)(iii) using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the Permittee shall increase the monitoring frequency to one time per year. The Permittee may again elect to use the provisions of 40 CFR 63.174(b)(3)(iii) when the percent leaking connectors decreases to less than 0.5 percent. [40 CFR 63.174(b)(3)(v)]

(30) NONREPAIRABLE CONNECTORS.

(i) Except as provided in 40 CFR 63.174(c)(1)(ii), each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of 40 CFR 63.174(d), unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of 40 CFR 63.174(i)(2). [40 CFR 63.174(c)(1)(i)]

(ii) As an alternative to the requirements in 40 CFR 63.174(c)(1)(i), the Permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the Permittee may not count

nonrepairable connectors for the purposes of 40 CFR 63.174(i)(2). The Permittee shall calculate the percent leaking connectors for the monitoring periods described in 40 CFR 63.174(b), by setting the nonrepairable component, C_{AN}, in the equation in 40 CFR 63.174(i)(2) to zero for all monitoring periods. [40 CFR 63.174(c)(1)(ii)]

(iii) The Permittee may switch alternatives described in 40 CFR 63.174(c)(1)(i) and 40 CFR 63.174(c)(1)(ii) at the end of the current monitoring period he is in, provided that it is reported as required in 40 CFR 63.182 and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch. [40 CFR 63.174(c)(1)(iii)]

(31) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.174(g) and 40 CFR 63.171. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 63.174(d)]

(32) Any connector that is designated, as described in 40 CFR 63.181(b)(7)(i) as an unsafe-to-monitor connector is exempt from the requirements of 40 CFR 63.174(a) if: [40 CFR 63.174(f)]

(i) The Permittee determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with 40 CFR 63.174(a) through 40 CFR 63.174(e); and [40 CFR 63.174(f)(1)]

(ii) The Permittee has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable. [40 CFR 63.174(f)(2)]

(33) Any connector that is designated, as described in 40 CFR 63.181(b)(7)(iii), as an unsafe-to-repair connector is exempt from the requirements of 40 CFR 63.174(a), 40 CFR 63.174(d), and 40 CFR 63.174(e) if:

(i) The Permittee determines that repair personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.174(d); and [40 CFR 63.174(g)(1)]

(ii) The connector will be repaired before the end of the next scheduled process unit shutdown. [40 CFR 63.174(g)(2)]

(34) INACCESSIBLE CONNECTORS.

(i) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of 40 CFR 63.174(a) and 40 CFR 63.174(c). [40 CFR 63.174(h)(1)]

(ii) An inaccessible connector is one that is:

(A) Buried [40 CFR 63.174(h)(1)(i)];

(B) Insulated in a manner that prevents access to the connector by a monitor probe [40 CFR 63.174(h)(1)(ii)];

(C) Obstructed by equipment or piping that prevents access to the connector by a monitor probe [40 CFR 63.174(h)(1)(iii)];

(D) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground [40 CFR 63.174(h)(1)(iv)];

(E) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold [40 CFR 63.174(h)(1)(v)]; or

(F) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment. [40 CFR 63.174(h)(1)(vi)]

(ii) If any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.171 and 40 CFR 63.174(g). [40 CFR 63.174(h)(2)]

(iii) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 63.174(h)(3)]

(35) For use in determining the monitoring frequency, as specified in 40 CFR 63.174(b), the percent leaking connectors shall be calculated as specified in 40 CFR 63.174(i)(1) and 40 CFR 63.174(i)(2). [40 CFR 63.174(i)]

(i) For the first monitoring period, use the following equation: [40 CFR 63.174(i)(1)]

$\% C_L = C_L/(C_t + C_C) \times 100$

where:

$\% C_L$= Percent leaking connectors as determined through periodic monitoring required in 40 CFR 63.174(a) and 40 CFR 63.174(b).

C_L= Number of connectors measured at 500 parts per million or greater.

C_t= Total number of monitored connectors in the process unit.

C_C= Optional credit for removed connectors = 0.67 × net (i.e., total removed—total added) number of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C= 0.

(ii) For subsequent monitoring periods, use the following equation [40 CFR 63.174(i)(2)]:

$\% C_L = [(C_L - CAN)/(C_t + C_C)] \times 100$

where:

$\% C_L$= Percent leaking connectors as determined through periodic monitoring required in 40 CFR 63.174(a) and 40 CFR 63.174(b).

C_L= Number of connectors, including nonrepairables, measured at 500 parts per million or greater.

C_{AN}= Number of allowable nonrepairable connectors, as determined by monitoring required in 40 CFR 63.174(b)(3) and 40 CFR 63.174(c), not to exceed 2 percent of the total connector population, C_t.

C_t= Total number of monitored connectors, including nonrepairables, in the process unit.

C_C= Optional credit for removed connectors = 0.67 × net number (i.e., total removed—total added) of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C= 0.

(36) PUMPS, VALVES, CONNECTORS, AND AGITATORS IN HEAVY LIQUID SERVICE; INSTRUMENTATION SYSTEMS; AND PRESSURE RELIEF DEVICES IN LIQUID SERVICE. Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in 40 CFR 63.180(b) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in 40 CFR 63.169(c) and 40 CFR 63.169(d), it is not necessary to monitor the system for leaks by the method specified in 40 CFR 63.180(b). [40 CFR 63.169(a)]

(37) If an instrument reading of 10,000 parts per million or greater for agitators, 2,000 parts per million or greater for pumps, or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected. [40 CFR 63.169(b)]

(38) REPAIRS.

(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected. [40 CFR 63.169(c)]

(ii) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.169(c)(2)]

(iii) For equipment identified in 40 CFR 63.169(a) that is not monitored by the method specified in 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure. [40 CFR 63.169(c)(3)]

(iv) First attempts at repair include, but are not limited to, the practices described under 40 CFR 63.163(c)(2) and 40 CFR 63.168(g), for pumps and valves, respectively. [40 CFR 63.169(d)]

(b) Testing Requirements

[25 PA Code §139]

(1) Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(b)(1)]

(2) Except as provided for in 40 CFR 63.180(b)(2)(ii), the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method

21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted. [40 CFR 63.180(b)(2)(i)]

(3) If no instrument is available at the plant site that will meet the performance criteria specified in 40 CFR 63.180(b)(2)(i), the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in 40 CFR 63.180(b)(2)(i). [40 CFR 63.180(b)(2)(ii)]

(4) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(b)(3)]

(5) Calibration gases shall be:

(i) Zero air (less than 10 parts per million of hydrocarbon in air) [40 CFR 63.180(b)(4)(i)]; and

(ii) Mixtures of methane in air at the concentrations specified in 40 CFR 63.180(b)(4)(ii)(A) through 40 CFR 63.180(b)(4)(ii)(C). A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in 40 CFR 63.180(b)(2)(i). In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air. [40 CFR 63.180(b)(4)(ii)]

(iii) A mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 1,000 parts per million for pumps; and 500 parts per million for all other equipment, except as provided in 40 CFR 63.180(b)(5)(iii). [40 CFR 63.180(b)(4)(ii)(C)]

(6) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the Permittee need not calibrate the scales that will not be used during that day's monitoring. [40 CFR 63.180(b)(4)(iii)]

(7) When equipment is monitored for compliance as required in 40 CFR 63.164(i), 63.165(a), and 63.172(f) or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by subpart H of 40 CFR 63, the Permittee may elect to adjust or not to adjust the instrument readings for background. If the Permittee elects to not adjust instrument readings for

background, the Permittee shall monitor the equipment according to the procedures specified in 40 CFR 63.180(b)(1) through 40 CFR 63.180(b)(4). In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If the Permittee elects to adjust instrument readings for background, the Permittee shall monitor the equipment according to the procedures specified in 40 CFR 63.180(c)(1) through 40 CFR 63.180(c)(4). [40 CFR 63.180(c)]

(i) The requirements of 40 CFR 63.180(b)(1) through 40 CFR 63.180(b)(4) shall apply. [40 CFR 63.180(c)(1)]

(ii) The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking. [40 CFR 63.180(c)(2)]

(iii) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(c)(3)]

(iv) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance. [40 CFR 63.180(c)(4)]

(8) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used. [40 CFR 63.180(d)(1)]

(9) A Permittee may use good engineering judgment rather than the procedures in 40 CFR 63.180(d)(1) to determine that the percent organic HAP content does not exceed 5 percent by weight. When A Permittee and the EPA Administrator and AMS do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in 40 CFR 63.180(d)(1) shall be used to resolve the disagreement. [40 CFR 63.180(d)(2)(i)]

(10) Conversely, the Permittee may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent. [40 CFR 63.180(d)(2)(ii)]

(11) If a Permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph 40 CFR 63.180(d)(1), or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service. [40 CFR 63.180(d)(3)]

(12) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment. [40 CFR 63.180(d)(4)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor. [40 CFR 63.180(b)(5)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of more than one process unit may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site. [40 CFR 63.181(a)]

(2) The following information pertaining to all equipment in each process unit subject to the requirements in 40 CFR 63.162 through 63.174 shall be recorded: [40 CFR 63.181(b)]

(i) A list of identification numbers for subject equipment (except connectors exempt from monitoring and recordkeeping identified in 40 CFR 63.174 and instrumentation systems). Connectors need not be individually identified if all connectors in a designated area or length of pipe are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2). [40 CFR 63.181(b)(1)(i)]

(ii) A schedule by process unit for monitoring connectors subject to the provisions of 40 CFR 63.174(a) and valves subject to the provisions of 40 CFR 63.168(d). [40 CFR 63.181(b)(1)(ii)]

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment may be identified on a plant site plan, in log entries, or by other appropriate methods. [40 CFR 63.181(b)(1)(iii)]

(iv) A list of identification numbers for equipment that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.163(g), 40 CFR 63.164(h), 40 CFR 63.165(c), or 40 CFR 63.173(f). [40 CFR 63.181(b)(2)(i)]

(v) A list of identification numbers for compressors that the Permittee elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of 40 CFR 63.164(i). [40 CFR 63.181(b)(2)(ii)]

(vi) Identification of surge control vessels or bottoms receivers that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.170. [40 CFR 63.181(b)(2)(iii)]

(vii) A list of identification numbers for pressure relief devices subject to the provisions in 40 CFR 63.165(a). [40 CFR 63.181(b)(3)(i)]

(viii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of 40 CFR 63.165(d). [40 CFR 63.181(b)(3)(ii)]

(ix) Identification of instrumentation systems subject to 40 CFR 63 Subpart H. Individual components in an instrumentation system need not be identified. [40 CFR 63.181(b)(4)]

(x) Identification of screwed connectors subject to the requirements of 40 CFR 63.174(c)(2). Identification can be by area or grouping as long as the total number within each group or area is recorded. [40 CFR 63.181(b)(5)]

(xi) The following information shall be recorded for each dual mechanical seal system:

(A) Design criteria required in 40 CFR 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) and an explanation of the design criteria; and [40 CFR 63.181(b)(6)(i)]

(B) Any changes to these criteria and the reasons for the changes. [40 CFR 63.181(b)(6)(ii)]

(xii) The following information pertaining to all pumps subject to the provisions of 40 CFR 63.163(j), valves subject to the provisions of 40 CFR 63.168(h) and 40 CFR 63.168(i), agitators subject to the provisions of 40 CFR 63.173(h) through 40 CFR 63.173(j), and connectors subject to the provisions of 40 CFR 63.174(f) and 40 CFR 63.174(g) shall be recorded: 40 CFR 63.181(b)(7)]

(A) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment. [40 CFR 63.181(b)(7)(i)]

(B) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment. [40 CFR 63.181(b)(7)(ii)]

(C) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair. [40 CFR 63.181(b)(7)(iii)]

(xiii) A list of valves removed from and added to the process unit, as described in 40 CFR 63.168(e)(1), if the net credits for removed valves is expected to be used. [40 CFR 63.181(b)(8)(i)]

(xiv) A list of connectors removed from and added to the process unit, as described in 40 CFR 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors, as required in 40 CFR 63.174(j). This is not required unless the net credits for removed connectors is expected to be used. [40 CFR 63.181(b)(8)(ii)]

(3) For visual inspections of equipment (e.g., 40 CFR 63.163(b)(3), 40 CFR 63.163(e)(4)(i)), the Permittee shall document that the inspection was conducted and the date of the inspection. The Permittee shall maintain records as specified in 40 CFR 63.181(d) for leaking equipment identified in this inspection. These records shall be retained for 5 years. [40 CFR 63.181(c)]

(4) When each leak is detected, the following information shall be recorded and kept for 5 years:

(i) The instrument and the equipment identification number and the operator name, initials, or identification number. [40 CFR 63.181(d)(1)]

(ii) The date the leak was detected and the date of first attempt to repair the leak. [40 CFR 63.181(d)(2)]

(iii) The date of successful repair of the leak. [40 CFR 63.181(d)(3)]

(iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable. [40 CFR 63.181(d)(4)]

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [40 CFR 63.181(d)(5)]

(A) The Permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by 40 CFR 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure. [40 CFR 63.181(d)(5)(i)]

(B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion. [40 CFR 63.181(d)(5)(ii)]

(vi) Dates of process unit shutdowns that occur while the equipment is unrepaired. [40 CFR 63.181(d)(6)]

(vii) Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in 40 CFR 63.174(b), as described in 40 CFR 63.174(c)(1), unless the Permittee elects to comply with the provisions of 40 CFR 63.174(c)(1)(ii). [40 CFR 63.181(d)(7)(i)]

(viii) The date and results of monitoring as required in 40 CFR 63.174(c). If identification of connectors that have been opened or otherwise had the seal broken is made by location under 40 CFR 63.181(d)(7)(i), then all connectors within the designated location shall be monitored. [40 CFR 63.181(d)(7)(ii)]

(ix) Copies of the periodic reports as specified in 40 CFR 63.182(d), if records are not maintained on a computerized database capable of generating summary reports from the records. [40 CFR 63.181(d)(9)]

(5) The dates and results of each compliance test required for compressors subject to the provisions in 40 CFR 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in 40 CFR 63.165(a) and 40 CFR 63.165(b). The results shall include: [40 CFR 63.181(f)]

(i) The background level measured during each compliance test. [40 CFR 63.181(f)(1)]

(ii) The maximum instrument reading measured at each piece of equipment during each compliance test. [40 CFR 63.181(f)(2)]

(6) The Permittee shall maintain records of the information specified in 40 CFR 63.181(g)(1) through 40 CFR 63.181(g)(3) for closed-vent systems and control devices subject to the provisions of 40 CFR 63.172. The records specified in 40 CFR 63.181(g)(1) shall be retained for the life of the equipment. The records specified in 40 CFR 63.181(g)(2) and 40 CFR 63.181(g)(3) shall be retained for 5 years. [40 CFR 63.181(g)]

(i) The design specifications and performance demonstrations specified in 40 CFR 63.181(g)(1)(i) through 40 CFR 63.181(g)(1)(iv). [40 CFR 63.181(g)(1)]

(A) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams. [40 CFR 63.181(g)(1)(i)]

(B) The dates and descriptions of any changes in the design specifications. [40 CFR 63.181(g)(1)(ii)]

(C) The flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by 40 CFR 63.11(b) of subpart A of 40 CFR 63 Subpart H. [40 CFR 63.181(g)(1)(iii)]

(D) A description of the parameter or parameters monitored, as required in 40 CFR 63.172(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 63.181(g)(1)(iv)]

(ii) Records of operation of closed-vent systems and control devices, as specified in 40 CFR 63.181(g)(2)(i) through 40 CFR 63.181(g)(2)(iii). [40 CFR 63.181(g)(2)]

(A) Dates and durations when the closed-vent systems and control devices required in 40 CFR 63.163 through 40 CFR 63.166, and 40 CFR 63.170 are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame. [40 CFR 63.181(g)(2)(i)]

(B) Dates and durations during which the monitoring system or monitoring device is inoperative. [40 CFR 63.181(g)(2)(ii)]

(C) Dates and durations of start-ups and shutdowns of control devices required in 40 CFR 63.163 through 40 CFR 63.166, and 40 CFR 63.170. [40 CFR 63.181(g)(2)(iii)]

(iii) Records of inspections of closed-vent systems subject to the provisions of 40 CFR 63.172, as specified CFR 63.181(g)(3)(i) and 40 CFR 63.181(g)(3)(ii). [40 CFR 63.181(g)(3)]

(A) For each inspection conducted in accordance with the provisions of 40 CFR 63.172(f)(1) or 40 CFR 63.172(f)(2) during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 63.181(g)(3)(i)]

(B) For each inspection conducted in accordance with the provisions of 40 CFR 63.172(f)(1) or 40 CFR 63.172(f)(2) during which leaks were detected, the information specified in 40 CFR 63.181(d) shall be recorded. [40 CFR 63.181(g)(3)(ii)]

(7) Each Permittee of a process unit subject to the requirements of 40 CFR 63.175 and 40 CFR 63.176 shall maintain the records specified in 40 CFR 63.181(h)(1) through 40 CFR 63.181(h)(9) for the period of the quality improvement program for the process unit. [40 CFR 63.181(h)]

(i) For the Permittee who elects to use a reasonable further progress quality improvement program, as specified in 40 CFR 63.175(d): [40 CFR 63.181(h)(1)]

(A) All data required in 40 CFR 63.175(d)(2). [40 CFR 63.181(h)(1)(i)]

(B) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter. [40 CFR 63.181(h)(1)(ii)]

(C) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(d). [40 CFR 63.181(h)(1)(iii)]

(ii) If the Permittee elects to use a quality improvement program of technology review and improvement, as specified in 40 CFR 63.175(e): [40 CFR 63.181(h)(2)]

(A) All data required in 40 CFR 63.175(e)(2). [40 CFR 63.181(h)(2)(i)]

(B) The percent leaking valves observed each quarter. [40 CFR 63.181(h)(2)(ii)]

(C) Documentation of all inspections conducted under the requirements of 40 CFR 63.175(e)(4), and any recommendations for design or specification changes to reduce leak frequency. [40 CFR 63.181(h)(2)(iii)]

(D) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(e). [40 CFR 63.181(h)(2)(iv)]

(iii) If the Permittee is subject to the requirements of the pump quality improvement program as specified in 40 CFR 63.176: [40 CFR 63.181(h)(3)]

(A) All data required in 40 CFR 63.176(d)(2) [40 CFR 63.181(h)(3)(i)].

(B) The rolling average percent leaking pumps [40 CFR 63.181(h)(3)(ii)].

(C) Documentation of all inspections conducted under the requirements of 40 CFR 63.176(d)(4), and any recommendations for design or specification changes to reduce leak frequency. [40 CFR 63.181(h)(3)(iii)]

(D) The beginning and ending dates while meeting the requirements of 40 CFR 63.176(d). [40 CFR 63.181(h)(3)(iv)]

(iv) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair. [40 CFR 63.181(h)(4)]

(v) Records of all analyses required in 40 CFR 63.175(e) and 40 CFR 63.176(d). The records will include the following: [40 CFR 63.181(h)(5)]

(A) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices. [40 CFR 63.181(h)(5)(i)]

(B) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials. [40 CFR 63.181(h)(5)(ii)]

(C) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under 40 CFR 63.175(e)(6)(iii) and 63.176(d)(6)(iii). [40 CFR 63.181(h)(5)(iii)]

(D) The beginning date and duration of performance trials of each candidate superior emission performing technology. [40 CFR 63.181(h)(5)(iv)]

(vi) All records documenting the quality assurance program for valves or pumps as specified in 40 CFR 63.175(e)(7) and 63.176(d)(7). [40 CFR 63.181(h)(6)]

(vii) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in 40 CFR 63.175(e)(7) and 40 CFR 63.176(d)(7). [40 CFR 63.181(h)(7)]

(viii) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in 40 CFR 63.176(d)(8). [40 CFR 63.181(h)(8)]

(ix) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. [40 CFR 63.181(h)(9)]

(8) The Permittee shall comply with the requirements of either 40 CFR 63.181(i)(1) or 40 CFR 63.181(i)(2), as provided in 40 CFR 63.181(i)(3). [40 CFR 63.181(i)]

(i) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service. [40 CFR 63.181(i)(1)]

(ii) When requested by the EPA Administrator and AMS, demonstrate that the piece of equipment or process is in heavy liquid service. [40 CFR 63.181(i)(2)]

(iii) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream

composition, engineering calculations, or process knowledge. [40 CFR 63.181(i)(3)]

(9) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit under 40 CFR 63.160. [40 CFR 63.181(j)]

(10) If the Permittee chooses to comply with the requirements of 40 CFR 63.179, they shall maintain the following records: [40 CFR 63.181(k)]

(i) Identification of the process unit(s) and the organic HAP's they handle. [40 CFR 63.181(k)(1)]

(ii) A schematic of the process unit, enclosure, and closed-vent system. [40 CFR 63.181(k)(2)]

(iii) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device. [40 CFR 63.181(k)(3)]

(e) Reporting Requirements

(1) The Permittee shall submit the following periodic reports. [40 CFR 63.182(d)]

(i) A report containing the information in 40 CFR 63.182(d)(2), 40 CFR 63.182(d)(3), and 40 CFR 63.182(d)(4) shall be submitted semiannually. Each semiannual report shall cover the 6-month period following the preceding period. [40 CFR 63.182(d)(1)]

(ii) For each process unit complying with the provisions of 40 CFR 63.163 through 40 CFR 63.174, the summary information listed in 40 CFR 63.182(d)(2)(i) through 40 CFR 63.182(d)(2)(xvi) for each monitoring period during the 6-month period. [40 CFR 63.182(d)(2)]

(A) The number of valves for which leaks were detected as described in 40 CFR 63.168(b), the percent leakers, and the total number of valves monitored; [40 CFR 63.182(d)(2)(i)]

(B) The number of valves for which leaks were not repaired as required in 40 CFR 63.168(f), identifying the number of those that are determined nonrepairable; [40 CFR 63.182(d)(2)(ii)]

(C) The number of pumps for which leaks were detected as described in 40 CFR 63.168(b), the percent leakers, and the total number of pumps monitored; [40 CFR 63.182(d)(2)(iii)]

(D) The number of pumps for which leaks were not repaired as required in 40 CFR 63.168(c); [40 CFR 63.182(d)(2)(iv)]

(E) The number of compressors for which leaks were detected as described in 40 CFR 63.163(c); [40 CFR 63.182(d)(2)(v)]

(F) The number of compressors for which leaks were not repaired as required in 40 CFR 63.164(g); [40 CFR 63.182(d)(2)(vi)]

(G) The number of agitators for which leaks were detected as described in 40 CFR 63.173(a) and 40 CFR 63.173(b); [40 CFR 63.182(d)(2)(vii)]

(H) The number of agitators for which leaks were not repaired as required in 40 CFR 63.173(c); [40 CFR 63.182(d)(2)(viii)]

(I) The number of connectors for which leaks were detected as described in 40 CFR 63.174(a), the percent of connectors leaking, and the total number of connectors monitored; [40 CFR 63.182(d)(2)(ix)]

(J) The number of connectors for which leaks were not repaired as required in 40 CFR 63.174(d), identifying the number of those that are determined nonrepairable; [40 CFR 63.182(d)(2)(xi)]

(K) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible. [40 CFR 63.182(d)(2)(xiii)]

(L) The results of all monitoring to show compliance with 40 CFR 63.164(i), 40 CFR 63.165(a), and 40 CFR 63.172(f) conducted within the semiannual reporting period. [40 CFR 63.182(d)(2)(xiv)]

(M) If applicable, the initiation of a monthly monitoring program under 40 CFR 63.168(d)(1)(i), or a quality improvement program under either 40 CFR 63.175 or 40 CFR 63.176. [40 CFR 63.182(d)(2)(xv)]

(N) If applicable, notification of a change in connector monitoring alternatives as described in 40 CFR 63.174(c)(1). [40 CFR 63.182(d)(2)(xvi)]

(O) If applicable, the compliance option that has been selected under 40 CFR 63.172(n). [40 CFR 63.182(d)(2)(xvii)]

9. Group 08 - Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[25 Pa Code 129.58, Case-by-case RACT, 25 Pa Code §§129.91-129.95; AMR V Section XIII.A.]

Refer to Summary Table in Section D.7. that summarizes leak detection and repair regulatory applicabilities for individual components within each process unit of the refinery.

(a) Work Practice Standards

(1) The Permittee shall not allow VOC to be emitted in liquid state at the point of discharge into the atmosphere from leaking pumps, valves, compressors, safety pressure relief devices, flanges, gaskets, seals, connections, joints, fitting or other process equipment. [AMR V. Sec. XIII.A.]

(2) Repair leaking refinery components which have a VOC concentration exceeding 10,000 ppm. [25 PA Code §129.58(a)(2)]

(3) Repair and retest the leaking refinery components as soon as possible. Every reasonable effort shall be made to repair each leak within 15 days unless a refinery unit shutdown is required to make the necessary repair. [25 PA Code §129.58(a)(3)]

(4) Identify leaking refinery components which cannot be repaired until the unit is shutdown for turnaround. [25 PA Code §129.58(a)(4)]

(5) Except for safety pressure relief valves and fittings on all valves 1 inch or smaller, do not install or operate a valve at the end of a pipe or line containing VOCs unless the pipe or line is sealed with a second valve, a blind flange, a plug or a cap. The sealing device may be removed only when a sample is being taken or during maintenance operations. [25 PA Code §129.58(b)]

(6) Pipeline valves and pressure relief valves in gaseous VOC service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and AMS. [25 PA Code §129.58(c)]

(7) The Permittee shall use the definitions provided in the Federal New Source Performance Standards (NSPS) to designate streams subject to monitoring in order to comply with 25 PA Code §129.58. The testing and monitoring requirements specified in 25 PA Code §129.58 are applied to sources that handle gas or "light" liquids (meeting the definition of 40 CFR 60.485(e)). Heavy liquid shall be monitored based on visual, audible, or olfactory means of detection. A source is considered to be in VOC service if it contacts or contains a gas or liquid that has at least 10% VOC by weight. [AMS Letter dated May 30, 2000, 25 PA Code §129.58(g)]

(b) Testing Requirements

[25 PA Code §139]

(1) For determining the magnitude of VOC leaks from petroleum refinery equipment, test methods and procedures shall be equivalent to those specified in EPA Method 21 (40 CFR 60, Appendix A) or as specified in 25 PA §139.4(5). Methane and ethane may be excluded from this measurement. If methane and ethane are excluded, the measurement of methane and ethane together shall be reported. [25 PA §139.14(b)(4)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Check yearly, by the method referenced in Section D.9.(b)(1), pump seals and pipeline valves in light liquid service. [25 PA Code §129.58(d)(1)(i)]

(2) Check quarterly by the method referenced in Section D.9.(b)(1), compressor seals, pipeline valves in gaseous service, and pressure relief valves in gaseous service. [25 Pa Code §129.58(d)(1)(ii)]

(3) Check monthly, by visual methods, all pump seals. [25 PA Code §129.58(d)(1)(iii)]

(4) For light liquid components, check within 24 hours, by the method referenced in Section D.9.(b)(1), a pump seal from which VOC liquids are observed to be dripping. [25 PA Code §129.58(d)(1)(iv)]

(5) Check, by the method referenced in Section D.9.(b)(1), a relief valve within 24 hours after it has vented to the atmosphere. [25 PA Code §129.58(d)(1)(v)]

(6) Check within 72 hours after repair, by the method referenced in Section D.9.(b)(1), a refinery component that was found leaking. [25 PA Code §129.58(d)(1)(vi)]

(7) Upon the detection of a leaking refinery component, affix a weatherproof and readily visible tag, bearing an identification number and the date upon which the leak is located to the leaking refinery component. This tag shall remain in place until the leaking refinery component is repaired. [25 PA Code §129.58(d)(3)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Maintain a leaking refinery components' monitoring log which shall contain, at a minimum, the following data:

(i) The name of the process unit where the refinery component is located. [25 PA Code §129.58(e)(1)(i)]

(ii) The type of refinery component— for example, valve, seal. [25 PA Code §129.58(e)(1)(ii)]

(iii) The tag number of refinery component. [25 PA Code §129.58(e)(1)(iii)]

(iv) The dates on which the leaking refinery component was discovered and repaired. [25 PA Code §129.58(e)(1)(iv)]

(v) The date and instrument reading of the recheck procedure after a leaking refinery component was repaired. [25 PA Code §129.58(e)(1)(v)]

(vi) A record of the calibration of the monitoring instrument. [25 PA Code §129.58(e)(1)(vi)]

(vii) Those leaks that cannot be repaired until turnaround. [25 PA Code §129.58(e)(1)(vii)]

(viii) The total number of refinery components checked and the total number of refinery components found leaking. [25 PA Code §129.58(e)(1)(viii)]

(e) Reporting Requirements

(1) The Permittee, upon completion of each yearly and quarterly monitoring procedure, shall do the following:

(i) Submit a report to AMS by the last business day of January, April, July, and October that lists all leaking refinery components that were located during the previous calendar quarter but not repaired within 15 days, all leaking refinery components awaiting unit turnaround, the total number of refinery components inspected and the total number of refinery components found leaking. [25 PA Code §129.58(f)(1)(i)]

(ii) Submit a signed statement with the report attesting to the fact that monitoring and repairs were performed as stipulated in the monitoring program. [25 PA Code §129.58(f)(1)(ii)]

(f) Case-by-case RACT, 25 Pa Code §§129.91-129.95

(1) The Permittee shall utilize a fugitive emission LDAR program for all valves, pumps, flanges, and compressors in VOC service. For any source not covered under an existing LDAR program, monitoring shall be conducted on a quarterly basis for equipment in gaseous service and on an annual basis for equipment in liquid service. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2K]

10. Group 09 – Cooling Towers

Girard Point equipment P125, P126, P127, and P128. Point Breeze equipment numbered P632, P633, P634, and P635.

(a) Emission Limitations

(1) Particulate Matter emission from each Cooling Tower shall not exceed 40 lbs/hr [AMR II Sec VII]

(b) Work Practice Standards

(1) The Permittee shall not use chromium-based water treatment chemicals in any affected industrial process cooling tower (IPCT). [40 CFR 63.402]

(2) Each cooling tower and equipments shall be installed, maintained, and operated in accordance with manufacturer's specifications.

(c) Testing Requirements

[25 PA Code §139]

(1) No routine sampling, or analysis is required. However, In accordance with section 114 of the Act, AMS can require cooling water sample analysis of an IPCT if there is information to indicate that the IPCT is not in compliance with the requirements of 40 CFR 63.402. The Permittee of an IPCT may demonstrate compliance through recordkeeping in accordance with 40 CFR 63.404(d) in lieu of a water sample analysis. If cooling water sample analysis is required: [40 CFR 63.404]

(i) The water sample analysis shall be conducted in accordance with Method 7196, Chromium, Hexavalent (Colorimetric), contained in the Third Edition of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (November 1986) and its Revision I, (December 1987) which are available from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, (202) 783-3238 (document number 955-001-00000-1; or Method 3500-Cr D, Colorimetric Method, contained in the 18th Edition of "Standard Methods for the Examination of Water and Wastewater" (1992), which is available from the American Public Health Association, 1015 15th Street, NW., Washington, DC 20005. [40 CFR 63.404(a)]

(ii) On or after 3 months after the compliance date, a cooling water sample residual hexavalent chromium concentration equal to or less than 0.5 parts per million by weight shall indicate compliance with 40 CFR 63.402. Alternatively, the Permittee may demonstrate compliance through record keeping in accordance with 40 CFR 63.404(c). [40 CFR 63.404(b)]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Perform daily visual inspection of water basins for presence of hydrocarbon.

(2) Utilize an inspection and maintenance/monitoring program for VOC fugitive emissions from cooling towers. [Case-by-case RACT, 25 Pa Code §§129.91-129.95, Section 2J]

(3) For P127, the Permittee who elects to comply with the requirements of 40 CFR 63.104(a) by monitoring the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak shall comply with the requirements specified in 40 CFR 63.104(b)(1) through 40 CFR 63.104(b)(6). The cooling

water shall be monitored for total hazardous air pollutants, total volatile organic compounds, total organic carbon, one or more speciated HAP compounds, or other representative substances that would indicate the presence of a leak in the heat exchange system. [40 CFR 63.104(b). This streamlined permit condition assures compliance with 40 CFR 63.104(a)]

(i) The cooling water shall be monitored monthly for the first 6 months and quarterly thereafter to detect leaks. [40 CFR 63.104(b)(1)]

(ii) For recirculating heat exchange systems (cooling tower systems), the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 4 subpart F of 40 CFR 63. [40 CFR 63.104(b)(2)(i)]

(iii) For once-through heat exchange systems, the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 9 of subpart G of 40 CFR 63. [40 CFR 63.104(b)(2)(ii)]

(iv) The concentration of the monitored substance(s) in the cooling water shall be determined using any EPA-approved method listed in part 136 of subpart F of 40 CFR 63 as long as the method is sensitive to concentrations as low as 10 parts per million and the same method is used for both entrance and exit samples. Alternative methods may be used upon approval by EPA. [40 CFR 63.104(b)(3)]

(v) The samples shall be collected either at the entrance and exit of each heat exchange system or at locations where the cooling water enters and exits each heat exchanger or any combination of heat exchangers. [40 CFR 63.104(b)(4)]

(vi) For samples taken at the entrance and exit of recirculating heat exchange systems, the entrance is the point at which the cooling water leaves the cooling tower prior to being returned to the process equipment and the exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid. [40 CFR 63.104(b)(4)(i)]

(vii) For samples taken at the entrance and exit of once-through heat exchange systems, the entrance is the point at which the cooling water enters and the exit is the point at which the cooling water exits the plant site or chemical manufacturing process units. [40 CFR 63.104(b)(4)(ii)]

(viii) For samples taken at the entrance and exit of each heat exchanger or any combination of heat exchangers in chemical manufacturing process units, the entrance is the point at which the cooling water enters the individual heat exchanger or group of heat exchangers and the exit is the point at which the cooling water exits the heat exchanger or group of heat exchangers. [40 CFR 63.104(b)(4)(iii)]

(ix) A minimum of three sets of samples shall be taken at each entrance and exit as defined in 40 CFR 63.104(b)(4). The average entrance and exit concentrations shall then be calculated. The concentration shall be corrected for the addition of any makeup water or for any evaporative losses, as applicable. [40 CFR 63.104(b)(5)]

(x) A leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one-sided statistical procedure at the 0.05 level of significance and the amount by which it is greater is at least 1 part per million or 10 percent of the entrance mean, whichever is greater. [40 CFR 63.104(b)(6)]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep record of PM emission to demonstrate compliance with Section D.10(a)(1). Emission shall be calculated using AP-42 emission factor.

(2) To demonstrate compliance with 40 CFR 63.402, in lieu of the water sample analysis provided for in 40 CFR 63.404(a), the Permittee of each IPCT may maintain records of water treatment chemical purchases, including invoices and other documentation that includes invoices and other documentation that includes date(s) of purchase or shipment, trade name or other information to identify composition of the product, and quantity of the product. The Permittee shall maintain these records for at least five years onsite. [40 CFR 63.404(c)]

(3) The Permittee shall maintain copies of the initial notification and the notification of compliance status as required by 40 CFR 63.405 for a period of at least 5 years onsite. [40 CFR 63.405]

(4) Record daily visual inspections of cooling tower water basin in Operators Log.

(5) Records of inspection and maintenance/monitoring program for VOC fugitive emissions from cooling towers.

(f) Reporting Requirements

(1) The Permittee shall report any VOC fugitive emissions present from cooling towers during inspections and actions taken in the semiannual report. [25 Pa Code 129.92(a)(7)]

11. Group 10 – Miscellaneous process vents (Group 1) subject to 40 CFR 63 Subparts G and CC

Girard Point equipment numbered P-184 (four associated vents – vacuum unit gases at Unit 137 go to CD-006 [F-1 Heater at Unit 137]; the other three vents go to a process heater or to flare P-117 [CD-012] or flare P-118 [CD-013]), P-181 (six associated vents that go to either flare P-117 [CD-012] or flare P-118 [CD-013], and P-184 vents that go to either flare P-117 [CD-012] or flare P-118 [CD-013]. Point Breeze equipment numbered P1002.

(a) Work Practice Standards

(1) Vacuum-producing systems shall vent any volatile organic compounds emitted from the condensers, hot wells, or accumulators of the system to a boiler or process heater. The boiler or heater shall have a heat input design capacity greater than 44 MW (150 MMBTU/hr) and shall reduce emissions of organic HAP's by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. The vent stream shall be introduced into the flame zone, or in a

location such that the required percent reduction or concentration is achieved. [40 CFR 63.643(a)(2) and 40 CFR 63.643(b), 25 PA Code §129.55(c)]

(2) A permittee may designate a process vent as a maintenance vent if the vent is only used as a result of startup, shutdown, maintenance, or inspection of equipment where equipment is emptied, depressurized, degassed or placed into service. In this event, the permittee must comply with the applicable requirements at 40 CFR 63.643(c)(1) through (4), for each maintenance vent, by the compliance dates specified in table 11 of 40 CFR 63 Subpart CC.

(3) If, after applying best practices to isolate and purge equipment served by a maintenance vent, none of the applicable criterion in paragraphs (c)(1)(i) through (iv) can be met prior to installing or removing a blind flange or similar equipment blind, the pressure in the equipment served by the maintenance vent is reduced to 2 psig or less, Active purging of the equipment may be used provided the equipment pressure at the location where purge gas is introduced remains at 2 psig or less.

(b) Non-Applicable Requirements

(1) Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt (150 MMBTU/hr) or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from testing, monitoring, recordkeeping, and reporting. [40 CFR 63.645(d), 40 CFR 63.644(a)(3), Table 10 of 40 CFR 63, Subpart CC]

(c) Recordkeeping Requirements

(1) The owner or operator shall maintain standard site procedures used to deinventory equipment for safety purposes (e.g., hot work or vessel entry procedures) to document the procedures used to meet the requirements in §63.643(c). The current copy of the procedures shall be retained and available on-site at all times. Previous versions of the standard site procedures, is applicable, shall be retained for five years.

(2) If complying with the requirements of §63.643(c)(1)(i) and the lower explosive limit at the time of the vessel opening exceeds 10 percent, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and the lower explosive limit at the time of the vessel opening.

(3) If complying with the requirements of §63.643(c)(1)(ii) and either the vessel pressure at the time of the vessel opening exceeds 5 psig or the lower explosive limit at the time of the active purging was initiated exceeds 10 percent, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, the pressure of the vessel or equipment at the time of discharge to the atmosphere and, if applicable, the lower explosive limit of the vapors in the equipment when active purging was initiated.

(4) If complying with the requirements of §63.643(c)(1)(iii), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and records used to estimate the total quantity of VOC in the equipment at the time the

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maintenance vent was opened to the atmosphere for each applicable maintenance vent opening.

(5) If complying with the requirements of §63.643(c)(1)(iv), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, records documenting the lack of a pure hydrogen supply, the date of maintenance vent opening, and the lower explosive limit of the vapors in the equipment at the time of discharge to the atmosphere for each applicable maintenance vent opening. [Reference: [40 CFR 63.655(i)(12)]

(d) Reporting Requirements

(1) For maintenance vents subject to the requirements in §63.643(c), Periodic Reports must include the information specified in paragraphs 40 CFR 63.655(g)(13) (i) through (iv) of this section for any release exceeding the applicable limits in §63.643(c)(1). For the purposes of this reporting requirement, owners or operators complying with §63.643(c)(1)(iv) must report each venting event for which the lower explosive limit is 20 percent or greater.

(i) Identification of the maintenance vent and the equipment served by the maintenance vent.

(ii) The date and time the maintenance vent was opened to the atmosphere.

(iii) The lower explosive limit, vessel pressure, or mass of VOC in the equipment, as applicable, at the start of atmospheric venting. If the 5 psig vessel pressure option in § 63.643(c)(1)(ii) was used and active purging was initiated while the lower explosive limit was 10 percent or greater, also include the lower explosive limit of the vapors at the time active purging was initiated

(iv) An estimate of the mass of organic HAP released during the entire atmospheric venting event.

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12. Group 13A – Tanks Subject to 40 CFR 63 Subpart G.

Girard Point Tanks numbered P-001, P005, P017, P018, P021, P022, P023, P024, P025, P026, P029, P163 and Point Breeze Tank numbered P523.

Girard Point Tanks – Refer to Group 14C. This streamlined permit condition assures compliance with 25 Pa Code 129.56 and AMR V. Sec. II. and 40 CFR 63.110(b)(1) for P-005.

Point Breeze Tank – Refer to Group 13C. This streamlined permit condition assures compliance with 25 Pa Code 129.56 and AMR V. Sec. II. and 40 CFR 63.110(b)(1) for P-523.

13. Group 13B – Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC

Girard Point Tanks numbered P012, P015, P016, and P034. Point Breeze Tanks numbered P510, P538, P545, P547, P594, P603, and P604. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

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(a) Work Practice Standards

(1) All tanks are subject to the same requirements as for Group 13C, Section D.14.(a), with the following exceptions,

(i) The following paragraphs do not apply to storage vessels at existing sources subject to subpart CC of 40 CFR 63: 40 CFR 63.119(b)(5), 40 CFR 63.119(b)(6), 40 CFR 63.119(c)(2), and 40 CFR 63.119(d)(2) (gasketed fittings). [40 CFR 63.646(c)]

(ii) When complying with the inspection requirements of 40 CFR 63.120 of subpart G of 40 CFR 63, the Permittee of storage vessels at existing sources are not required to comply with the provisions for gaskets, slotted membranes, and sleeve seals. [40 CFR 63.646(e)]

(iii) If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access. [40 CFR 63.646(f)(1)]

(iv) Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting. [40 CFR 63.646(f)(2)]

(v) Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 63.646(f)(3)]

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(2) An IFR shall be equipped with a liquid-mounted seal, or a mechanical shoe seal, or two seals mounted one above the other. If the two seal combination is used, the lower seal may be vapor-mounted. [40CFR 63.1063(a)(1)(i)(A)], (B) and (C).

(3) If the IFR is equipped with a vapor-mounted seal as of June 30, 2014, the requirements above do not apply until the next time the storage vessel is completely emptied and degassed, or 10 years after February 1, 2016, whichever comes first. [40 CFR 63.1063(a)(1)(i)(D)], [40 CFR 63.660(c)(1)] and [40 CFR 63.660(c)(2)]

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(4) Openings through the deck of the floating roof shall be equipped as specified at 40 CFR 63.1063(a)(2)(i) through viii. [40 CFR 63.1063(a)(2)]. If the floating roof does not meet the requirements above as of June 30 2014, these requirements do not apply until the next time the vessel is completely emptied and degassed, or 10 years after February 1, 2016, whichever occurs first. [40 CFR 63.660(c)(1)], [40 CFR 63.660(c)(2)] and [40 CFR 63.1063(a)(2)(ix)]

(5) Each opening through a floating roof for a ladder having at least one slotted leg shall be equipped with one of the following control options: A pole float in the slotted leg and pole wipers for both legs. The wiper or seal of the pole float must be at or above the height of the pole wiper, A ladder sleeve and pole wipers for both legs of the ladder, or A flexible enclosure device and either a gasketed or welded cap on the top of the slotted leg. [40 CFR 63.660(b)(2)(i)] through [40 CFR 63.660(b)(2)(iii)]

(6) The floating roof shall float on the stored liquid surface at all times, except when the floating roof is supported by its leg supports or other support devices (e.g., hangers from the fixed roof). [40 CFR 63.1063(b)(1)]

(7) When the storage vessel is storing liquid, but the liquid depth is insufficient to float the floating roof, the process of filling to the point of refloating the floating roof shall be continuous and shall be performed as soon as practical. [40 CFR 63.1063(b)(2)]

(8) Each cover over an opening in the floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall be closed at all times, except when the cover must be open for access. [40 CFR 63.1063(b)(3)]

(9) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design. [40 CFR 63.1063(b)(4)]

(10) Each unslotted guidepole cap shall be closed at all times except when gauging the liquid level or taking liquid samples. [40 CFR 63.1063(b)(5)]

(b) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) All tanks are subject to the same monitoring requirements as for Group 13C, Section D.14(c), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

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(2) Tanks shall be inspected as specified in paragraph (d)(1) of 40CFR63.1063 before the initial filling of the storage vessel. Subsequent inspections shall be performed as specified

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(i) Internal floating roofs shall be inspected as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of 40CFR63.1063.

(A) At least once per year the IFR shall be inspected as specified in paragraph (d)(2) of 40CFR63.1063.

(B) Each time the storage vessel is completely emptied and degassed, or every 10 years, whichever occurs first, the IFR shall be inspected as specified in paragraph (d)(1) of 40CFR63.1063.

(ii) Instead of the inspection frequency specified in paragraph (c)(1)(i) of 40CFR63.1063, internal floating roofs with two rim seals may be inspected as specified in paragraph (d)(1) of this section each time the storage vessel is completely emptied and degassed, or every 5 years, whichever occurs first. [40CFR63.1063]

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(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) All tanks are subject to the same recordkeeping requirements as for Group 13C, Section D.14(d), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(2) Keep all records for at least 5 years so that they can be readily accessed within 24 hours. [40 CFR 63.1065].

(3) For each storage vessel, keep records of the dimensions, an analysis of the capacity, and an identification of the liquid stored. [40 CFR 63.1065(a)].

(4) Keep records of all floating roof inspection results as specified at 40 CFR 63.1065(b)(1). [40 CFR 63.1065(b)].

(5) For each storage tank, record the date the floating roof was set on its legs, the date the roof was refloated, and whether the refloating process was continuous. [40 CFR 63.1065(c)].

(6) A permittee electing to use an extension per 40 CFR 63.1063(e)(2) or [40 CFR 63.1063(c)(2)(iv)(B) shall keep the relevant documentation.[40 CFR 63.1065(d)].

(d) Reporting Requirements

(1) All tanks are subject to the same reporting requirements as for Group 13C, Section D.14(e), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(2) Conditions that constitute inspection failures shall be repaired as specified at [40 CFR 63.1063(e)(1)] or (2). [40 CFR 63.1063(e)].

(3) Submit Periodic Reports no later than 60 days after the end of each 6-month period when information specified at 40 CFR 63.655(g)(2)(ii) is collected. A Periodic Report is not required if none of the events identified at 40 CFR 63.655(g)(2)(ii) occurred during the 6-month period. [40 CFR 63.655(e)(2)] and [40 CFR 63.655(g)].

(4) Submit notifications of inspections as specified at 40 CFR 63.655(h)(2)(i). [40 CFR 63.655(h)(2)] and [40 CFR 63.655(e)(3)].

(5) Periodic reports must contain inspection notifications, inspection results and requests for extensions. [40 CFR 63.1066(b)]

14. Group 13C – Internal Floating Roof Tanks subject to 40 CFR 60, Subpart Kb

Girard Point Tanks P009, P010, P134, P135, P-136, P137, P159, P160, and P174. Point Breeze equipment numbered P501 and P511. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling

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shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(2) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(i) A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank. [40 CFR 60.112b(a)(1)(ii)(A)]

(ii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous. [40 CFR 60.112b(a)(1)(ii)(B)]

(iii) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof. [40 CFR 60.112b(a)(1)(ii)(C)]

(3) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(4) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(5) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(6) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(7) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(8) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(9) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(ix)]

(10) Subpart Kb applies to storage vessels with a capacity ≥ 151 m^3 with max true vapor pressure ≥ 3.5 kilopascals (kPa) but less than 76.6 kPa or with a

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capacity ≥ 75 m^3 but < 151 m^3 with maximum true vapor pressure ≥ 27.6 kPa but less than 76.6 kPa. [40 CFR 60.112b(a)]

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(b) Testing Requirements

[25 PA Code §139]

(1) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below. [40 CFR 60.116b(e)]

(i) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(ii) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(A) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(B) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(2) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel. [40 CFR 60.113b(a)(1)]

(2) For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary

seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

(3) For vessels equipped with a double-seal system: [40 CFR 60.113b(a)(3)]

(i) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(4) at least every 5 years; or [40 CFR 60.113b(a)(3)(i)]

(ii) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(2). [40 CFR 60.113b(a)(3)(ii)]

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in 40 CFR 60.113b(a)(2) and 40 CFR 60.113b(a)(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113b(a)(3(i). [40 CFR 60.113b(a)(4)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. The record will be kept for the life of the source. Each storage vessel with a design capacity less than 75 m^3 is exempt except for what is required in D.14(d)(2). [40 CFR 60.116b(a) and (b)]

(2) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75

m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

(4) Keep a record of each inspection performed as required by 40 CFR 60.113b (a)(1), (a)(2), (a)(3) and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). [40 CFR 60.115b(a)(2)]

(e) Reporting Requirements

(1) Notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to have an observer present. If the inspection is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

(2) Furnish the EPA Administrator and AMS with a report that describes the control equipment and certifies that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1). This report shall be an attachment to the notification required by 40 CFR 60.7(a)(3). [40 CFR 60.115b(a)(1)]

(3) If any of the conditions described in 40 CFR 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR 60.113b(a)(2), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

(4) After each inspection required by 40 CFR 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR 60.113b(a)(3)(ii), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection.

The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR 61.112b(a)(1) or 40 CFR 60.113b(a)(3) and list each repair made. [40 CFR 60.115b(a)(4)]

15. Group 14A – External Floating Roof Tanks subject to only local and State Regulations

16. Group 14B – External Floating Roof Tanks subject to 40 CFR 63, Subpart CC

Point Breeze Tanks P502, P503, P504, P507, P508, P509, P512, P513, P514, P521, P525, P526, P527, P537, P540, P541, P542, P546, P579, P587, P588, P590 P594, P599, P600, P601, P602, P603, and P604. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) Same requirements as for Group 14C, Section D.17(a), except that the gasketed fitting requirements do not apply to this group of tanks.

(2) An EFR shall be equipped with a liquid-mounted seal and a secondary seal or a mechanical shoe seal and a secondary seal with the upper end of the shoe(s) extending a minimum of 61 cm (24 inches) above the stored liquid surface. [40 CFR 63.1063(a)(1)(ii)(A)] and (B).

(3) If the EFR is equipped with a liquid-mounted seal, a mechanical shoe seal, or a vapor-mounted seal and secondary seal as of June 30 2014, the requirements above do not apply until the next time the storage vessel is completely emptied and degassed, or 10 years after February 2016, whichever occurs first. [40 CFR 63.1063(a)(1)(ii)(C)], [40 CFR 63.660(c)(1)] and [40 CFR 63.660(c)(2)]

(4) Openings through the deck of the floating roof shall be equipped as specified at 40 CFR 63.1063(a)(2)(i) through viii. [40 CFR 63.1063(a)(2)]. If the floating roof does not meet the requirements above as of June 30 2014, these requirements do not apply until the next time the vessel is completely emptied and degassed, or 10 years after February 1, 2016, whichever occurs first. [40 CFR 63.660(c)(1)], [40 CFR 63.660(c)(2)] and [40 CFR 63.1063(a)(2)(ix)]

(5) Each opening through a floating roof for a ladder having at least one slotted leg shall be equipped with one of the following control options: A pole float in the slotted leg and pole wipers for both legs. The wiper or seal of the pole float must be at or above the height of the pole wiper, A ladder sleeve and pole wipers for both legs of the ladder, or A flexible enclosure device and either a gasketed or welded cap on the top of the slotted leg. [40 CFR 63.660(b)(2)(i)] through [40 CFR 63.660(b)(2)(iii)]

(6) The floating roof shall float on the stored liquid surface at all times, except when the floating roof is supported by its leg supports or other support devices (e.g., hangers from the fixed roof). [40 CFR 63.1063(b)(1)]

(7) When the storage vessel is storing liquid, but the liquid depth is insufficient to float the floating roof, the process of filling to the point of refloating the floating roof shall be continuous and shall be performed as soon as practical. [40 CFR 63.1063(b)(2)]

(8) Each cover over an opening in the floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall be closed at all times, except when the cover must be open for access. [40 CFR 63.1063(b)(3)]

(9) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design. [40 CFR 63.1063(b)(4)]

(10) Each unslotted guidepole cap shall be closed at all times except when gauging the liquid level or taking liquid samples. [40 CFR 63.1063(b)(5)]

(b) Testing Requirements

[25 PA Code §139]

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(3) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the

wall of the storage vessel according to the following frequency. [40 CFR 60.113b(b)(1)]

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter. [40 CFR 60.113b(b)(1)(i)]

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter. [40 CFR 60.113b(b)(1)(ii)]

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of 40 CFR 60.113b(b)(1)(i) and 40 CFR 60.113b(b)(1)(ii). [40 CFR 60.113b(b)(1)(iii)]

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures: [40 CFR 60.113b(b)(2)]

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. [40 CFR 60.113b(b)(2)(i)]

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location. [40 CFR 60.113b(b)(2)(ii)]

(iii) The total surface area of each gap described in paragraph 40 CFR 60.113b(b)(2)(ii) shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance. [40 CFR 60.113b(b)(2)(iii)]

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in 40 CFR 60.113b(b)(4). [40 CFR 60.113b(b)(3)]

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and 40 CFR 60.113b(b)(4)(ii): [40 CFR 60.113b(b)(4)]

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface. [40 CFR 60.113b(b)(4)(i)(A)]

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 60.113b(b)(4)(i)(B)]

(ii) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in [40 CFR 60.113b(b)(2)(iii)]. [40 CFR 60.113b(b)(4)(ii)(A)]

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. [40 CFR 60.113b(b)(4)(ii)(B)]

(C) There are to be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 60.113b(b)(4)(ii)(C)]

(iii) If a failure is detected during an inspection and cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.113b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(b)(4)(iii)]

(5) Notify the EPA Administrator and AMS 30 days in advance of any gap measurements required by 40 CFR 60.113b(b)(1) to afford the EPA Administrator and AMS the opportunity to have an observer present. [40 CFR 60.113b(b)(5)]

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. [40 CFR 60.113b(b)(6)]

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL. [40 CFR 60.113b(b)(6)(i)]

(7) For all the inspections required by 40 CFR 60.113b(b)(6), the Permittee shall notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to inspect the storage vessel prior to refilling. If the inspection required by 40 CFR 60.113b(b)(6) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(b)(6)(ii)]

(8) External floating roofs shall be inspected as specified in paragraphs (c)(2)(i) through (c)(2)(iv) of 40CFR 63.1063

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(i) Within 90 days after the initial filling of the storage vessel, the primary and secondary rim seals shall be inspected as specified in paragraph (d)(3) of 40CFR 63.1063.

(ii) The secondary seal shall be inspected at least once every year, and the primary seal shall be inspected at least every 5 years, as specified in paragraph (d)(3) of 40CFR 63.1063.

(iii) Each time the storage vessel is completely emptied and degassed, or every 10 years, whichever occurs first, the EFR shall be inspected as specified in paragraph (d)(1) of 40CFR 63.1063.

(iv) If the owner or operator determines that it is unsafe to perform the floating roof inspections specified in paragraphs (c)(2)(i) and (c)(2)(ii) of 40CFR 63.1063, the owner or operator shall comply with the requirements of paragraph (c)(2)(iv)(A) or (c)(2)(iv)(B) of 40CFR 63.1063.

(A) The inspections shall be performed no later than 30 days after the determination that the floating roof is unsafe. Or,

(B) The storage vessel shall be removed from liquid service no later than 45 days after determining the floating roof is unsafe. If the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two extensions of up to 30 additional days each. If the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two extensions of up to 30 additional days each. Documentation of a decision to use an extension shall include an explanation of why it was unsafe to perform the inspection, documentation that alternative storage capacity is unavailable, and a schedule of actions that will ensure that the vessel will be emptied as soon as practical. [40CFR 63.1063]

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(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep copies of all records required by 40 CFR 60.116b(b), for the life of the source. [40 CFR 60.116b(a)]

(2) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of this subpart other than those required by this paragraph. The records of this condition shall be kept for the life of the source. [40 CFR 60.116b(a) and (b)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75

m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(4) The Permittee shall keep a record of each gap measurement performed as required by 40 CFR 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement. [40 CFR 60.115b(b)(3)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(3)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(3)(iii)]

(5) Keep all records for at least 5 years so that they can be readily accessed within 24 hours. [40 CFR 63.1065].

(6) For each storage vessel, keep records of the dimensions, an analysis of the capacity, and an identification of the liquid stored. [40 CFR 63.1065(a)].

(7) Keep records of all floating roof inspection results as specified at 40 CFR 63.1065(b)(1) and (2). [40 CFR 63.1065(b)].

(8) For each storage tank, record the date the floating roof was set on its legs, the date the roof was refloated, and whether the refloating process was continuous. [40 CFR 63.1065(c)].

(9) A permittee electing to use an extension per 40 CFR 63.1063(e)(2) or [40 CFR 63.1063(c)(2)(iv)(B) shall keep the relevant documentation.[40 CFR 63.1065(d)].

(e) Reporting Requirements

(1) Within 60 days of performing the seal gap measurements, the Permittee furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(2) Within 60 days of performing the seal gap measurements required by (c)(1) of this section, The Permittee shall furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(3) After each seal gap measurement that detects gaps exceeding the limitations specified by (c)(4) of this section, the Permittee shall submit a report to the EPA Administrator and AMS within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (e)(2) of this section and the date the vessel was emptied or the repairs made and date of repair. [40 CFR 60.115b(b)(4)]

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(4) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

(5) Conditions that constitute inspection failures shall be repaired as specified at [40 CFR 63.1063(e)(1)] or (2). [40 CFR 63.1063(e)].

(6) Submit Periodic Reports no later than 60 days after the end of each 6-month period when information specified at 40 CFR 63.655(g)(2)(ii) is collected. A Periodic Report is not required if none of the events identified at 40 CFR 63.655(g)(2)(ii) occurred during the 6-month period. [40 CFR 63.655(e)(2)] and [40 CFR 63.655(g)].

(7) Submit notifications of inspections as specified at 40 CFR 63.655(h)(2)(i). [40 CFR 63.655(h)(2)] and [40 CFR 63.655(e)(3)].

(8) Periodic reports must contain inspection notifications, inspection results and requests for extensions. [40 CFR 63.1066(b)]

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17. Group 14C – External Floating Roof Tanks subject to 40 CFR 60, Subpart Kb (or equivalent).

Girard Point Tanks P006, P155, and P162. Point Breeze Tanks P624, and P627. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications: [40 CFR 60.112b(a)(2)]

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in 40 CFR 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall. [40 CFR 60.112b(a)(2)(i)(A)]

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4). [40 CFR 60.112b(a)(2)(i)(B)]

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid

surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(2) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(b) Testing Requirements

[25 PA Code §139]

(1) Same requirements as for Group 14B, Section D.16(b).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Same requirements as for Group 14B, Section D.16(c).

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Same requirements as for Group 14B, Section D.16(d).

(e) Reporting Requirements

(1) Same requirements as for Group 14B, Section D.16(e).

18. Group 15A – Group 2 Storage Tanks

Girard Point Tanks P002, P003, P019, P020, P027, P028, P030, P031, P032, P035, P036, P037, P039, P144, P146, P147, P150, P151, P153, P154, P157, P165, P166, P167, P175, P176, P177, P178, and P179. Point Breeze Tanks P515, P516, P518, P519, P520, P529, P530, P534, P535, P551, P563, P565, P567, P571, P574, P575, P576, P577, P578, P580, P582, P584, P585, and P623. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II. for all tanks except for P-149, P-154, P-175, P-176, P-177, P-178, and P-179. These streamlined permit conditions assure compliance with 25 Pa Code 129.57 for Tank P-154.]

(b) Work Practice.

(1) Each tank shall have maximum true vapor pressure of less than 10.4 kPa (1.5 psia) and the annual average true vapor pressure shall be less than 8.3 kPa (1.2 psia).

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee may use good engineering judgment or test results to determine the stored liquid weight percent total organic HAP for purposes of group determination. Data, assumptions, and procedures used in the determination shall be documented. [40 CFR 63.646(b)(1)]

(2) When the Permittee and the EPA Administrator and AMS do not agree on whether the annual average weight percent organic HAP in the stored liquid is above or below 4 percent for a storage vessel at an existing source, Method 18 of 40 CFR part 60, appendix A shall be used. [40 CFR 63.646(b)(2)]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Keep records of identification of each storage vessel. [40 CFR 63.655(f)(1)(i)(A)]

(2) Keep a record of any data, assumptions, and procedures used to make a Group 2 determination (e.g., the weight percent total organic HAP of the stored liquid.) [40 CFR 63.655(i)(1)(iv)]

(3) Keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 2 status and is in operation. [40 CFR 63.123(a)]

(d) Reporting Requirements

(1) Submit the identification of each Group 2 storage vessel each time a Notification of Compliance Status Report is submitted. [40 CFR 63.655(f)(1)(i)(A)]

19. Group 15B – Fixed Roof Tanks subject to 40 CFR 60 Subpart Kb recordkeeping requirements

Girard Point Tanks P158, P171, and P172. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The Permittee shall not store in each tank any volatile organic liquid with a maximum true vapor pressure equal to or greater than 5.2 kPa as stored. [40 CFR 60.112b(a)]

(b) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of subpart J of 40 CFR 60 other than those required by this paragraph. [40 CFR 60.116b(b)]

20. Group 17 – Marine loading equipment

Girard Point P130 and CD011 (Thermal Oxidizer for P130). Point Breeze equipment numbered P636.

(a) Work Practice Standards

(1) Equipment leaks associated with the Marine Vapor Collection and Control System (MVCACS) are applicable to the requirements of Group 7, Section D.8. [AMS Permit Approval Letter Dated May 23, 2001, AMS Installation Permit No. 94110]

(2) For P636, the operation of the MVCACS is limited to 2500 barrels per hour. [AMS Permit Approval Letter Dated May 23, 2001, AMS Installation Permit No. 94110]

(3) Vapors from the operation of the MVCACS shall be fed as a primary fuel to the process heaters and boilers in order to achieve a minimum of 98% destruction efficiency. [AMS Permit Dated May 9, 2001, paragraph 2. This streamlined permit condition assures compliance with 29 PA Code §129.81(1)(i) and (2)]

(4) The vapor collection and transport system employed to carry VOCs to the vapor control system shall be maintained and operated so that it prevents the following: [29 PA Code §129.81(1)(ii)]

(i) A reading equal to or greater than 100% of the lower explosive limit (LEL), measured as propane, at 1 inch (2.5 centimeters) from all points on the perimeter of a potential leak source when measured by the method referenced in §139.14 (relating to emissions of VOCs) during loading operations. [29 PA Code §129.81(1)(ii)(A)]

(ii) Avoidable liquid leaks during loading operations. [29 PA Code §129.81(1)(ii)(B)]

(iii) Visually or audibly detectable leaks in the organic liquid cargo vessel's cargo tanks, hatch covers, storage tanks pressure/vacuum relief valves and associated vapor and liquid lines during loading. [29 PA Code §129.81(1)(ii)(C)]

(5) The pressure and vacuum relief valves on the liquid cargo vessel shall be set to release at no less than 0.7 psig (4.8 kilopascals) of pressure or 0.3 psig (2.1 kilopascals) of vacuum or the highest allowable pressure and vacuum as specified in State or local fire codes, the National Fire Prevention Association guidelines or other National consensus standards acceptable to the Department. [29 PA Code §129.81(1)(iii)]

(6) Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder. [RACT Plan Approval Issued 2/9/16]

(7) Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4 psi or greater [RACT Plan Approval Issued 2/9/16]

(8) VOC Emissions from Point Breeze Marine Barge Loading shall not exceed 25.99 tons per rolling 12-month period [RACT Plan Approval Issued 2/9/16]

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(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitor the temperature of CD011.

(2) All by-pass vent streams shall be equipped with flow indicators and recorders. [AMS Permit Dated May 23, 2001, paragraph 3, AMS Installation Permit No. 94110]

(3) For P636, the Permittee shall provide verification on a monthly basis that operation of the MVCACS is limited to 2500 barrels per hour.

(4) Emission estimation procedures. For sources with emissions less than 10 or 25 tons and sources with emissions of 10 or 25 tons, the Permittee shall calculate an annual estimate of HAP emissions, excluding commodities exempted by 40 CFR 63.560(d), from marine tank vessel loading operations. Emission estimates and emission factors shall be based on test data, or if test data is not available, shall be based on measurement or estimating techniques generally accepted in industry practice for operating conditions at the source. [40 CFR 63.565(l)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Maintain records of all measurements, calculations, and other documentation used to identify commodities exempted under 40 CFR 63.560(d); [40 CFR 63.567(j)(1)]

(2) Keep readily accessible records of the emission estimation calculations performed in 40 CFR 63.565(l) for 5 years; and [40 CFR 63.567(j)(2)]

(3) The Permittee of marine tank vessel loading operations specified in 40 CFR 63.560(a)(3) shall retain records of the emissions estimates determined in 40 CFR 63.565(l) and records of their actual throughputs by commodity, for 5 years. [40 CFR 63.567(j)(4)]

(4) Continuously record the temperature of CD011.

(5) For P636, the Permittee shall retain a schematic diagram of the affected vent stream, collection system, fuel system, combustion devices and any by-pass system that is associated with the MVCACS on site. [AMS Permit Dated May 23, 2001, paragraph 4]

(6) For P636, the Permittee shall keep records on a monthly basis that operation of the MVCACS is limited to 2500 barrels per hour.

(e) Reporting Requirements

(1) If a source that otherwise would not be subject to the emissions standards subsequently increases its HAP emissions calculated on a 24-month annual average basis after September 19, 1997 or subsequently increases its gasoline or crude loading throughput calculated on a 24-month annual average basis after September 19, 1996 such that the source becomes subject to the emissions standards, such source shall be subject to the

notification requirements of 40 CFR 63.9 of subpart A of 40 CFR 63 and the notification requirements of this paragraph. [40 CFR 63.567(b)(1)]

(2) Initial notification for sources with startup before the effective date. The Permittee of a source with initial startup before the effective date shall notify the AMS and EPA in writing that the source is subject to the relevant standard. The notification shall be submitted not later than 365 days after the effective date of the emissions standards and shall provide the following information: [40 CFR 63.567(b)(2)]

(i) The name and address of the Permittee; [40 CFR 63.567(b)(2)(i)]

(ii) The address (i.e., physical location) of the source; [40 CFR 63.567(b)(2)(ii)]

(iii) An identification of this emissions standard that is the basis of the notification and the source's compliance date; [40 CFR 63.567(b)(2)(iii)]

(iv) A brief description of the nature, size, design, and method of operation of the source; [40 CFR 63.567(b)(2)(iv)]

(v) A statement that the source is a major source. [40 CFR 63.567(b)(2)(v)]

(f) Non-Applicable Requirements

(1) The Permittee is not applicable to 25 Pa Code 129.81(4) – Ballasting requirements. The Girard Point Wharf does not receive crude oil or gasoline cargoes.

21. Group 18 – Fluidized Catalytic Cracking Units

Girard Point equipment numbered CD004, and P120. Point Breeze equipment numbered P661 and CD-110 (ESP used by P661).

(a) Emission Limitations

FCCU 868

(1) The Permittee shall not exceed the allowable emission limitations in the following table for P661 - FCCU Unit 868 during normal operation (except during start up and shut down: [AMS Plan Approval IP16-000225, dated 30 April 2018]

		Emission Limitation		
Pollutants	**Concentration**	**Lbs/hr**	**Lbs/day**	**Tons/yr****
Particulate	1 lb/1000 lb coke	25*	600	95
SO_2	25 ppmvd @ 0% O2 on 365-day rolling average, and 50 ppmvd @0% O2 on 7-day rolling average	358	5880	600
CO	500 ppmv	54*	1,300	100
NOx	100 ppmdv @0%O_2 on a 7-	221	5,304	130.2

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	day rolling average			
HC	N/A	5	123	23

* The 25 lbs/hr Particulate emission limit in this condition comes from Plan Approval No. 00184 and does not apply during start-up and shut-down. The 54 lbs/hr Carbon Monoxide emission limit in this condition comes from Plan Approval No. 00184 and does not apply during start-up, shut-down, and hot standby. The other emission limits in this condition apply at all times. The Particulate Matter emission limit in Condition 6 applies at all times. The Permittee shall comply with Condition 8 during start-up, shut-down, and hot standby as a surrogate for Carbon Monoxide (concept borrowed from 40 CFR 63.1565(a)(5)(ii)).

** Tons per year shall be calculated on the calendar and the daily rolling average

NOTE: [Plan Approval No. 00184 dated March 22, 2003. This streamlined permit condition assures compliance with Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H, SO2 Operating Permit No. SO2-95-039, NSPS Subpart J, MACT Subpart UUU, AMS Approval letter dated November 22, 1999 (Item 3) and Case-by-Case RACT Plan Approval February 9, 2016]

(2) The Permittee shall not exceed the allowable emission limitations below for P661 - FCCU Unit 868 at all times including start up and shut down:

(i) Particular matter emissions shall not exceed forty (40) pounds per hour [AMS II, Section VII, AMS Plan Approval IP16-000225, dated 30 April 2018]

(ii) Carbon Monoxide emissions shall not exceed the following:

(A) One percent (1%) by volume. [AMS Plan Approval 00184, dated March 22, 2002]

(B) 100 ppm vd at 0% O_2 on a 365-day rolling average basis. [Consent Decree Order 05-02866, on March 21, 2006, AMS Plan Approval IP16-000225, dated 30 April 2018]

(iii) Ammonia emissions shall not exceed 16.6 tons per rolling 12-month period. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(iv) Ammonia slip may not exceed 5.55 lb/hr. [AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(3) The Permittee shall not exceed limit of the following tables for P120 - FCCU Unit 1232 [AMS Plan Approval No. 04322, February 28, 2006, AMS Plan Approval 11353 dated 7/30/12, Consent Decree Order 05-CV-2866]

Concentration and Emissions		
Pollutant	***Long Term***	***Short Term***
Filterable PM/PM_{10} [a]	0.30 lb/1000 lb coke burn-off, 365-day rolling avg [b]	0.50 lb/1000 lb coke burn-off, 3-run avg
Total PM_{10} [a]		0.014 gr/dscf [d] @ 3% O2, 3 run avg

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Deleted: NOTE: [Plan Approval No. 00184 dated March 22, 2003. This streamlined permit condition assures compliance with Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H, SO2 Operating Permit No. SO2-95-039, NSPS Subpart J, AMS Approval letter dated November 22, 1999 (Item 3)]¶

Deleted: (ii) Sulfur Oxide emissions shall not exceed [Consent Decree Order 05-02866, on March 21, 2006]¶ 125 ppmvd SO_2 at 0% O_2 on a 365-day rolling average basis¶ Beginning January 1, 2016, SO2 emission shall not exceed ¶ 25 ppmvd @ 0% O2 on 365-day rolling average¶ 50 ppmvd @ 0% O2 on 7-day rolling average¶

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SO_2 (when CO boiler burn fuel gas with H_2S>0.1 gr/dscf		20 ppmdv @ 0% O2, 3 run rolling avg
SO_2	10 ppmdv @ 0% O2, 365-day rolling avg [c,d,f]	18 ppmdv @ 0% O2, 7-day rolling avg [c,f]
CO	100 ppmdv @ 0% O2, 365-day rolling avg [c,d]	500 ppmdv @ 0% O2, 1-hour avg
NOx	10 ppmdv @ 0% O2, 365-day rolling avg [c,e]	30 ppmdv @ 0% O2, 7-day rolling avg [c,e]

Where:

a. Filterable PM/ PM_{10} emissions per coke burn-off limits are for filterable particulate only, as measured by Method 5B.
b. Total PM/ PM_{10} emission limits include filterable particulate, as measured by Method 5B, and condensable particulate, as measured by Method 202.
c. Limits based on a 7-day or 365-day rolling average include only operating days.
d. PM, CO, and SO_2 concentration limits assure compliance with 40 CFR §§ 60.102(a)(1), 60.103, and 60.104(b)(1), 25 Pa Code §§ 123.13(b) & 123.21(b), AMR II Section VII, and AMR VIII Section II.
e. Consent Decree Order 05-CV-2866. Emission during periods of startup, shutdown, or malfunction shall not be used in determining compliance with the 7-day emission limit.
f. Consent Decree Order 05-CV-2866. SO2 emission from the Wet Gas Scrubber (WGS) Emission during periods of startup, shutdown, or malfunction shall not be used in determining compliance with the 7-day emission limit.

Emission Limits			
Pollutants	***Lbs/hr***	***Lbs/day***	***Tons/yr*** [a]
Total PM/ PM_{10} [b]	40.0	960.0	175.2
SO_2	663	15,980	362.72
CO	723	17,369	633.77
NOx	378	9,073	208.28
VOC	1.88	45.12	8.24
H_2SO_4 [c]	37.98	911.52	166.35
NH_3 [d]	4.39	105.36	19.23

Where:

a. NOx, SO_2, and CO tons per year shall be calculated on a rolling 365-day basis. PM/ PM_{10}, VOC, H_2SO_4, and NH_3 tons per year shall be calculated on a rolling 365-day basis based on AMS approved stack test results, daily process, and coke burn rate.
b. Total PM/ PM_{10} emission limits include filterable particulate, as measured by Method 5B, and condensable particulate, as measured by Method 202.
c. H_2SO_4 emission limits based on a nominal flue gas concentration of 7.5 ppmvd @ 0% O_2.
d. NH_3 emission limits based on a nominal flue gas concentration of 5 ppmvd @ 0% O_2.

(4) CD004 (the CO Boiler at the 1232 FCCU) shall not exceed 500 ppmvd SO_2 at any time. [SO2 Operating Permit No. SO2-95-039]

(5) When the Carbon Monoxide (CO) Boiler is not in operation, the Permittee shall operate the FCCU # 1232 with a CO promoter to maintain the CO concentration below 1% by volume of the exhaust gas. [AMR VIII, Section II]

(6) For CO and inorganic HAP emissions during startup, shutdown and hot standby, the following control device parameters will be used to comply with the inorganic HAP work practice standards specified in 40 CFR Part 63.1565(a)(5):

a. CO emissions from the catalyst regenerator vent or CO Boiler must not exceed 500 ppmv (dry basis); or

b. Maintain the oxygen (O2) concentration in the exhaust gas from the catalyst regenerator at or above 1 volume percent (dry basis).

(b) Work Practice Standards

FCCU 868

(1) FCCU Unit 868 shall not process more than 47,500 barrels per day (calculated on a 365-day rolling average basis). The FCCU may not process more than 50,000 barrels in any given day. [Plan Approval No. 00184 dated March 22, 2002 (Item 12)]

(2) For FCCU Unit 868, the Permittee shall follow good combustion practices controlling the level of excess oxygen and CO promoter in the regenerator to minimize NOx emissions from the regenerator. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H]

(3) The daily average ambient air rate to the FCCU Unit 868 regenerator shall not exceed 5.501 MMscfh. Plan Approval No. 00184 dated March 22, 2002]

(4) The FCCU Unit 868 shall be equipped with an automatic controls system to divert the feed when: [AMS Plan Approval 00184, dated March 22, 2002]

(i) The air blower is not in operation,

(ii) The feed rate falls below 18,000 bbls per day, or

(iii) The reactor temperature drops below 850 °F.

(5) The Permittee shall maintain the inlet velocity to the primary internal cyclones of the catalytic cracking unit catalyst regenerator at or above 20 feet per second (hourly average) during startup and shutdown. [AMS Plan Approval IP16-000225 Dated 30 April 2018]

(6) The Permittee shall control and monitor the catalyst bed level in FCCU 868 to prevent high catalyst levels and to reduce excessive catalyst losses [AMS Plan Approval 00184, dated March 22, 2002].

(7) The Permittee shall operate the FCCU 868 in accordance with the Quality Improvement Program submitted to AMS on September 15, 2001. [AMS Plan Approval 00184, dated March 22, 2002]

(8) The Permittee shall maintain the hourly average oxygen (O2) concentration in the exhaust gas from the 868 FCCU catalyst regenerator at or above 1 volume percent (dry basis) during start-up, shut-down, and hot standby. [AMS Plan Approval IP16-000225, dated 30 April 2018]

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(10) PES shall prepare an operation, maintenance, and monitoring plan according to the requirements in 40 CFR 63.1574(f) and operate at all times according to the procedures in the plan. [40 CFR 63.1564(a)(3) & 63.1565(a)(3), AMS Plan Approval IP16-000225, dated 30 April 2018]

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FCCU 1232

(11) The maximum allowable feed rate shall be limited 90,000 barrels per day calculated on a rolling 365-day average and 100,000 barrels per any single day. [AMS Plan Approval No.04322, February 28, 2006]

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(12) The CD004 (CO Boiler at the 1232 FCCU) shall only burn refinery fuel gas or natural gas as auxiliary fuel [AMS Plan Approval 04322, dated February 28, 2006]

(13) The CO Boiler shall comply with 40 CFR Part 60, Subpart J. Compliance shall be demonstrated by continuously monitoring that either the concentration of H2S in the fuel gas does not exceed 0.1 gr/dscf or that the concentration of SO2 in the exhaust gas of the scrubber does not exceed 20 ppm (dry basis, zero percent air) on a 3-hour average [40 CFR §§ 60.104(a)(1), 60.105(a)(3)(ii), 60.105(a)(4), AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(14) The CO Boiler shall comply with the NO_x requirements of 25 Pa Code §§129.201-204. For this regulation, allowable emissions for the period from May 1 through September 30 of each year shall be calculated using an emission rate of 0.17 lbs NO_x/MMBTU. Actual and allowable emission calculations for this regulation shall follow the AMS-approved implementation plan [AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

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(15) In accordance with 25 PA Code § 129.55(d), the purging of VOCs during a unit turnaround shall be performed in a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the initial pressure in such equipment reaches 19.7 psia [AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

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(16) The Permittee shall, for the Wet Gas Scrubber (WGS) system, establish operating ranges for the pressure of water supplied, the flue gas pressure drop and a minimum pH during the performance test [AMS Plan Approval 04322, dated February 28, 2006].

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(17) The Unit 1232 FCCU shall be equipped with continuous monitors and recorders for stack flow rate, NOx, SO2, CO, and O2 at the outlet of the WGS for compliance determination with the above limitations. The continuous monitors must conform to USEPA performance specifications in 40 CFR §§ 60.11, 60.13, 60.105, and Part 60 Appendices A, B, and F, and the PA DEP Continuous Source Monitoring Manual Rev. No. 7, September 2003 (PA CSMM). [AMS Plan Approval 04322, dated February 28, 2006].

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(18) The Permittee shall prepare and implement an operation, maintenance, and monitoring plan for the 1232 FCCU, control systems, and monitoring systems

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as per 40 CFR § 63.1574(f) [AMS Plan Approval 04322, dated February 28, 2006].

(19) The 1232 FCCU shall vent to the CO Boiler when operating in partial-burn mode and shall follow good combustion practices. [AMS RACT Plan Approval, dated 9 February 2016]

(c) Testing Requirements

[25 PA Code §139]

(1) The continuous emission monitors must conform to USEPA performance specifications in 40 CFR Part 60, Appendix B and PA DEP Continuous Sources Monitoring Manual [AMS Plan Approval 00184, dated March 22, 2002]

(2) Upon AMS request, the Permittee shall conduct performance tests on the 1232 and submit a test report to AMS to determine compliance with the emission standards for Total and Filterable Particulate/PM10, VOC, H2SO4, and Ammonia (outlet of WGS) and to determine emissions of Air Management Regulation VI Heavy Metals. [AMS Plan Approval 11353 dated 7/30/12].

(i) The Permittee shall conduct performance test for Total and Filterable Particulate/PM10, H2SO4, and Ammonia at least once every 12 months and furnish a written report to the results of each test to AMS.

(A) The Permittee may petition AMS to reduce the frequency of H2SO4 and Ammonia testing to every 5 years if sufficient test results show emissions in pounds per hour are less than one-half of the emission limit.

(ii) The Permittee shall conduct performance test every 5 years for VOC, and if requested by AMS for Heavy Metals.

(iii) The test protocol shall be submitted to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(iv) Testing shall meet the requirements of 40 CFR Part 60, Subpart J and 40 CFR Part 63, Subpart UUU for determining compliance with any limits from these regulations and the PA Stack Testing Manual.

(v) The 1232 FCCU process rate during testing shall be at a minimum of 95% of the highest daily process rate achieved by the unit since re-starting.

(3) The permittee shall conduct a performance test at the 868 FCCU and 1232 FCCU exhaust stacks to establish emission factors and demonstrate compliance with ammonia slip requirements.

(i) NH3 emissions shall be determined using the average of 3 one-hour tests per the EPA Reference Method CTM 027 or ASTM Method D6348-03.

(ii) The performance test shall be conducted no later than 90 days after start-up.

(iii) The permittee shall submit a stack test protocol to Air Management Services at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing.

(iv) If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, the

Deleted: Ammonia Slip (after SCR but before WGS) shall be calculated and recorded continuously using the following equations: [AMS Plan Approval 04322, dated February 28, 2006].¶

. . NH_3 slip, ppmdv = [a-b*(c*d)/1E6]*1E6/b¶

. . Where:¶

. . a = NH_3 injection rate = (lbs/hr)/(17 lbs/lb-mol)¶

. . b = dry flow rate through SCR = (dscf/hr)/(dscf/lb-mol)¶

. . c = change in measured NO_x across SCR = (delta ppmdv @ 0% O_2) ¶

. . d = correction factor to be determined during performance test¶

(20)

Permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates.

(v) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, PES must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher rate.

(vi) The 19% ammonia solution injection rate may not exceed a rate established under an AMS approved stack test that assures the ammonia slip level is not exceeded. The initial maximum rate shall be 7 gallons/hr until a different rate is established and approved by AMS. The ammonia slip rate (lb/hr) is expected to vary with injection rate. Therefore, compliance with the 12-month rolling ammonia limit will be based upon source test results and a method approved by AMS.

(vii) If no NH3 is being added, NH3 emissions are assumed to be negligible.

(4) The following methods shall be used to demonstrate compliance:

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(i) Modified Method 8 shall be used to demonstrate compliance with H2SO4 limits.

(ii) Method 25A shall be used to demonstrate compliance with VOC limits.

(iii) Method 5B and 202 shall be used to demonstrate compliance with PM emission limits

(iv) Method 7E shall be used to demonstrate compliance with the NOx limits.

(v) Method 6C shall be used to demonstrate compliance with the SO2 limits.

(5) The Permittee shall conduct a periodic performance test for PM or Ni for each catalytic cracking unit at least once every 5 years according to the requirements in Table 4 of 40 CFR Subpart UUU [40 CFR 63.1571(a)(5), 40 CFR Subpart UUU]

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(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

FCCU 868

(1) The FCCU Unit 868 shall be equipped with continuous monitors and recorders for stack flow rate, NOx (including NO2), SO_2, CO, and Opacity for compliance determination with the emission limitations [AMS Plan Approval No. 00184, dated March 22, 2002]

(i) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

(2) The Permittee shall install instrument to continuously monitor O2 level in the regenerator exhaust for correcting the data for excess air. [AMS Plan Approval IP16-000225, dated 30 April 2018]

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(3) For FCCU 868, the Permittee shall demonstrate compliance with the SO_2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 25 PA Code Chapter 139 procedures. [Permit No. SO2-95-039]

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(4) For FCCU 868, the Permittee shall monitor the process rate on a daily basis. [Permit No. SO2-95-039]

(5) The Permittee shall monitor ammonia emissions on a monthly basis to demonstrate compliance with ammonia emission limits in Condition 21(a)(2)(iii). The compliance demonstration shall be based on AMS-approved stack tests. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(6) The Permittee shall monitor daily ammonia usage, and continuously monitor the ammonia injection rate to ensure compliance with ammonia slip and emissions requirements as described in 21.(a)(2)(iii) and 21.(a)(2)(iv). [AMS Plan Approval IP16-000225, dated 30 April 2018]

(7) The Permittee shall continuously monitor the inlet velocity to the primary cyclones of the catalytic cracking unit catalyst regenerator during periods of start-up, shut-down and hot standby for the 868 FCCU. [AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(8) The Permittee shall monitor the daily feed rate for Unit 1232 FCC (in relation to P120, the FCC regenerator).

(9) The Permittee shall daily monitor FCCU emissions for SO_2, CO, NOx, Particulate/PM_{10}, VOC, H_2SO_4, and Ammonia

(i) SO2 emission shall be monitored on a 7-day rolling average to demonstrate compliance with the SO_2 emission limits. [40 CFR 60.107(b)(4), AMS Plan Approval 11353, dated 7/30/12]

(10) The Permittee shall monitor the daily process rate of the FCCU and ammonia slip [AMS Plan Approval 11353, dated 7/30/12].

(11) The Wet Gas Scrubber (WGS) System shall continuously monitor the pressure of the water supplied at the discharge of the recirculation pumps supplying water to the EDV-6000 Agglo-Filtering modules, and the flue gas pressure drop across the Agglo-Filtering modules in accordance with the alternative monitoring method for opacity approved by EPA and as established during the most recent performance test [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].

(12) The Permittee shall daily monitor the type of scrubbing liquid and average pH of the scrubbing liquid at the outlet, as established during the performance test [AMS Plan Approval 04322, dated February 28, 2006].

(13) The Permittee shall monitor the following parameter to assure compliance parameter ranges established with the most recent AMS approved stack test. [AMS Plan Approval 11353, dated 7/30/12].

(i) AFM Recycle Pump Pressure shall be monitored and recorded continuously

(ii) WGS Flue Gas Delta P across the AFM section shall be monitored and recorded continuously

(iii) pH of scrubbing liquid shall be monitored and recorded continuously

(iv) Upper Agglo Pressure shall be monitored and recorded manually on a monthly basis.

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(14) The Permittee shall install and monitor an instrument to continuously monitor and record stack flow, NOx, SO_2, CO, and O2 in accordance with PA Continuous Source Monitoring Manual. [AMS Plan Approval 11353, dated 7/30/12].

(i) Moisture shall be calculated based on AMS approved levels based on historical data.

(ii) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

(15) For CD004 (the CO Boiler at the 1232 FCCU), CO emissions shall be monitored using a continuous emission monitoring system (CEMS).

(16) Continuous emission monitoring system (CEMS) of CD004 (CO Boiler) shall monitor either the concentration of H_2S in the fuel gas does not exceed 0.1 gr/dscf or that the concentration of SO_2 in the exhaust gas of the scrubber does not exceed 20 ppm (dry basis, zero percent air) on a 3-hour average. [AMS Plan Approval 04322, dated February 23, 2006]

(17) The Permittee shall monitor average coke burn-off rate and hours of operation daily. The average coke burn-off shall be calculated using Equation 1 in 40 CFR 63.1564 (as follows) and hours of operation for the catalyst regenerator. [AMS Plan Approval 11353, dated 7/30/12].

$$R_c = K_1 Q_r (\%\, CO_2 + \%\, CO) + K_2 Q_a - K_3 Q_r \left(\%\, CO_2 + \frac{\%\, CO}{2} + \%O_2\right) + K_3 Q_{oxy} (\%O_{xy})$$

Where:

R_c = Coke burn-off rate, kg/hr (lb/hr)

Q_r = Volumetric flow rate of exhaust gas from catalyst regenerator before adding air or gas streams.

Q_a = Volumetric flow rate of air to catalytic cracking unit catalyst regenerator, as determined form instruments in the catalytic cracking unit control room, dscm/min (dscf/min)

% CO_2 = Carbon dioxide concentration in regenerator exhaust, percent by volume (dry basis)

% CO = Carbon monoxide concentration in regenerator exhaust, percent by volume (dry basis)

% O_2 = Oxygen concentration in regenerator exhaust, percent by volume (dry basis)

K_1 = Material balance and conversion factor, 0.2982 (kg-min)/hr-dscm-%) (0.0186 (lb-min)/(hr-dscf-%))

K_2 = Material balance and conversion factor, 2.088(kg-min)/hr-dscm-%) (0.1303 (lb-min)/(hr-dscf-%))

K_3 = Material balance and conversion factor, 0.0994 (kg-min)/hr-dscm-%) (0.0062 (lb-min)/(hr-dscf-%))

Q_{oxy} = Volumetric flow rate of oxygen-enriched air stream to regenerator, as determined form instruments in the catalytic cracking unit control room, dscm/min (dscf/min)

$\%O_{xy}$ = Oxygen concentration in oxygen-enriched air stream, percent by volume (dry basis)

(18) The Permittee shall monitor and calculate PM emission using Equation 2 in 40 CFR 63.1564

$$E = (K \times C_s \times Q_{sd}) / R_c$$

Where:

E = Emission rate of PM, kg/1,000 kg (lb/1,000 lb) of coke burn-off;

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C_s = Concentration of PM, g/dscm (lb/dscf);
Q_{sd} = Volumetric flow rate of the catalytic cracking unit catalyst regenerator flue gas as measured by Method 2 in appendix A to 40 CFR Part 60, dscm/hr (dscf/hr);
R_c = Coke burn-off rate, kg coke/hr (1,000 lb coke/hr); and
K = Conversion factor, 1.0 (kg^2 /g)/(1,000 kg) (1,000 lb/(1,000 lb)).

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

FCCU 868

(1) For FCCU 868, the Permittee shall record the process rate on a daily basis. [Permit No. SO2-95-039]

(2) The Permittee shall keep records demonstrating compliance with the emission limits for FCCU 868. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(i) Compliance with ammonia, PM, and HC limits shall be based on AMS-approved stack tests.

(ii) Compliance with SO2, CO, and NOx limits shall be based on CEMS and continuous flow monitor data. Records shall be in the same units and averaging periods as the emission limits.

(3) The Permittee shall keep continuous records of ammonia injection rates, and shall keep monthly records of ammonia emissions to demonstrate compliance with rolling 12-month ammonia emission limit. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(4) The Permittee shall keep ammonia stack test records. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(5) The Permittee shall keep continuous emission records for O2 level in the regenerator exhaust. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(6) The Permittee shall keep continuous records of the inlet velocity to the primary cyclones of the catalytic cracking unit catalyst regenerator during periods of start-up, shut-down and hot standby for the 868 FCCU. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(7) The Permittee shall keep records of all periods of start-up, shut-down, and hot standby for the 868 FCCU. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(8) All records shall be kept for a minimum period of 5 years and produced upon request by AMS. [AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(9) The Permittee shall record the following: [AMS Plan Approval 11353, dated 7/30/12]

(i) The NOx, CO, and SO2 concentrations and the rolling 365-day emission limits shall be calculated based on 0% O2 and stack flow on a part per million (ppm) basis, hourly basis in lbs/hr, daily basis in lbs/day, and a rolling 12-month basis calculated monthly in tons per year (tpy).

(ii) PM/PM-10, H2SO4, VOC, and Ammonia shall keep record of stack test.

(iii) PM/PM-10, H2SO4, VOC, and Ammonia shall be determined based on approved stack test, daily records of average coke burn-off rate for the

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FCCU using Equation 1 in 40 CFR 63.1564 and the hours of operation for the catalyst regenerator.

(10) The FCCU process rate daily and on a 365-day rolling average, calculated daily [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].

(11) The Permittee shall record the following parameter to assure compliance parameter ranges established with the most recent AMS approved stack test. [AMS Plan Approval 11353, dated 7/30/12].

(i) AFM Recycle Pump Pressure shall be monitored and record continuously

(ii) WGS Flue Gas Delta P across the ASM section shall be monitored and record continuously

(iii) pH of scrubbing liquid shall be monitored and record continuously

(iv) Upper Agglo Pressure shall be monitored and record manually on a monthly basis.

(12) The Permittee shall record the average coke burn-off rate and hours of operation daily. The average coke burn-off shall be calculated using Equation 1 in 40 CFR 63.1564 and hours of operation for the catalyst regenerator. [AMS Plan Approval 11353, dated 7/30/12].

(13) Ammonia Slip (after SCR but before WGS) shall be continuously recorded calculated in accordance with Section 21(b)(19) [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].].

(14) The Permittee shall keep records of the CO CEMS for CD04 (CO Boiler).

(f) Reporting Requirements

(1) The Permittee shall submit CEM and production reports for each FCCU to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

(2) The Permittee shall demonstrate continuous compliance by operating and maintaining records to document conformance with the procedures in the OMMP [40 CFR 63.1564(c)(2)].

(3) The Permittee shall submit *(semi-annually)* reports of excess emission in accordance with 40 CFR 60.7(c) determined as follows. [40 CFR 60.105(e)]

(i) Carbon monoxide: All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system exceeds 500 ppm.

(ii) All averages shall be determined as the arithmetic average of the applicable 1-hour averages.

(4) The Permittee shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 107(g)]

(5) For 1232 FCCU, CEM reports must meet the requirements of PA CSMM. The reports must also list any periods when the CO Boiler burns fuel gas with H2S content greater than 0.1 gr/dscf [AMS Plan Approval 04322, dated February 28, 2006]

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<#>The Permittee shall demonstrate initial compliance by submitting the your OMMP to Airt Management Services as part of theyour Notification of Compliance Status. [40 CFR 63.1564(b)(6)].]¶

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(6) The Permittee shall keep records and submit reports in accordance with 40 CFR §60.107 and 40 CFR §63, Subpart UUU [AMS Plan Approval 04322, dated February 28, 2006].

(7) Whenever the CO Boiler is not in operation, the Permittee shall forward to AMS on a weekly basis all hourly averages of CO which exceed 1% by volume of exhaust gases. Reports shall be in accordance with the format and procedures contained in the PA DEP Continuous Source Monitoring Manual. [25 Pa. Code §127.511 & AMR I Sec. II]

22. Group 19 - Inter-Refinery Pipeline Equipment

Point Breeze equipment numbered P-664

(a) Emission Limitations

(1) VOC emission increase due to the operation of the Inter-Refinery Pipeline Project shall not exceed 12 tons per rolling 12-month period. Compliance with this limit is assured by maintaining an LDAR program. [AMS Installation Permit No. 94055 dated 5/9/94]

(b) Work Practice Standards

(1) The Permittee shall utilize an LDAR program as described for Group 06, Section D.7.(a).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Same requirements as Group 06, Section D.7(c).

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Same requirements as Group 06, Section D.7(d).

23. Group 20 – Alkylation

Girard Point equipment numbered P182 and CD014 (Flare for P182). Point Breeze equipment numbered P662, CD111 (Flare for P662) and CD112 (Flare for P662).

(a) Emission Limitations

(1) VOC emission from the 869 Alkylation plant (P662) shall not exceed 15.44 tons per rolling 12-month period [AMS Plan Approval 03163, dated 2/5/04].

(b) Work Practice Standards

(1) For P182, SHU catalyst treatment gas shall be routed to a flare that conforms with HAP control requirements under 40 CFR 63.11(b). [Plan Approval Nos. 99128 and 99093, paragraph 3, dated January 28, 2000, Plan Approval 03124, dated January 14, 2004]

(2) For P182, Unit 433 alkylate production shall be limited to 30,000 barrels per day on a rolling 365 day average. [AMS Plan Approval Nos. 06050, dated 12/4/06]

(3) For P662, Unit 869 Alkylation plant Olefin feed shall not exceed 8,500 barrels per stream day and 2,737,500 barrels in any 12-month rolling period [AMS Plan Approval JP17-000086 Dated 17 October 2017].

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(4) For 869 Alkylation Unit P662 - If the alternative is not done as per 40 CFR 60.693-1 then the following standards for individual drain systems shall take place:

(i) Each drain shall be equipped with water seal controls. [40 CFR 60.692-2(a)(1)]

(ii) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls. [40 CFR 60.692-2(a)(2)]

(iii) Except as provided in 40 CFR 60.692-2(a)(4), each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions. [40 CFR 60.692-2(a)(3)]

(iv) As an alternative to the requirements in 40 CFR 60.692-2(a)(3), if the Permittee elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed. [40 CFR 60.692-2(a)(4)]

(v) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(a)(5)]

(vi) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter. [40 CFR 60.692-2(b)(1)]

(vii) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. [40 CFR 60.692-2(b)(2)]

(viii) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge. [40 CFR 60.692-2(b)(3)]

(ix) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(b)(4)]

(x) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.692-2(c)(1)]

(xi) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.692-2(c)(2)]

(xii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(c)(3)]

Moved down [5]: <#>For 869 Alkylation Unit P662 - Individual Drain System Requirements [40 CFR 60 Subpart QQQ]¶
<#>(i) The Permittee may elect to construct and operate a completely closed drain system. [40 CFR 60.693-1(a)]¶
<#>(ii) Each completely closed drain system shall be equipped and operated with a closed vent system and control device (flare). [40 CFR 60.693-1(b)]¶
<#>(iii) The Permittee must notify the EPA Administrator and AMS in the report required in 40 CFR 60.7 that they have elected to construct and operate a completely closed drain system. [40 CFR 60.693-1(c)]¶
<#>(iv) If the Permittee elects to comply with the provisions of section 40 CFR 60.693-1, then they do not need to comply with the provisions of 40 CFR 60.692-2 or 40 CFR 60.694. [40 CFR 60.693-1(d)]¶

(xiii) Except as provided in 40 CFR 60.692-2(e), each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section. [40 CFR 60.692-2(d)]

(xiv) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin. [40 CFR 60.692-2(e)]

(5) For 869 Alkylation Unit P662 - Access doors and other openings

(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions. [40 CFR 60.693-2(a)(5)(i)]

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-2(a)(5)(ii)]

(iii) The Permittee must notify the EPA Administrator and AMS in the report required by 40 CFR 60.7 that they have elected to construct and operate a floating roof. [40 CFR 60.693-2(b). This permit condition assures compliance with 25 Pa Code 129.55(a)(2)]

(iv) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of 40 CFR 60.692-3(a) shall be installed. [40 CFR 60.693-2(c). This permit condition assures compliance with 25 Pa Code 129.55(a)(1)]

(v) Except as provided in 40 CFR 60.693-2(c), if a Permittee elects to comply with the provisions of 40 CFR 60.693-2, then the Permittee does not need to comply with the provisions of 40 CFR 60.692-3 or 40 CFR 60.694 applicable to the same facilities. [40 CFR 60.693-2(d)]

(vi) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA Administrator and AMS which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]

(6) Flare requirements. (see Group 03)

(9) Gas components routed to a flare shall go to a flare that conforms to HAP control requirements under 40 CFR §63.11(b)

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:]

Deleted: <#>For 869 Alkylation Unit P662 - Sewer Lines.¶
<#>(i) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.693-1(e)(1)]¶
<#>(ii) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.693-1(e)(2)]¶
<#>(iii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-1(e)(3)]¶

(1) The Permittee shall monitor VOC emissions from 869 Alkylation plant.
(2) The Permittee shall monitor daily and rolling 12-month 869 Alkylation plant olefin feed rate calculated monthly.
(3) Monitoring is required for the flare - see Group 3, Section D.4.(d).
(4) The Permittee shall monitor daily that for P182, Unit 433 alkylate production is limited to 30,000 barrels per day on a rolling 365 day average.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) For P662, Unit 869, VOC emission calculations to show compliance with Group 20, Section D.23.(a)(1) [AMS Plan Approval 03163, dated 2/5/04].
(2) For P662, Unit 869, Daily Olefin feed rate and rolling 12-month feed rate calculated monthly to demonstrate compliance with Group 20, Section D.23.(b)(3) [AMS Plan Approval 03163, dated 2/5/04].
(3) For P182, Unit 433 alkylate, record the production rate daily and on a 365-day rolling average, calculated daily. [AMS Plan Approval 06050].
(4) The Permittee shall record daily that for P182, Unit 433 alkylate production is limited to 30,000 barrels per day on a rolling 365 day average. [AMS Plan Approval 06050 dated 12/4/2006]

~~24. Group 21 – Hydrogen purification equipment~~

~~Point Breeze equipment numbered P674.~~

~~(a) Work Practice Standards~~

~~(1) Same requirements as for Group 06, Section D.7(a). [25 PA Code §129.58 (a)(2)]~~

~~(2) Pumps and compressors. All pumps and compressors handling volatile organic compounds with a vapor pressure of greater than 1.5 psi (10.3 kilopascals) at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100°F (37.8°C) shall be used. [AMS letter dated 4/14/94; 25 PA Code §129.55(b)]~~

~~(b) Testing Requirements~~

~~[25 PA Code §139]~~

~~(1) Same requirements as for Group 06, Section D.7(b). [25 PA Code §139.14(b)(4)]~~

~~(2) Compressors in hydrogen service are exempt from the requirements of 40 CFR 60.592 if the Permittee demonstrates that a compressor is in hydrogen service. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(1)]~~

~~(3) Each compressor is presumed not to be in hydrogen service unless the Permittee demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in~~

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(5) For completely closed drain systems subject to 40 CFR 60.693-1, the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions. [40 CFR 60.697(d)]¶
(6) Delay of Repair¶
(i) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded. [40 CFR 60.697(e)(1)]¶
(ii) The reason for the delay shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time. [40 CFR 60.697(e)(2)]¶
(iii) The signature of the Permittee (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded. [40 CFR 60.697(e)(3)]¶
(iv) The date of successful repair or corrective action shall be recorded. [40 CFR 60.697(e)(4)]¶
(6) A copy of the design specifications for all applicable equipment shall be kept for the life of the source in a readily accessible location. [40 CFR 60.697(f)(1)]¶
(7) The following information pertaining to the design specifications shall be kept. [40 CFR 60.697(f)(2)]¶
(i) Detailed schematics, and piping and instrumentation diagrams. [40 CFR 60.697(f)(2)(i)]¶
(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.697(f)(2)(ii)]¶
(8) If the Permittee elects to install a tightly sealed cap or plug over a drain that is out of active service, the Permittee shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains. [40 CFR 60.697(g)]¶

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(e) Reporting Requirements

Deleted: (1) The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]¶
(2) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]¶
(3) If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]¶ ... [38]

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~~ASTM E-260, E-168, or E-169 shall be used. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(2)]~~

~~(4) The Permittee may use engineering judgment rather than procedures in 40 CFR 60.593(b)(2) to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When the Permittee and the EPA Administrator or AMS do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph 40 CFR 60.593(b)(2) shall be used to resolve the disagreement. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(3)]~~

~~(c) Monitoring Requirements~~

~~[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]~~

~~The Permittee shall monitor the following:~~

~~(1) Same requirements as Group 06, Section D.7(c). [25 PA Code §129.58(g)]~~

~~(2) Monitor equipment with the hydrogen purification unit. [AMS letter dated 4/14/94]~~

~~(d) Recordkeeping Requirements~~

~~[25 PA Code §§127.511, 135.21, 135.5 & 139]~~

~~The Permittee shall keep the following records:~~

~~(1) Same as Group 06, Section D.7(d). [25 PA Code §129.58(g)]~~

~~(2) Record equipment with the hydrogen purification unit. [AMS letter dated 4/14/94]~~

~~(e) Reporting Requirements~~

~~(1) Same requirements as for Group 06, Section D.7(e). [25 PA Code §129.58(g)]~~

~~(f) Non-Applicable requirements~~

~~(1) The Permittee is not applicable to the regulations for wastewater separators in 25 Pa Code 129.55(a)(1) and (a)(2) or vacuum producing systems in 25 Pa Code 129.55.~~

Commented [A29]: Remove this section, as Hydrogen Purification Process is no longer in service.

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25. Group 22 – Degreasing Vats

Girard Point equipment numbered P108 (PB Fab/Machine Shop small parts degreasers)

(a) Emissions

(1) VOC emissions from each part cleaner/cold cleaning machine shall not exceed 2.7 tons per rolling 12-month basis. [Installation Permit No. 12070-12071, dated May 21, 2012].

(b) Work Practice Standards

(1) No solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, may be used as a cleaning and/or drying agent in any degreaser. [Exempt from 40 CFR §63.460]

(2) The Permittee shall not use any solvent subject to the Federal National emissions standards for hazardous air pollutants (NESHAP) for halogenated solvent cleaners under 40 CFR Part 63 (relating to National emissions standards for hazardous air pollutants for source categories). [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(3) Cold cleaning degreasers which have a degreaser opening which is greater than 10 square feet shall be equipped with:

(i) A cover to prevent evaporation of solvent during periods of non-use. [25 PA Code 129.63(a)(1)(i)]

(ii) Equipment for draining cleaned parts. [25 PA Code 129.63(a)(1)(ii)]

(iii) A permanent, conspicuous label summarizing the operating requirements. [25 PA Code 129.63(a)(1)(iii)]

(4) Be operated in accordance with the following requirements:

(i) Do not dispose of waste solvent or transfer it to another party, such that greater than 20% for the waste solvent (by weight) can evaporate into the atmosphere; store waste solvent only in covered containers. [25 PA Code129.63(a)(2)(i)]

(ii) Close degreaser cover whenever not handling parts in the cleaner. [25 PA Code 129.63(a)(2)(ii)]

(iii) Drain cleaned parts for at least 15 seconds or until dripping ceases. [25 PA Code 129.63(a)(2)(iii)]

(5) Each parts cleaner/cold cleaning machine shall: [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(i) Immersion cold cleaning machines shall have a freeboard ratio of 0.50 or greater [25PA Code 129.63(a)(1)]

(ii)Immersion cold cleaning machines and remote reservoir cold cleaning machines shall have a permanent, conspicuous label summarizing the operating requirements in Section D.25(5)(iv). In addition, the label shall include the following discretionary good operating practices: [25PA Code 129.63(a)(2)(i)]

(A)Cleaned parts should be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts should be positioned so that solvent drains directly back to the cold cleaning machine.

(B)When a pump-agitated solvent bath is used, the agitator should be operated to produce a rolling motion of the solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned.

(C)Work area fans should be located and positioned so that they do not blow across the opening of the degreaser unit.

(iii)Be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage

reservoir, a perforates drain with a diameter of not more than 6 inches shall constitute an acceptable cover. [25PA Code 129.63(a)(2)(ii)]

(iv) Cold Cleaning Machines shall be operated in accordance with the following procedures: [25PA Code 129.63(a)(3)]

(A) Waste solvent shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(B) Flushing of parts using a flexible hose or other flushing device shall be performed only within the cold cleaning machines. The solvent spray shall be a solid fluid stream, not a atomized or shower spray.

(C) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the cold cleaning machine.

(D) Air agitated solvent baths may not be used.

(E) Spills during solvent transfer and use of the cold cleaning machine shall be cleaned up immediately.

(v) The Permittee may not use, sell or offer for sale for use in a cold cleaning machine any solvent with a vapor pressure of 1.0 millimeter of mercury (mm Hg) or greater and containing greater than 5% VOC by weight, measured at 20C (68F) containing VOCs [25PA Code 129.63(a)(4)]

(A) The above condition does not apply: [25PA Code 129.63(a)(7)]

(I) To cold cleaning machines used in extreme cleaning service;

(II) If the owner or operator of the cold cleaning machine demonstrates, and AMS approves in writing, that compliance will result in unsafe operating conditions;

(III) To immersion cold cleaning machines with a freeboard ratio equal to or greater than 0.75.

(vi) If a person sells or offers for sale any solvent containing VOCs for use in a cold cleaning machine, the person shall provide to the purchaser, the following written information: [25PA Code 129.63(a)(7)]

(A) The name and address of the solvent supplier

(B) The type of solvent including the product or vendor identification number

(C) The vapor pressure of the solvent measured in mm Hg at 20C (68F)

(i) VOC material shall be kept in covered containers when not in use. [AMR V, Sec. XIII.A.2].

(6) For 869 Alkylation Unit P662 - Sewer Lines.

(i) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.693-1(e)(1)]

(ii) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.693-1(e)(2)]

(iii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after

identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-1(e)(3)]

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(c) Monitoring Requirements

25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The concentration of these solvents may be determined using EPA test method 18, material safety data sheets, or engineering calculations. [40 CFR 63.460(a)]

(2) Proper operation of parts cleaner/cold cleaning machine in accordance with manufacturer's recommended operations and maintenance [Installation Permit 12070-71, dated May 21, 2012]

(d) Recordkeeping Requirements

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[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Records of the type and amount of any solvent with a vapor pressure that is greater than 0.3 kilopascals at 20 degrees Celsius that is added to the vats.

(2) Documentation of the concentration of solvents as determined using EPA test method 18, material safety data sheets, or engineering calculations.

(3) For the parts cleaner/cold cleaning machine, Permittee shall keep the following records: [Installation Permit No. 12070-71, dated May 21, 2012]

(i) monthly solvent usage.

(ii) VOC and HAP content of the solvent added to the parts cleaner/cold cleaner machine.

(iii) VOC emission on a monthly and rolling 12-month basis.

(iv) Records shall be kept for a period of 5 years and shall be produced upon request.

(4) For sewer lines subject to 40 CFR 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.693-1(e) when a problem is identified that could result in VOC emissions. [40 CFR 60.697(b)(3)]

(5) For completely closed drain systems subject to 40 CFR 60.693-1, the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions. [40 CFR 60.697(d)]

(6) Delay of Repair

(i) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded. [40 CFR 60.697(e)(1)]

(ii) The reason for the delay shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time. [40 CFR 60.697(e)(2)]

(iii) The signature of the Permittee (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded. [40 CFR 60.697(e)(3)]

(iv) The date of successful repair or corrective action shall be recorded. [40 CFR 60.697(e)(4)]

(6) A copy of the design specifications for all applicable equipment shall be kept for the life of the source in a readily accessible location. [40 CFR 60.697(f)(1)]

(7) The following information pertaining to the design specifications shall be kept. [40 CFR 60.697(f)(2)]

(i) Detailed schematics, and piping and instrumentation diagrams. [40 CFR 60.697(f)(2)(i)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.697(f)(2)(ii)]

(7) If the Permittee elects to install a tightly sealed cap or plug over a drain that is out of active service, the Permittee shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains. [40 CFR 60.697(g)]

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(e) Reporting Requirements

(1) The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]

(2) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]

(3) If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]

(4) The Permittee shall submit an excess emission and continuous monitoring system performance report and or a summary report to AMS and EPA semiannually. [AMS Plan Approval 03163 dated 2/5/04]

(f) Non-Applicable Requirements

(1) This group is not applicable to the oil-water separator requirements of 40 CFR 60.693-2. This group does not have an independent oil-water separator with a floating roof. This unit sewer system drains to the refinery oily water system which complies with 40 CFR 61 Subpart FF (Group 25A, Section D.27).

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26. Group 23 – Butane Isomerization

Girard Point equipment numbered P121

(a) Work Practice Standards

(1) The Permittee shall reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. The vent stream shall be introduced into the flame zone of the boiler or process heater. [40 CFR 60.662(a)]

(b) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee who seeks to demonstrate compliance with 40 CFR 60.702(a) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system. [40 CFR 60.705(s) and USEPA Region III letter to AMS dated March 29, 1994, paragraph 5]

(c) Non-Applicable Requirements

(1) The EPA has determined that the performance testing and monitoring requirements under NSPS Subpart NNN are waived for the Permittee for vent streams that are combusted as primary fuel in boilers and process heaters. All vent streams from distillation columns, reactors, etc. are accumulated and ducted into the facility fuel gas line. [USEPA Region III letter to AMS dated March 29, 1994, paragraph 4]

27. Group 25A – Refining Wastewater

This section applies to Group 1 (as defined in 40 CFR 63.641) wastewater streams associated with petroleum refining process units – all units except Benzene and Cumene Production Units, Tank Truck Loading and Railcar Unloading (P-180, P-181, P-129 & P-183).

Girard Point equipment numbered P131, CD002 (Carbon Adsorber for P141), P132, and CD003 (Carbon Adsorber for P132). Point Breeze equipment numbered P639 and CD105 (Carbon Adsorber for P639).

Girard Point equipment P114, and CD010 (Carbon Adsorber for P114). Point Breeze equipment numbered P640, CD106 (Carbon Adsorber for P640), P641, CD107 (Carbon Adsorber for P641), and P667.

EFRTs storing stormwater and process water – Girard Point P141, P142, and CD007 (Carbon Adsorber for P141). Point Breeze equipment numbered P624 and P627.

IFRs – Girard Point Tanks P-012, P-134, P-135, P-136, P-137, P-156, P-160, P-174, and Point Breeze Tanks – P-547, P-575

EFRs – Girard Point Tanks P-006, P-155, P-162 and Point Breeze Tanks – P-521, P-546, P-587, P624, P-627

(a) Work Practice Standards

(1) The Permittee shall meet the following standards for each tank [40 CFR 61.343, 40 CFR 61.351(a)(2)]

(i) Internal Floating Roof Tanks

(A) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(B) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(1) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(2) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(3) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(C) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(D) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(E) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(F) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(G) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(H) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(I) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(xi)]

(ii) External Floating Roof Tanks

(A) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(1) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. The seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(a) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(i) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(ii) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(2) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion

(a) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(i) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(ii) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(iii) There are to be no holes, tears, or other openings in the seal or seal fabric.

(B) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is

floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(C) The external floating roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(2) The Permittee shall meet the following standard for containers [40 CFR 61.345]

(i) The Permittee shall install, operate, and maintain a cover on each container used to handle, transfer, or store waste in accordance with the following requirements:

(A) The cover and all openings (e.g., bungs, hatches, and sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in 40 CFR§61.355(h)

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.

(ii) When a waste is transferred into a container by pumping, the Permittee shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe, and those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover

(iii) Each cover and all openings shall be visually inspected initially and quarterly thereafter to ensure that they are closed and gasketed properly.

(iv) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(3) The Permittee shall meet the following standard for individual drain system [40 CFR 61.346(b)]

(i) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.

(ii) Each junction box shall be equipped with a cover and may have a vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(A) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(B) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:

(1) Equip the junction box with a system to prevent the flow of organic vapors from the junction box vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box. A flow indicator shall be installed, operated, and maintained on each junction box vent pipe to ensure that organic vapors are not vented from the junction box to the atmosphere during normal operation.

(2) Connect the junction box vent pipe to a closed-vent system and control device in accordance with §61.349 of this subpart.

(iii) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(iv) When a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(4) The Permittee shall meet the following standard for oil-water separators [40 CFR 61.347]

(i) The Permittee shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(ii) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR §61.355(h).

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for

waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph Section 27(a)(4)(ii)(B) does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR§61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.

(5) The Permittee shall meet the following standard for treatment process [40 CFR 61.348]

Rather than treating the waste onsite, the Permittee shall comply with 40 CFR 61.342(c)(1)(i) by transferring the waste offsite to another facility where the waste is treated in accordance with the requirements of 40 CFR 61.342(c)(1)(i). The Permittee shall: [40 CFR 61.342(f)]

(i) Comply with the standards specified in 40 CFR 61.343 through 61.347 for each waste management unit that receives or manages the waste prior to shipment of the waste offsite. [40 CFR 61.342(f)(1)]

(ii) Include with each offsite waste shipment a notice stating that the waste contains benzene which is required to be managed and treated in accordance with the provisions of subpart FF of 40 CFR 61. [40 CFR 61.342(f)(2)]

(6) The Permittee shall meet the following standard for closed-vent systems and control devices [40 CFR 61.348]

(i) The Permittee shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:

(A) The closed-vent system shall:

(1) Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR §61.355(h).

(2) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes.

(a) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(b) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.

(c) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(d) One or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(ii) A vapor recovery system (carbon adsorption system) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(iii) Each closed-vent system and control device shall be operated at all times when waste is placed in the waste management unit vented to the control device except when maintenance or repair of the waste management unit cannot be completed without a shutdown of the control device.

(iv) The Permittee shall demonstrate that the efficiency of the vapor recovery system (carbon adsorption system) in Section D.27(a)(6)(ii), by using one of the following methods:

(A) Engineering calculations in accordance with requirements specified in 40 CFR§61.356(f); or

(B) Performance tests conducted using the test methods and procedures that meet the requirements specified in 40 CFR §61.355.

(v) The Administrator may request at any time an owner or operator demonstrate that a control device meets Section D.27(a)(6)(ii) by conducting a performance test using the test methods and procedures as required in 40 CFR §61.355.

(vi) Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections.

(vii) If visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(viii) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with 40 CFR§61.354(c).

(8) For 869 Alkylation Unit P662 and 870 Hydrodesulfurization Unit, Individual Drain System Requirements [40 CFR 60 Subpart QQQ]

Moved (insertion) [5]

Deleted: -

(i) The Permittee may elect to construct and operate a completely closed drain system. [40 CFR 60.693-1(a)]

(ii) Each completely closed drain system shall be equipped and operated with a closed vent system and control device (flare). [40 CFR 60.693-1(b)]

(iii) The Permittee must notify the EPA Administrator and AMS in the report required in 40 CFR 60.7 that they have elected to construct and operate a completely closed drain system. [40 CFR 60.693-1(c)]

(iv) If the Permittee elects to comply with the provisions of section 40 CFR 60.693-1, then they do not need to comply with the provisions of 40 CFR 60.692-2 or 40 CFR 60.694. [40 CFR 60.693-1(d)]

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee shall test equipment for compliance with no detectable emissions as required in 40 CFR 61.343 through 40 CFR 61.347, and 40 CFR 61.349 in accordance with the following requirements: [40 CFR 61.355(h)]

(i) Monitoring shall comply with method 21 from appendix A of 40 CFR part 60. [40 CFR 61.355(h)(1)]

(ii) The detection instrument shall meet the performance criteria of method 21. [40 CFR 61.355(h)(2)]

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in method 21. [40 CFR 61.355(h)(3)]

(iv) Calibration gases shall be: [40 CFR 61.355(h)(4)]

(A) Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 61.355(h)(4)(i)]

(B) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane. [40 CFR 61.355(h)(4)(ii)]

(v) The background level shall be determined as set forth in method 21. [40 CFR 61.355(h)(5)]

(vi) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface described in method 21. [40 CFR 61.355(h)(6)]

(vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance. [40 CFR 61.355(h)(7)]

(2) The Permittee shall determine the annual waste quantity at the point of waste generation by one of the methods provided below: [40 CFR 61.355(b)]

(i) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility; [40 CFR 61.355(b)(5)]

(ii) Use the maximum design capacity of the waste management unit; or [40 CFR 61.355(b)(6)]

(iii) Use measurements that are representative of maximum waste generation rates. [40 CFR 61.355(b)(7)]

(3) Knowledge of the waste. The Permittee shall provide sufficient information to document the flow-weighted annual average benzene concentration of each waste stream. Examples of information that could constitute knowledge include material balances, records of chemicals purchases, or previous test results provided the results are still relevant to the current waste stream conditions. If test data are used, then the Permittee shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the flow-weighted annual average benzene concentration for the waste stream. When the Permittee and the EPA Administrator and AMS do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under 40 CFR 61.355(c)(3) shall be used to resolve the disagreement. [40 CFR 61.355(c)(2)]

(4) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in 40 CFR 61.355(c)(3). The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(d)]

(5) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(ii) shall determine the percent reduction of benzene in the waste stream on a mass basis by the following procedure: [40 CFR 61.355(e)]

(i) The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown,

and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(e)(1)]

(ii) All testing equipment shall be prepared and installed as specified in the appropriate test methods. [40 CFR 61.355(e)(2)]

(iii) The mass flow rate of benzene entering the treatment process (Eb) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows: [40 CFR 61.355(e)(3)]

$E_b = K / (n * 10^6) [V_i C_i]$

Where:

E_b = Mass flow rate of benzene entering the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste entering the treatment process during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream entering the treatment process during each run i, ppmw.

n = Number of runs.

(iv) The mass flow rate of benzene exiting the treatment process (Ea) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows: [40 CFR 61.355(e)(4)]

$E_a = K / (n * 10^6) [V_i C_i]$

Where:

E_a = Mass flow rate of benzene exiting the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste exiting the treatment process during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream exiting the treatment process during each run i, ppmw.

n = Number of runs.

(6) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(iii) shall determine the benzene destruction efficiency for the combustion unit by the following procedure: [40 CFR 61.355(f)]

(i) The test shall be conducted under conditions that exist when the combustion unit is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test. [40 CFR 61.355(f)(1)]

(ii) All testing equipment shall be prepared and installed as specified in the appropriate test methods. [40 CFR 61.355(f)(2)]

(iii) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows: [40 CFR 61.355(f)(3)]

$E_b = K / (n * 10^6) [V_i C_i]$

Where:

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste entering the combustion unit during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream entering the combustion unit during each run i, ppmw.

n = Number of runs.

(iv) The mass flow rate of benzene exiting the combustion unit exhaust stack shall be determined as follows: [40 CFR 61.355(f)(4)]

(A) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected and be the same time period at which the mass flow rate of benzene entering the treatment process is determined. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample and each 1-hour period shall correspond to the periods when the waste feed is sampled. [40 CFR 61.355(f)(4)(i)]

(B) A run shall consist of a 1-hour period during the test. For each run: [40 CFR 61.355(f)(4)(ii)]

(1) The reading from each measurement shall be recorded; [40 CFR 61.355(f)(4)(ii)(A)]

(2) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate. [40 CFR 61.355(f)(4)(ii)(B)]

(3) The average benzene concentration in the exhaust downstream of the combustion unit shall be determined using Method 18 from appendix A of 40 CFR part 60. [40 CFR 61.355(f)(4)(ii)(C)]

(C) The mass of benzene emitted during each run shall be calculated as follows: [40 CFR 61.355(f)(4)(iii)]

$M_i = KVC (10 ^-6)$

Where:

M_i = Mass of benzene emitted during run i, kg (lb).

V = Volume of air-vapor mixture exhausted at standard conditions, m^3 (ft^3).

C = Concentration of benzene measured in the exhaust, ppmv.

K = Conversion factor, 3.24 kg/m^3 (0.202 lb/ft^3).

(D) The benzene mass emission rate in the exhaust shall be calculated as follows: [40 CFR 61.355(f)(4)(iv)]

$E_a = M_i / T$

Where:

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

M_i = Mass of benzene emitted from the combustion unit during run i, kg (lb).

T = Total time of all runs, hr.

n = Number of runs.

(v) The benzene destruction efficiency for the combustion unit shall be calculated as follows: [40 CFR 61.355(f)(5)]

$R = ((E_b – E_a)/E_b) * 100)$

Where:

R = Benzene destruction efficiency for the combustion unit, percent.

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

(7) The Permittee using performance tests to demonstrate compliance of a wastewater treatment system unit with 40 CFR 61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in 40 CFR 61.355(c)(3). The test shall be conducted under conditions that exist when the wastewater treatment system

is operating at the highest inlet wastewater stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(g)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) For a waste stream to be exempt from 40 CFR 61.342(c)(1), the Permittee shall demonstrate, at least once per year, that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in 40 CFR 61.355(c)(2) or 40 CFR 61.355(c)(3). [40 CFR 61.342(c)(2)]

(2) For a waste stream to be exempt from 40 CFR 61.342(c)(1), the Permittee shall demonstrate, at least once per year, year that the all of the following conditions are met: [40 CFR 61.342(c)(3)(ii)]

(i) The Permittee does not choose to exempt process wastewater, [40 CFR 61.342(c)(3)(ii)(A)]

(ii) The total annual benzene quantity in all waste streams chosen for exemption in 40 CFR 61.342(c)(3)(ii) does not exceed 2.0 Mg/yr as determined in the procedures in 40 CFR 61.355(j), and [40 CFR 61.342(c)(3)(ii)(B)]

(iii) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated. [40 CFR 61.342(c)(3)(ii)(C)]

(3) If the Permittee complies with the requirements of 40 CFR 61.348(b), then the Permittee shall monitor each wastewater treatment system to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows: [40 CFR 61.354(b)]

(i) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of 40 CFR 61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in 40 CFR 61.355(c)(3). [40 CFR 61.354(b)(1)]

(ii) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in 40 CFR 61.355(c)(3). [40 CFR 61.354(b)(2)]

(4) The carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the

exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. [40 CFR 61.354(d)]

(i) The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.

(ii) As an alternative to conducting this monitoring, the Permittee may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.

(5) Equipments of the individual drain systems installed in accordance with Section D.27(a)(3)(i), (ii), & (iii) shall be inspected as follows: [40 CFR 61..346(b)(4)]

(i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.

(ii) Each drain using a tightly sealed cap or plug shall be visually inspected initially and thereafter quarterly to ensure caps or plugs are in place and properly installed.

(iii) Each junction box shall be visually inspected initially and thereafter quarterly to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.

(6) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) of the fixed-roof shall be monitored initially and once per year by the methods specified in 40 CFR §61.355(h) to determine compliance with SectionD.27(a)(4)(i)(A) [40 CFR 61.347(a)(1)(i)(A)]

(7) The closed-vent system shall be monitored initially and once per year by the methods specified in 40 CFR §61.355(h) to determine compliance with SectionD.27(a)(6)(i)(A)(1) [40 CFR 61.349(a)(1)(i)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of a facility subject to the provisions of 40 CFR 61 subpart FF shall comply with the recordkeeping requirements of 40 CFR 61.356. Each record shall be maintained in a readily accessible location at the facility site for a period not less than five years from the date the information is recorded. [40 CFR 61.356(a)]

(2) The Permittee shall maintain records that identify each waste stream at the facility subject to 40 CFR 61 subpart FF, and indicate whether or not the waste

stream is controlled for benzene emissions in accordance with 40 CFR 61 subpart FF. In addition the Permittee shall maintain the following records: [40 CFR 61.356(b)]

(i) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity. [40 CFR 61.356(b)(1)]

(ii) For each waste stream exempt from 40 CFR 61.342(c)(1) in accordance with 40 CFR 61.342(c)(3), the records shall include: [40 CFR 61.356(b)(2)]

(A) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters (0.005 gallons) per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr (11 ton/yr) in accordance with 40 CFR 61.342(c)(3)(i), or [40 CFR 61.356(b)(2)(i)]

(B) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with 40 CFR 61.342(c)(3)(ii). [40 CFR 61.356(b)(2)(ii)]

(iii) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with 40 CFR 61.356(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with 40 CFR 61.356(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with 40 CFR 61.356(a)(1)(iii). [40 CFR 61.356(b)(5)]

(3) The Permittee transferring waste off-site to another facility for treatment in accordance with 40 CFR 61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the facility receiving the waste, and a copy of the notice sent with the waste shipment. [40 CFR 61.356(c)]

(4) The Permittee using control equipment in accordance with 40 CFR 61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is

used, then the owner or operator shall maintain the control device records required by 40 CFR 61.356(f). [40 CFR 61.356(d)]

(5) The Permittee using a treatment process or wastewater treatment system unit in accordance with 40 CFR 61.348 shall maintain the following records. The documentation shall be retained for the life of the unit. [40 CFR 61.356(e)]

(i) A statement signed and dated by the Permittee certifying that the unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content expected to occur. [40 CFR 61.356(e)(1)]

(ii) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the Permittee shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams, and other documentation necessary to demonstrate the unit performance. [40 CFR 61.356(e)(2)]

(iii) If performance tests are used to determine treatment process or wastewater treatment system unit performance, then the Permittee shall maintain all test information necessary to demonstrate the unit performance. [40 CFR 61.356(e)(3)]

(A) A description of the unit including the following information: type of treatment process; manufacturer name and model number; and for each waste stream entering and exiting the unit, the waste stream type (e.g., process wastewater, sludge, slurry, etc.), and the design flow rate and benzene content. [40 CFR 61.356(e)(3)(i)]

(B) Documentation describing the test protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the unit performance. The description of the test protocol shall include the following information: sampling locations, sampling method, sampling frequency, and analytical procedures used for sample analysis. [40 CFR 61.356(e)(3)(ii)]

(C) Records of unit operating conditions during each test run including all key process parameters. [40 CFR 61.356(e)(3)(iii)]

(D) All test results. [40 CFR 61.356(e)(3)(iv)]

(iv) If a control device is used, then the Permittee shall maintain the control device records required by 40 CFR 61.356(f). [40 CFR 61.356(e)(4)]

(6) The Permittee using a closed-vent system and a carbon adsorber shall maintain the following records. The documentation shall be retained for the life of the control device. [40 CFR 61.356(f)]

(i) A statement signed and dated by the Permittee certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit vented to the control device is or would be operating at the highest load or capacity expected to occur. [40 CFR 61.356(f)(1)]

(ii) If engineering calculations are used to determine control device performance in accordance with 40 CFR 61.349(c), then a design analysis for the control device that includes for example: [40 CFR 61.356(f)(2)]

(A) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the Permittee, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. For the carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon. [40 CFR 61.356(f)(2)(i)(F)]

(7) The Permittee shall maintain a record for each visual inspection required by 40 CFR 61.343 through 61.347 that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed. [40 CFR 61.356(g)]

(8) The Permittee shall maintain a record for each test of no detectable emissions required by 40 CFR 61.343 through 61.347 and 61.349. The record shall include the following information: date the test is performed, background level measured during test, and maximum concentration indicated by the instrument reading measured for each potential leak interface. If detectable emissions are measured at a leak interface, then the record shall also include the waste management unit, control equipment, and leak interface location where detectable emissions were measured, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed. [40 CFR 61.356(h)]

(9) For each treatment process and wastewater treatment system unit operated to comply with 40 CFR 61.348, the Permittee shall maintain documentation that includes the following information regarding the unit operation: [40 CFR 61.356(i)]

(i) Dates of startup and shutdown of the unit. [40 CFR 61.356(i)(1)]

(ii) If measurements of waste stream benzene concentration are performed in accordance with 40 CFR 61.354(a)(1), the Permittee shall maintain records that include date each test is performed and all test results. [40 CFR 61.356(i)(2)]

(iii) If a process parameter is continuously monitored in accordance with 40 CFR 61.354(a)(2), the Permittee shall maintain records that include a description of the operating parameter (or parameters) to be monitored to ensure that the unit will be operated in conformance with these standards and the unit's design specifications, and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the unit. [40 CFR 61.356(i)(3)]

(iv) If measurements of waste stream benzene concentration are performed in accordance with 40 CFR 61.354(b), the Permittee shall maintain records that include the date each test is performed and all test results. [40 CFR 61.356(i)(4)]

(v) Periods when the unit is not operated as designed. [40 CFR 61.356(i)(5)]

(10) For each control device, the Permittee shall maintain documentation that includes the following information regarding the control device operation: [40 CFR 61.356(j)]

(i) Dates of startup and shutdown of the closed-vent system and control device. [40 CFR 61.356(j)(1)]

(ii) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the control device. [40 CFR 61.356(j)(2)]

(iii) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when: [40 CFR 61.356(j)(3)]

(A) Any valve car-seal or closure mechanism required under 40 CFR 61.349(a)(1)(ii) is broken or the by-pass line valve position has changed. [40 CFR 61.356(j)(3)(i)]

(B) The flow monitoring devices required under 40 CFR 61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required. [40 CFR 61.356(j)(3)(ii)]

(iv) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time. [40 CFR 61.356(j)(9)]

(v) The Permittee shall maintain records of dates and times when the carbon adsorber is monitored, when breakthrough is measured, and shall record the date and time then the existing carbon in the control device is replaced with fresh carbon. [40 CFR 61.356(j)(10)]

(e) Reporting Requirements

(1) Annual Report. Beginning on the date that the equipment necessary to comply with these standards has been certified, the Permittee shall submit an annual report which includes and/or updates the following information: (If the information in the annual report required by 40 CFR 61.357(a)(1) through 40 CFR 61.357(a)(3) is not changed in the following year, the Permittee may submit a statement to that effect.) [40 CFR 61.357(d)(2)]

(i) Total annual benzene quantity from facility waste determined in accordance with 40 CFR 61.355(a). [40 CFR 61.357(a)(1)]

(ii) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions. [40 CFR 61.357(a)(2)]

(iii) For each waste stream identified as not being controlled for benzene emissions the following information shall be added to the table: [40 CFR 61.357(a)(3)]

(A) Whether or not the water content of the waste stream is greater than 10 percent; [40 CFR 61.357(a)(3)(i)]

(B) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate; [40 CFR 61.357(a)(3)(ii)]

(C) Annual waste quantity for the waste stream; [40 CFR 61.357(a)(3)(iii)]

(D) Range of benzene concentrations for the waste stream; [40 CFR 61.357(a)(3)(iv)]

(E) Annual average flow-weighted benzene concentration for the waste stream; and [40 CFR 61.357(a)(3)(v)]

(F) Annual benzene quantity for the waste stream [40 CFR 61.357(a)(3)(vi)].

NOTE: The information required above should represent the waste stream characteristics based on current configuration and operating conditions. The Permittee only needs to list in the report those waste streams that contact materials containing benzene. [40 CFR 61.357(a)(4)]

(iv) The annual report shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams. [40 CFR 61.357(d)(3)]

(v) A summary of all inspections during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken. [40 CFR 61.357(d)(8)]

(2) Quarterly Report. Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified, the Permittee shall submit a report quarterly to the EPA Administrator and AMS that includes: [40 CFR 61.357(d)(6)]

(i) A certification that all of the required inspections have been carried out. [40 CFR 61.357(d)(6)]

(ii) If a treatment process or wastewater treatment system unit is monitored in accordance with 40 CFR 61.354(b), then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr. [40 CFR 61.357(d)(7)(iii)]

(iii) For the carbon adsorber, each period of operation monitored during which any of the following conditions occur: [40 CFR 61.357(d)(7)(iv)]

(A) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas. [40 CFR 61.357(d)(7)(iv)(D)]

(B) Each occurrence when the carbon in a carbon adsorber system that is regenerated directly on site in the control device is not regenerated at the predetermined carbon bed regeneration time. [40 CFR 61.357(d)(7)(iv)(H)]

(C) Each 3-hour period of operation during which the parameters monitored are outside the range of values specified in 40 CFR 61.349(a)(2)(iv)(C), or any other periods specified by the EPA Administrator and AMS for a control device subject to the requirements of 40 CFR 61.349(a)(2)(iv). [40 CFR 61.357(d)(7)(iv)(J)]

(3) For the cover and closed-vent system monitored in accordance with 40 CFR 61.354(g), the Permittee shall submit a report quarterly to the EPA Administrator and AMS that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure. [40 CFR 61.357(d)(7)(v)]

28. Group 25B – SOCMI Wastewater

This section applies to HAP wastewater streams associated with SOCMI process units - Benzene and Cumene Production Units, Tank Truck Loading and Railcar Unloading (P-180 and P-181).

(a) Work Practice Standards

(1) The Permittee shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turnaround) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall: [40 CFR 63.105(b)]

(i) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities. [40 CFR 63.105(b)(1)]

(ii) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and [40 CFR 63.105(b)(2)]

(iii) Specify the procedures to be followed when clearing materials from process equipment. [40 CFR 63.105(b)(3)]

(4) The Permittee shall modify and update the information required by 40 CFR 63.105(b) as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure. [40 CFR 63.105(c)]

(5) The Permittee shall implement the procedures described in 40 CFR 63.105(b) and 40 CFR 63.105(c) as part of the start-up, shutdown, and malfunction plan required under 40 CFR 63.6(e)(3). [40 CFR 63.105(d)]

(6) The Permittee of a new or existing source using biological treatment for at least one wastewater stream that is Group 1 for Table 9 compounds shall achieve a required mass removal of at least 95 percent for all Table 9 compounds. The Permittee of a new source using biological treatment for at least one wastewater stream that is Group 1 for Table 8 compounds shall achieve a required mass removal of at least 95 percent for all Table 8 compounds. All Group 1 and Group 2 wastewater streams entering a biological treatment unit that are from chemical manufacturing process units subject to 40 CFR 63 Subpart F shall be included in the demonstration of the 95-percent mass removal. The Permittee shall comply with 40 CFR 63.138(g)(1) through (g)(4). [40 CFR 63.138(g), 40 CFR 63.138(a)(1), 40 CFR 63.138(a)(2), 40 CFR 63.138(b)(2), and 40 CFR 63.138(c)(2)]

(i) Except as provided in 40 CFR 63.138(g)(4), the Permittee shall ensure that all Group 1 and Group 2 wastewater streams from chemical manufacturing process units subject to this rule entering a biological treatment unit are treated to destruct at least 95-percent total mass of all Table 8 and/or Table 9 compounds. [40 CFR 63.138(g)(1)]

(ii) For open biological treatment processes compliance shall be determined using the procedures specified in 40 CFR 63.145(g). For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in 40 CFR 63.145(e) or (g). For closed anaerobic biological treatment processes compliance shall be determined using the procedures in 40 CFR 63.145(e). [40 CFR 63.138(g)(2)]

(iii) For each treatment process or waste management unit that receives, manages, or treats wastewater streams, from the point of determination of each Group 1 or Group 2 wastewater stream to the biological treatment unit, the Permittee shall comply with 40 CFR 63.133 through 40 CFR 63.137 for control of air emissions. When complying with this paragraph, the term Group 1 shall mean both Group 1 and Group 2. [40 CFR 63.138(g)(3)]

(iv) If a wastewater stream is in compliance with the requirements in 40 CFR 63.138(b)(1), (c)(1), (d), (e), (f), or (h) before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not required to be included in the total mass flow rate entering the biological treatment unit for the purpose of demonstrating compliance. [40 CFR 63.138(g)(4)]

(v) PES uses the biological treatment process meets the definition of

"enhanced biological treatment process" in §63.111 of Subpart G and the wastewater streams include one or more compounds on list 2 of table 36 of this Subpart G that do not meet the criteria in paragraph (h)(1)(ii) of 40 CFR §63.145. PES has determined F_{bio} for the list 2 compounds using the procedures specified in appendix C of 40 CFR part 63. (The term "F_{bio}" represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.) PES calculates F_{bio} for the list 1 compounds using the defaults for first order biodegradation rate constants (K1) in table 37 of Subpart G and follows the procedure explained in form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C, 40 CFR part 63.

(7) For each control device or combination of control devices used to comply with the provisions in 40 CFR 63.133 through 63.138, the Permittee shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (b) through (f) of 40 CFR 63.139. [40 CFR 63.139(a)]

(i) Whenever organic hazardous air pollutants emissions are vented to a control device which is used to comply with the provisions of subpart F of 40 CFR 63, such control device shall be operating. [40 CFR 63.139(b)]

(6) The carbon adsorption system shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device of 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 63.139(c)(2)]

(7) For the carbon canister, the design evaluation shall consider the vent stream composition, constituent concentrations, mass or volumetric flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule. [40 CFR 63.139(d)(2)(vi)]

(8) Except as provided in 40 CFR 63.140 of subpart F of 40 CFR 63, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar days after identification or discovery of the defect. [40 CFR 63.139(f)]

(9) Inspections. For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the Permittee shall comply with the inspection requirements specified in table 11 of 40 CFR 63, Subpart G. [40 CFR 63.143(a)]

(10) Delay of repair. Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown (as defined in 40 CFR 63.101) or if the Permittee determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown. [40 CFR 63.140(a)]

(11) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied or is no longer used to treat or manage Group 1 wastewater streams or residuals removed from Group 1 wastewater streams. [40 CFR 63.140(b)]

(12) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the Permittee. Repair shall be completed as soon as practical. [40 CFR 63.140(c)]

(b) Testing Requirements

(1) If complying with the 95-percent reduction efficiency requirements, comply with the requirements specified in 40 CFR 63.145(i)(1) through (i)(9). [40 CFR 63.145(i)]

(i) Compare mass destruction efficiency to required efficiency. If complying with the 95 percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation WW18) is 95 percent or greater. [40 CFR 63.145(i)(9)]

(2) The Permittee shall submit a request stating the basis for the selected monitoring frequencies and the methods that will be used. [40 CFR 63.143(c), 40 CFR 63.151(f)(1)]

(3) Performance tests for the 95-percent mass removal rate specified in 40 CFR 63.138(g) shall be conducted in accordance with the requirements of 40 CFR 63.145(g)(1), 40 CFR 63.145(e)(3)(ii), 40 CFR 63.145(e)(4)(ii) and 40 CFR 63.145(g)(2). [40 CFR 63.145(g)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request should include a description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s). The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. [40 CFR 63.143(c), 63.151(f)(1)]

(2) Determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with 40 CFR 63.144 (b) and (c). [40 CFR 63.144(b) and 40 CFR 63.144(c)]

(3) Performance tests and design evaluations for control devices. The Permittee shall conduct either a design evaluation as specified in 40 CFR 63.139(d), or a performance test as specified in 40 CFR 63.145(i) for control devices other than flares and 40 CFR 63.145(j) for flares. [40 CFR 63.145(a)(2)]

(4) For each biological treatment unit used to comply with 40 CFR 63.138, the Permittee shall comply with the monitoring requirements specified in table 12 of 40 CFR 63, Subpart G. [40 CFR 63.143(b)]

(5) If the Permittee elects to comply with Item 1 in table 12 of 40 CFR 63, Subpart G, the Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(c)]

(6) If the Permittee elects to comply with Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(d)]

(7) The Permittee shall comply with the requirements in 40 CFR 63.139(d) and with the requirements in 40 CFR 63.143(e)(1), 40 CFR 63.143(e)(2), or 40 CFR 63.143(e)(3). [40 CFR 63.143(e)]

(i) The Permittee shall comply with the following monitoring requirements specified in table 13 of subpart G of 40 CFR 63: [40 CFR 63.143(e)(1)]

(A) Monthly inspections of valves sealed closed with car-seal.

(B) Daily (or at intervals no greater than 20% of the design carbon replacement interval, whichever is greater) monitoring of organic compound concentration of adsorber exhaust; or [Table 13 of subpart G of 40 CFR 63]

(C) The Permittee shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in 40 CFR 63.111; or [40 CFR 63.143(e)(2)]

(D) The Permittee shall request approval to monitor parameters other than those specified in 40 CFR 63.143(e)(1) or 40 CFR 63.143(e)(2). The request shall be submitted according to the procedures specified in 40

CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(e)(3)]

(8) For each parameter monitored in accordance with 40 CFR 63.143(c), 40 CFR 63.143(d), or 40 CFR 63.143(e), the Permittee shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the Permittee shall comply with the requirements specified in 40 CFR 63.146(b)(7)(ii)(A) and 40 CFR 63.146(b)(8)(ii). [40 CFR 63.143(f)]

(9) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. [40 CFR 63.143(g)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall maintain a record of the information required by 40 CFR 63.105(b) and 40 CFR 63.105(c) as part of the start-up, shutdown, and malfunction plan. [40 CFR 63.105(e)]

(2) The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means for the Permittee electing to comply with Item 1 in table 12 of subpart G of 40 CFR 63. [40 CFR 63.143(c)]

(3) The Permittee transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with 40 CFR 63.132(g) shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic hazardous air pollutants which are required to be managed and treated. [40 CFR 63.147(a)]

(4) The Permittee shall keep in a readily accessible location the following records: [40 CFR 63.147(b)]

(i) A record that each waste management unit inspection required by 40 CFR 63.133 through 63.137 was performed. [40 CFR 63.147(b)(1)]

(ii) A record that each inspection for control devices required by 40 CFR 63.139 was performed. [40 CFR 63.147(b)(2)]

(iii) A record of the results of each seal gap measurement required by 40 CFR 63.133(d) and 40 CFR 63.137(c). The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in 40 CFR 63.120(b)(2), 40 CFR 63.120(b)(3), and 40 CFR 63.120(b)(4). [40 CFR 63.147(b)(3)]

(iv) For Item 1 and Item 3 of table 12 of 40 CFR 63, subpart G, the Permittee shall keep the records approved by the EPA Administrator and AMS. [40 CFR 63.147(b)(4)]

(v) Continuous records of the monitored parameters specified in Item 2 of table 12 and table 13 of 40 CFR 63, Subpart G, and in 40 CFR 63.143(e)(2). [40 CFR 63.147(b)(5)]

(vi) Documentation of a decision to use an extension, as specified in 40 CFR 63.133(e)(2) or 40 CFR 63.133(h), which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical. [40 CFR 63.147(b)(6)]

(vii) Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in 40 CFR 63.140(c), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept on site and when the manufacturer promised delivery), and the date when repair was completed. [40 CFR 63.147(b)(7)]

(5) The Permittee shall keep records of the daily average value of each continuously monitored parameter for each operating day, except as provided below: [40 CFR 63.147(d)]

(i) For carbon adsorbers, the Permittee shall keep the records specified below instead of daily averages. [40 CFR 63.147(d)(2)]

(A) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle. [40 CFR 63.147(d)(2)(i)]

(B) Records of the temperature of the carbon bed after each regeneration cycle. [40 CFR 63.147(d)(2)(ii)]

(6) If the Permittee uses process knowledge to determine the annual average concentration of a wastewater stream as specified in 40 CFR 63.144(b)(3) and/or uses process knowledge to determine the annual average flow rate as specified in 40 CFR 63.144(c)(1), and determines that the wastewater stream is not a Group 1 wastewater stream, the Permittee shall keep in a readily accessible location the documentation of how process knowledge was used to determine the annual average concentration and/or the annual average flow rate of the wastewater stream. [40 CFR 63.147(f)]

(e) Reporting Requirements

(1) The Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(c)]

(2) For a control device used to comply with 40 CFR 63.138(b)(1), (c)(1), (d), (e), (f), or (g) for which the Permittee seeks to monitor a parameter other than those specified in table 11, table 12, or table 13 of 40 CFR 63, Subpart G, the

Permittee shall submit a request for approval to monitor alternative parameters according to the procedures specified in 40 CFR 63.151(f) or (g).

(3) The Permittee shall submit the information specified in 40 CFR 63.146(b)(1) through (b)(9) as part of the Notification of Compliance Status required by 40 CFR 63.152(b). [40 CFR 63.146(b)]

(i) For each new and existing source, the Permittee shall submit the information specified in table 15 of 40 CFR 63, Subpart G for Table 8 and/or Table 9 compounds. [40 CFR 63.146(b)(2)]

(ii) For each treatment process identified in table 15 of 40 CFR 63, subpart G that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit the information specified in table 17 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(4)]

(iii) For each waste management unit identified in table 15 of 40 CFR 63, Subpart G that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit the information specified in table 18 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(5)]

(iv) For each residual removed from a Group 1 wastewater stream, the Permittee shall report the information specified in table 19 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(6)]

(v) For the nonregenerative carbon adsorber, the Permittee shall report the information specified below. [40 CFR 63.146(b)(7)]

(A) The information on parameter ranges specified in 40 CFR 63.152(b)(2) for the applicable parameters specified in table 13 of 40 CFR 63, Subpart G, unless the parameter range has already been established in the operating permit [40 CFR 63.146(b)(7)(ii)(A)]; and either

(B) The design evaluation specified in 40 CFR 63.139(d)(2) [40 CFR 63.146(b)(7)(ii)(B)]; or

(C) Results of the performance test specified in 40 CFR 63.139(d)(1). Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with 40 CFR 63.143; and applicable supporting calculations. [40 CFR 63.146(b)(7)(ii)(C)]

(4) For each treatment process, the Permittee shall submit the information specified below: [40 CFR 63.146(b)(8)]

(i) For Items 1 and 2 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the information specified below: [40 CFR 63.146(b)(8)(i)]

(A) The information on parameter ranges specified in 40 CFR 63.152(b)(2) for the parameters approved by the EPA Administrator and AMS, unless the parameter range has already been established in the operating permit. [40 CFR 63.146(b)(8)(i)(A)]

(B) Results of the initial measurements of the parameters approved by the EPA Administrator and AMS and any applicable supporting calculations. [40 CFR 63.146(b)(8)(i)(B)]

(ii) For Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the information on parameter ranges specified in 40 CFR 63.152(b)(2), unless the parameter range has already been established in the operating permit. [40 CFR 63.146(b)(8)(ii)]

(5) Except as provided in 40 CFR 63.146(b)(9)(iii), for each waste management unit or treatment process, the Permittee shall submit the information specified in either 40 CFR 63.146(b)(9)(I) or 40 CFR 63.146(b)(9)(ii). [40 CFR 63.146(b)(9)]

(i) The design evaluation and supporting documentation specified in 40 CFR 63.138(j)(1). [40 CFR 63.146(b)(9)(i)]

(ii) Results of the performance test specified in 40 CFR 63.138(j)(2). Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with 40 CFR 63.143; and applicable supporting calculations. [40 CFR 63.146(b)(9)(ii)]

(iii) If the Permittee elects to use one of the technologies specified in 40 CFR 63.138(h), the Permittee is exempt from the requirements specified in 40 CFR 63.146(b)(9)(I) or 40 CFR 63.146(b)(9)(ii). [40 CFR 63.146(b)(9)(iii)]

(6) For each waste management unit that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the results of each inspection required by 40 CFR 63.143(a) in which a control equipment failure was identified. Control equipment failure is defined for each waste management unit in 40 CFR 63.133 through 63.137. Each Periodic Report shall include the date of the inspection, identification of each waste management unit in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made. [40 CFR 63.146(c)]

(7) Except as provided in 40 CFR 63.146(f), for each treatment process used to comply with 40 CFR 63.138(b)(1), (c)(1), or (e), the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the information specified in 40 CFR 63.146(d)(1), 40 CFR 63.146(d)(2), or 40 CFR 63.146(d)(3) for the monitoring required by 40 CFR 63.143(b). [40 CFR 63.146(d)]

(i) For Item 1 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the results of measurements that indicate that the biological treatment unit is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(1)]

(ii) For Item 2 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the monitoring results for each operating day during which the daily average value of a continuously monitored parameter is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(2)]

(iii) For Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the monitoring results for each operating day during which the daily average

value of any monitored parameter approved in accordance with 40 CFR 63.151(f) was outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(3)]

(8) Except as provided in 40 CFR 63.146(f), for each control device, the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the information specified in either 40 CFR 63.146(e)(1) or 40 CFR 63.146(e)(2). [40 CFR 63.146(e)]

(i) The information specified in table 20 of 40 CFR 63, Subpart G, or [40 CFR 63.146(e)(1)]

(ii) If the Permittee elects to comply with 40 CFR 63.143(e)(2), i.e., an organic monitoring device installed at the outlet of the control device, the Permittee shall submit the monitoring results for each operating day during which the daily average concentration level or reading is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(e)(2)]

(9) Where the Permittee obtains approval to use a treatment process or control device other than one for which monitoring requirements are specified in 40 CFR 63.143, or to monitor parameters other than those specified in table 12 or 13 of 40 CFR 63, Subpart G, the EPA Administrator and AMS will specify appropriate reporting requirements. [40 CFR 63.146(f)]

(10) If an extension is utilized in accordance with 40 CFR 63.133(e)(2) or 40 CFR 63.133(h), the Permittee shall include in the next periodic report the information specified in 40 CFR 63.133(e)(2) or 40 CFR 63.133(h). [40 CFR 63.146(g)]

(f) Non-Applicable Requirements

(1) An open or closed biological treatment process in compliance with 40 CFR 63.138 and using 40 CFR 63.145(g) to demonstrate compliance is not subject to the requirements of 40 CFR 63.133 through 40 CFR 63.137. [40 CFR 63.138(a)(3)]

29. Group 26 – Benzene and Cumene Production

(a) Work Practice Standards

(1) For P181 (Benzene Recovery Unit 1732) the following requirements apply:

(i) Steam use in reboilers UE6, UE12, and UE24 shall not exceed 1.888 million lbs per day on a rolling 365-day basis. [Plan Approval No. 99110 and 99129, paragraph 2, dated December 13, 1999]

(ii) For fugitive leak sources (P112 and P113), see Group 07, Section D.8(a). [Plan Approval No. 99110 and 99129, paragraph 3, dated December 13, 1999]

(iii) For wastewater streams (P114, P115, and P123), see Groups 25A, Section D.27.(a), and 25B, Section D.28.(a). [Plan Approval No. 99110 and 99129, paragraph 4, dated December 13, 1999]

(2) For P180 (Cumene Production Unit 1733) the following requirements apply:

(i) The Cumene production rate from the facility shall be limited to 1.3 billion pounds per year (12,000 barrels per day on a 365-day average basis.)

However, the cumene production rate shall not exceed 14,000 barrels on any given day. [Plan Approval No. 99127 and 99092, paragraph 2, dated October 29, 1999.

(3) The Total Resource Effectiveness (TRE) index value of each process vent UV-15, CUV-12, CUV-312 shall be greater than 4.0. [40 CFR 63.113(e), AMR XVI.B.1]

(b) Testing Requirements

(1) Testing requirements are covered by requirements cited for Groups 07, Section D.8.(b), 25A, Section D.27.(b), and 25B, Section D.28.(b).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitoring requirements are covered by requirements cited for Groups 07, Section D.8.(c), 25A, Section D.27.(c) and 25B, Section D.28.(c).

(2) Daily steam use in UE6, UE12, and UE24.

(3) Daily cumene production.

(4) Any process change [40 CFR 63.118(c)]

(i) Process change does not include: process upsets, unintentional, temporary process change, and changes that are within the range on which the original TRE calculation was based. [40 CFR 63.115(e)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Recordkeeping requirements are covered by requirements cited for Groups 07, Section D.8.(d), 25A, Section D.27.(d) and 25B, Section D.28.(d).

(2) Combined steam use in UE6, UE12, and UE24 daily and for a rolling 365-day period.

(3) Cumene production daily and for a 365-day rolling average.

(4) Any process change and any recalculation of the TRE index value in accordance with 40 CFR 63.115(e) [40 CFR 63.118(c)]

(e) Reporting Requirements

(1) Reporting requirements are covered by requirements cited for Groups 07, Section D.8.(e), 25A, Section D.27.(e), and 25B, Section D.28.(e).

(2) Within 180 calendar days, the Permittee shall submit report of process change in accordance with Section 29(c)(4) that causes the process vents UV-15, CUV-12, CUV-312 to become a Group 2 process vent with a TRE less than 4.0. The report may be submitted as part of the next periodic report. The report shall include: [40 CFR 63.118(h)]

(i) A description of the process change,

(ii) The results of the recalculation of the TRE index value required under 40 CFR §63.115(e).

(i) A statement that the owner or operator will comply with the requirements specified in 40 CFR §63.113(d).

30. Group 27 – Emergency Generators and Fire Pumps

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each emergency generator and pump shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unit may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

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(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Emissions from the Fire Pump #4 (FP-010) and each Butane Terminal Fire Pumps (FP-020 and FP-021) shall not exceed the following:

(i) Non-methane Hydrocarbon and Nitrogen Oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr). [40 CFR 60.4205(c) and Table 4]

(ii) Carbon Monoxide (CO) emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(iii) Particulate Matter (PM) emissions shall not exceed 0.20 g/kW-hr (0.15 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(5) In addition to the emission requirements of Conditions 1 through 3, the 147 hp flood control RICE (EM-002) shall comply with the following emission requirements [AMS Installation Permit No. 18-000373]:

(i) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]

(ii) CO emissions shall not exceed 5.0 g/kW-hr or 3.7 g/hp-hr; [Tier 3 Engine]

(iii) PM emissions shall not exceed 0.30 g/kW-hr or 0.23 g/hp-hr. [Tier 3 Engine]

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(6) In addition to the emission requirements of Conditions 2 thru 5, the 275 hp flood control RICE shall comply with the following emission requirements [AMS Installation Permit No. 18-000374]:

(i) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]

(ii) CO emissions shall not exceed 3.5 g/kW-hr or 2.6 g/hp-hr; [Tier 3 Engine]

(iii) PM emissions shall not exceed 0.20 g/kW-hr or 0.15 g/hp-hr. [Tier 3 Engine]

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(b) Work Practice

(1) Each emergency generator shall be operated only during emergencies, emergency testing, and engine tuning.

(i) Emergencies are defined as when the primary power source for the facility has been rendered inoperable by an unanticipated incident.

(ii) Testing for each generator is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the generator one time per year and is limited to four hours.

(2) Each emergency generator shall operate less than 500 hours per rolling 12-month period. [25 Pa Code §129.93]

(3) Each emergency generator and fire/mitigation pump shall be installed, maintained, and operated in accordance with manufacturer's specifications. [25 Pa Code §129.93]

(4) The Permittee shall only burn No.2 fuel oil in each Fire/Mitigation Pump. The maximum sulfur content of diesel fuel shall be 0.2 % by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

(i) The Fire Pump #4 (FP-010) and each Butane Terminal Fire Pump (FP-020 and FP-021) shall only burn diesel fuel oil. The diesel fuel used in the fire pump shall meet the following requirements:

(A) The diesel fuel used in the emergency generator shall meet the following: [40 CFR 60.4207(b), 40 CFR 80.510(b)]

(1) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(2) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(10) The fire/mitigation pumps shall be operated only during emergencies, testing, and engine tuning. [AMS Installation Permit 11101 dated 6/24/11, AMS Installation Permit 11346-52 dated 2/23/12]

(i) Emergencies are defined as when there is significant drop in pressure in the fire water system or when an actual or suspected release of HF occurs and the mitigation pumps must be activated.

(ii) Testing for the fire pump is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the fire pump one time per year and is limited to four (4) hours.

(11) The Fire/Mitigation Pump shall operate less than 500 hours per rolling 12-month period.

(7) Sound levels produced by the emergency generator or pumps shall not exceed the following:

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property: or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(8) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(9) No testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps shall be performed on a day for which an Air Quality Forecast has predicted an Air Quality Action Day, or on an Air Quality Action Day [AMS XV, Sec III]

(10) Testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps during the ozone season, when not otherwise prohibited in Section D.30(b)(9), shall only be performed between the hours of 5:00 PM and 11:00 PM, except as follows: [AMS XV, Sec III]

(i) Facilities that are able to demonstrate compliance with Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) can perform testing and/or tuning between the hours of 5:00 PM and 7:30 AM.

(11) The Emergency Generators and Fire/Mitigation Pumps are exempt from the above condition in Section D.30(b)(9) and (10) during emergencies or emergency repairs regardless of the air quality. [AMS XV, Sec III]

(12) The Fire/Mitigation Pumps may be tested on the seventh day after six consecutive Air Quality Action Days, notwithstanding Section D.30.(b)(9) [AMR XV.Sec III.D]

(13) The Fire/Mitigation pump shall: [40 CFR 63.6602, Table 2c]

(i) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(14) The Permittee shall install a non-resettable hour meter if one is not already installed on each emergency generator and Fire/Mitigation pump.

(15) The Permittee shall develop a maintenance plan for the Fire/Mitigation Pumps which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

(16) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(17) The Belmont Firehouse Williams Pump (fire pump FP-019) shall operate less than 500 hours per rolling 12 month period. The fire pump shall be operated only during emergencies, testing, tuning, and fire training. [AMS Installation Permit 13170 dated 7/31/13]

(i) Emergencies are defined as the endangerment of lives, of equipment, possessions, and inventories by fire.

(ii) Testing for the Belmont Firehouse Williams Pump (fire pump FP-019) and each Butane Terminal Firewater system pumps (FP-020 and FP-021) is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the Belmont Firehouse Williams Pump (fire pump FP-019) one time per year and is limited to four hours.

(iv) Fire training is limited to 16 hours per rolling 12 month period.

(18) The Belmont Firehouse Williams Pump (fire pump FP-019) shall be subject to 40 CFR 60 Subpart IIII if the fire pump is stationed at a location or a single site at the facility for a period of 1-year or more. [AMS Installation Permit 13170 dated 7/31/13]

(19) Each flood control RICE shall only burn ultra low sulfur diesel fuel. The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm) [AMS Installation Permits 18-000373 and 18-000374].

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(20) Each flood control RICE shall comply with the following [AMS Installation Permits 18-000373 and 18-000374]:

(i) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.

(ii) Each flood control RICE may be operated during storm events for emergency water pumping to control flood.

(iii) Each flood control RICE may be operated for the purposes specified in Conditions 9(a) for up to 100 hours per calendar year.

(iv) Each flood control RICE shall operate less than 500 hours per rolling 12 month period for all operation. [Assures compliance with Condition 2]:

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(c) Testing Requirements [25 Pa Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(d) Monitoring Requirements

(1) The proper operation of each emergency generator and fire pump in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and sulfur content in fuel oil.

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) The Permittee shall provide verification or calculations to demonstrate compliance with the NOx emission limits in Section D.30 (a)(1) on a monthly basis and rolling 12-month basis. Verification may be based on AP-42, manufacturer's certified emission factors, or other AMS-approved emission factors;

(2) Operating hours for each emergency generator, flood control RICE, and fire/mitigation pump on a 12-month rolling basis

(3) The Air Quality Index (AQI) number or color code shall be determined and recorded when testing or tuning of an Emergency Generator and Fire/Mitigation Pump is conducted, to demonstrate compliance with Section D.30 (b)(9) and (12) [AMS XV, Sec IV]

(4) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(5) Manufacturer's engine compliance certification to demonstrate compliance with the applicable emission standards in 40 CFR 60.4205(b). [40 CFR 60.4211(c)]

(6) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(7) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.30.(b)(13)

(8) Date and location of the Belmont Firehouse Williams Pump (fire pump FP-019) each time the emergency fire pump is relocated to different site at the facility [AMS Installation Permit 13170 dated 7/31/13]

(9) EPA Tier rating of each temporary RICE.

(f) Reporting Requirements

[25 Pa Code §127.442 & AMR I Sec. II]

(1) Any violation of an emission limitation that does not result from a malfunction requiring reporting under Section C.12 shall be reported (by phone call or facsimile transmission) to AMS within 24 hours of detection and followed by written notification within thirty-one (31) days.

31. Group 28. Internal Combustion Engines

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each source shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unit may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-002, IC-006, IC-007, IC-008, rIC-006, rIC-007) shall be limit to the following: [40 CFR §63.6602, Table 2c]

(i) Each pump and air compressor 100 ≤ hp ≤ 300 hp shall limit the CO concentration in the exhaust to 230 ppmvd or less at 15% O2

(5) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-008) shall not exceed 2.6 g/bhp/hr [AMS Installation Permit 12098-99, dated 8/6/12]

(b) Work Practice

(1) Each units shall only burn fuel types as stated in Table A-1 Group 28.

(2) Sound levels produced by the fire pump shall not exceed the following: [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(3) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(4) The maximum hours of operation of each pump and air compressor shall be as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Per rolling 12 month average
rIC-001 ≤ 14 BHP pump	7821 hours
rIC-002 ≤ 55 BHP air compressor	2419 hours
rIC-003 ≤ 55 BHP air compressor	2419 hours
rIC-004 ≤ 55 BHP air compressor	2419 hours
rIC-005 ≤ 101 BHP air compressor	2627 hours
rIC-006 ≤ 101 BHP air compressor	2627 hours
rIC-007 ≤ 144 BHP pump	1984 hours
IC-002 (53P-800C pump)	458 hours
IC-005 (FE-5(2) Flood Control Pump Driver)	2300 hours
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	1150 hours
IC-007 (B-2623 Flood Control Pump Driver)	3050 hours
IC-008 (Engine Set 1290 (northside of 8 Sep))	360 hours

(5) Each pump and air compressor shall meet the minimum Tier level as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Tier Level*
rIC-001 ≤ 14 BHP pump	No Tier
rIC-002 ≤ 55 BHP air compressor	Tier 4
rIC-003 ≤ 55 BHP air compressor	Tier 4
rIC-004 ≤ 55 BHP air compressor	Tier 4
rIC-005 ≤ 101 BHP air compressor	Tier 4
rIC-006 ≤ 101 BHP air compressor	Tier 4
rIC-007 ≤ 144 BHP pump	Tier 3
IC-002 (53P-800C pump)	No Tier
IC-005 (FE-5(2) Flood Control Pump Driver)	No Tier
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	Tier 1
IC-007 (B-2623 Flood Control Pump Driver)	Tier 3
IC-008 (Engine Set 1290 (northside of 8 Sep))	Tier 2

*Tier level are based on 40 CFR 60 Subpart IIII

(6) Each pump and air compressor shall only burn diesel fuel. The diesel fuel shall meet the following requirements assuring compliance with 40 CFR 63.6604, 40 CFR §60.510(b)

(i) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(ii) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(7) For each pump and air compressor less than 100 hp (IC-005, rIC-001, rIC-002, rIC-003, rIC-004): [40 CFR §63.6602, Table 2c, AMS Installation Permit 12000-03 dated 10/12/12]

(i) Change oil and filter every 1000 hours of operation or annually, whichever comes first;

- PES owned diesel pump shall use an oil analysis program as stated in 40 CFR 63.6625(i)

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually,

whichever comes first, and replace as necessary.

(8) The Permittee shall maintain the pump and air compressor less than 100 hp according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6625(e)]

(9) The Permittee shall install a non-resettable hour meter if one is not already installed. [assures compliance with 40 CFR 63.6625(f)]

(10) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(c) Testing Requirement

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted for approval to AMS at least 60 days prior to the test.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(3) The Permittee shall demonstrate initial compliance with the CO concentration in Section D.31(a)(4) on each pump or air compressor greater than 100 hp (IC-001, IC-002, IC-003, IC-004, IC-006, IC-007, IC-008, IC-009, rIC-006, rIC-007) [40 CFR §63.6610(a) & 40 CFR §63.6612(a)]

(i) The performance test shall comply with 40 CFR 63 Subpart ZZZZ, Table 4 and 40 CFR §63.6620

(ii) During the initial performance test, the Permittee must establish each operating limitation

(d) Monitoring Requirements

The Permittee shall monitor:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and fuel usage and sulfur content in fuel oil.

(2) Each maintenance conducted on each pump and air compressor to demonstrate that the engines are operated and maintained in accordance to the maintenance plan. [40 CFR 63.6625(e) & 40 CFR 63.6655(e)]

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) NOx emission per rolling 12-month period, calculated monthly to demonstrate compliance with Section D.31.(a)(1). Verification shall be based on AP-42 factors, manufacturer's specification, or other AMS approved emission factors.

(2) Daily operating hours, operating hours per rolling 12-month period calculated monthly to assure compliance with Section D.31.(b)(4)

(3) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(4) Manufacturer's engine compliance certification to demonstrate compliance with the Tier level in Section D.31.(b)(5)

(5) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(6) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.31.(b)(7)

(7) Performance tests

(f) Reporting Requirements

(1) For each pump and air compressor, the Permittee shall report, in accordance with 40 CFR 63.6650, each instant in which there is a deviation in the emission limitation or operating limitation, [40 CFR 63.6640(b)]

(2) The Permittee shall submit Semi-Annual Compliance reports beginning with May 3, 2013. [40 CFR 63.6650]

(i) Each deviation of emission limitation and operating limitation that occurs during the reporting period shall be reported and the reports must contain the following:

(A) The total operating time of each pump and air compressor at which the deviation occurred during the reporting period.

(B) Information on the number, duration, and cause of deviations (including unknown cause if applicable), as applicable and corrective action taken

(ii) If there are no deviations from any emission limitations or operating limitations, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period;

32. Group 29. Refinery Sector Rule (RSR)
Catalytic Reformer Unit (1332)

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(a) Emission Limitations

(1) Meet the HAP Emission limit during initial catalyst depressuring and catalyst purging operations. [40 CFR §63.1566(a)(3)] except during passive depressuring when the reactor vent pressure is 5 psig or less [40 CFR §63.1566(a)(4)]

(b) Work Practice Standard

(1) The Permitte shall comply with Subpart UUU. [40CFR 63.1566(a)]

i. Option 1: On and after January 30, 2019, vent emissions to a flare that meets the requirements of § 63.670. Prior to January 30, 2019, vent emissions to a flare that meets the requirements for control devices in § 63.11(b) and visible emissions from a flare must not exceed a total of 5 minutes during any 2-hour operating period, or vent emissions to a flare that meets the requirements of § 63.670

ii. Option 2: Reduce uncontrolled emissions of total organic compounds (TOC) or nonmethane TOC from your process vent by 98 percent by weight using a control device or to a concentration of 20 ppmv (dry basis as hexane), corrected to 3 percent oxygen, whichever is less stringent. If you vent emissions to a boiler or process heater to comply with the percent reduction or concentration emission limitation, the vent stream must be introduced into the flame zone, or any other location that will achieve the percent reduction or concentration standard.

Benzene Fenceline Monitoring Program

(a) Work Practice Standard

(1) The Owner/Operator shall conduct sampling for benzene along the facility property boundary and analyze the samples in accordance with Methods 325A and 325B of Appendix A [40 CFR 63.658(a), 40 CFR 63.658(b)]

(2) Passive sampling locations shall be determined in accordance with Section 8.2 of Method 325A in Appendix A of 40 CFR 63.658. [40 CFR 63.658(c)]

(3) Shall collect at least one co-located duplicate sample for every 10 field samples per sampling episode and at least two field blanks per sampling episode, as described in Section 9.3 in Method 325A of Appendix A of Subpart CC. The co-located duplicates may be collected at any one of the perimeter sampling locations. [40 CFR 63.658(a), 40 CFR 63.658(c)(3))]

(b) Monitoring Requirements

(1) A 14-day sampling period shall be used.

(2) The frequency of sample collection shall be once each contiguous 14-day sampling period, such that the beginning of the next 14-day sampling period begins immediately upon completion of the previous 14-day sampling period.

(3) A 14-day sampling period may be no shorter than 13 calendar days and no longer than 15 calendar days, but the routine sampling period shall be 14 calendar days. [40 CFR 63.658(e)(1)]

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(4) Reduced Burden Sampling Frequency: When a monitoring site consistently returns results <= 0.9 µg/m3 for two years, the permittee may use the applicable minimum sampling frequency specified at 40 CFR 63.658(e)(3)(i) through (iv).

(5) If a sample from a monitoring site returns a result > 0.9 µg/m3, the monitoring frequency for that site must be adjusted as specified at. 40 CFR 63.658(e)(3)(v).

(6) Calculate the annual average "Delta C" based on the average of the 26 most recent 14-day sampling periods. Update this annual average value upon receipt of each subsequent 14-day sampling period. [40 CFR 63.658(f)(2)]

(c) Compliance Method:

(1) Compliance with the work practice standards of this condition shall be demonstrated in accordance with the monitoring/testing and recordkeeping requirements of this section.

(d) Recordkeeping Requirements

(1)The following records shall be maintained in accordance with Condition 3(b): Fenceline monitoring records required by 40 CFR 63.658 including:

i. Passive sampling results

ii. Sampling period meteorological data: average temperature and barometric pressure, wind speed and wind direction

iii. Annual average Δc records

(e) Reporting Requirements

(1) Within 45 calendar days after the end of each quarterly reporting period covered by the periodic report, each owner or operator shall submit the following information to EPAs CEDRI database: Shall submit individual sample results for each monitor for each sampling period during the quarterly reporting period, the coordinates of all of the passive monitor locations, biweekly annual average concentration difference (Δc) values for benzene for each sampling period, and notation of whether background correction was used or whether an outlier was removed.

(2) If an annual average "Delta C" value is > 9 µg/m3, the action level is exceeded and the procedures at 40 CFR 63.658(g) and (h) must be followed. [40 CFR 63.658(f)(3)]

Pressure Release Devices:

(a) Work Practice Standard:

(1) Shall operate each pressure relief valve in gas/vapor service with no detectable emissions, as indicated by an instrument reading of <500 ppm above background, except during pressure releases.[40 CFR 63.648(j)(1)]

(2) The following types of pressure relief devices are not subject to the pressure release management requirements in paragraph (j)(3) of this section.

(i) Pressure relief devices in heavy liquid service, as defined in §63.641.

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(ii) Pressure relief devices that only release material that is liquid at standard conditions (1 atmosphere and 68 degrees Fahrenheit) and that are hard-piped to a controlled drain system (i.e., a drain system meeting the requirements for Group 1 wastewater streams in §63.647(a)) or piped back to the process or pipeline.

(iii) Thermal expansion relief valves.

(iv) Pressure relief devices designed with a set relief pressure of less than 2.5 psig.

(v) Pressure relief devices that do not have the potential to emit 72 lbs/day or more of VOC based on the valve diameter, the set release pressure, and the equipment contents.

(vi) Pressure relief devices on mobile equipment.

(b) Monitoring and Compliance:

(1) Conduct instrument monitoring as applicable, no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.[40 CFR 63.648(j)(2)(i)]

(2) Must equip each affected pressure relief device with a device(s) or use a monitoring system that is capable of:

(i) Identifying the pressure release;

(ii) Recording the time and duration of each pressure release; and

(iii) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. [40 CFR 63.648(j)(3)(i)]

(3) Must apply at least three redundant prevention measures to each affected pressure relief device and document these measures. Examples of prevention measures include:

(i) Flow, temperature, level and pressure indicators with deadman switches, monitors, or automatic actuators.

(ii) Documented routine inspection and maintenance programs and/or operator training (maintenance programs and operator training may count as only one redundant prevention measure).

(iii) Inherently safer designs or safety instrumentation systems.

(iv) Deluge systems.

(v) Staged relief system where initial pressure relief valve (with lower set release pressure) discharges to a flare or other closed vent system and control device. [40 CFR 63.648(j)(3)(ii)]

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(4) If any affected pressure relief device releases to atmosphere as a result of a pressure release event, the owner or operator must perform root cause analysis and corrective action analysis and implement corrective actions. [40 CFR 63.648(j)(3)(iii)]

(5) Determine the total number of release events occurred during the calendar year for each affected pressure relief device separately and also determine the total number of release events for each pressure relief device for which the root cause analysis concluded that the root cause was a force majeure event, [40 CFR 63.648(j)(3)(iv)]

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SECTION E. OPEN BURNING VARIANCE FOR TRAINING

The Permittee may conduct controlled open burning for the firefighting and employee training as follows: [AMS Approval Letter January 25, 2011]

(2) The Permittee shall notify AMS – Facility Compliance Section at 215-685-7580 at least 24 hours prior to any controlled open burning.

(3) All controlled open burning shall follow the parameters specified in January 5, 2011 letter.

(a) The Permittee must obtain approval from AMS prior to changing any of th procedures listed in the January 5, 2011 letter.

(b) AMS may modify or revoke the open burning variance approval if it is determined necessary to prevent air pollution problems.

SECTION F. NON APPLICABLE REQUIREMENTS

AMS has determined that the following regulations are not applicable to the facility:

Pennsylvania Regulations:

25 Pa Code §123.12 – Incinerators

25 Pa Code §129.12 – Sulfuric Acid Plants

25 Pa Code §129.52 – Surface Coating Processes

25 Pa Code §129.54 – Seasonal Incineration Equipment

25 Pa Code §129.59 – Bulk Gasoline Terminals

25 Pa Code §129.60 – Bulk Gasoline Plants

25 Pa Code §129.65 – Ethylene Production Plants

25 Pa Code §129.82 – Control of VOC from gasoline dispensing facilities (Stage II)

NSPS Regulations:

40 CFR 60 Subpart D – Fossil fuel steam gen. units

40 CFR 60 Subpart D(a) – Fossil fuel electric utility boilers

40 CFR 60 Subpart D(c) – Small I/C/I steam gen. units

40 CFR 60 Subpart J – Petroleum refineries – FCC SO2 (no FCC has triggered the SO2 portion of this rule)

40 CFR 60 Subpart GG – Stationary gas turbines

40 CFR 60 Subpart UU – Asphalt roofing plants (stg. blowing of non-roofing asph.)

40 CFR 60 Subpart XX – Bulk Gasoline Terminals

MACT Regulations:

40 CFR 63 Subpart R – Gasoline Distribution (no gasoline loading in refinery)

40 CFR 63 Subpart Y – Mar. Ves. Ldg. – Gaso/Crude/HAP (facility does not trigger loading volume or HAP emission triggers)

40 CFR 63 Subpart DD – Offsite Waste

The following NESHAP regulations have been streamlined as a result of the applicability of related MACT regulations.

40 CFR 61 Subpart J – Bz VHAP Lks (10%w Bz) – 40 CFR 63 Subpart H has subsumed all previous 61/J applicabilities

40 CFR 61 Subpart V – VHAP Equipment Lks – 61/V is the technical section for Subpart J (see comment above)

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

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Summary of Alternative Monitoring Protocol/Plan (AMP)¶
Sunoco Philadelphia Energy Solutions Refinery (Girard Point) 1231/1232 Plant Flare System¶
¶
¶
Submittal Date: July 5, 2010¶
Due Date: December 31, 2010¶
Plan Implementation Date: December 31, 2010¶
¶
¶
Summary¶
¶
Under a global settlement document entered by Sunoco PES in USA v. PES R&M LLCSunoco, Inc., Civil Action No. 05-02266 (W.D. Pa) (the "Consent Decree"), the 1231/1232 Plant Flare in Philadelphia must be compliant with NSPS Subparts A and J by December 31, 2010. This Document is the Alternative Monitoring Protocol (AMP) submittal required as an option under Appendix H of that Settlement. This document demonstrates the method that PESSunoco will use to continuously demonstrate compliance of the 1231/1232 Plant Flare System with the requirements of 40 C.F.R. Part 60, Subparts A and J. ¶
¶
This document identifies all continuous and intermittent streams into the flare system, and for each continuous and intermittent stream, provides the following:¶
¶
Section 1. - A description of the stream and piping diagram¶
Section 2. - A statement confirming no crossover or sour gas entry points¶
Section 3. - An explanation of conditions that ensure low emission rates¶
Section 4. - Supporting test results using H2S monitoring¶
Section 5. - A description of how the sampling is representative of normal operation¶
Section 6. - Identification of a representative process parameter to be monitored as an indicator of stream sulfur¶
Section 7. - A suggested parameter limit for each gas stream and a review schedule¶
¶
Note: Attached to this summary are detailed line by line spread sheets that contain each individual flare connection with identifying information. These spreadsheets are segregated into 28 specific areas, by unit or unit area. The P & I D drawings, that locate those connections, are referenced on the spread sheets. These drawings are currently being updated and will be maintained by PESSunoco. Due to the sheer volume of information required to support this AMP, this summary sheet's purpose is to provide an overview of the AMP and the methodology that PESSunoco used in its creation. The 1231/1232 Plant Flare system may undergo minor, insignifi ... [39]

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In August 2012, certain air contaminant sources related to petroleum refining and located in Sunoco Inc.'s Marcus Hook refinery which were permitted under Title V operating permit No. 23-00001 (originally issued on November 18, 2008) and the air contaminant sources located in Sunoco's Philadelphia refinery which are permitted under Title V operating Permit No. V95-038 were determined to be a single facility for ... [40]

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CD-104	LPG Flare	Used by P-638	

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S-118 (GP)	Used by CU-011, H-400 HTR		

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Source ID		**Gas**		

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CU-017 GP	0.00745[m]	0.035 [m]	0.033[m]	0.33

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H2S CEM at 1332 H2 Heater	CU-009	1332-H2

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$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG}$$

Where:

TS_{FG}= Total sulfur concentration, as SO2, in the fuel gas, ppmv.

C_{SO_2} = Concentration of SO2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

F_d = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHV_{FG} = Higher heating value of the fuel gas, MMBtu/scf.

(iv) Exemptions from sulfur monitoring requirements. Flares identified in Conditions D.5(d)(7)(iv)(A) through (D) are exempt from the requirements in

Conditions D.5(d)(7)(i) through (iii). For each such flare, except as provided in Condition D.5(d)(7)(iv)(D), engineering calculations shall be used to calculate the SO2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(A) Flares that can only receive:

(1) Fuel gas streams that are inherently low in sulfur content as described in Conditions D.5(d)(5)(i) through (iv); and/or

(2) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H2S monitoring requirements as described in Condition D.5(d)(6).

(B) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.5(d)(9).

(C) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.5(d)(9).

(D) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO2 emissions, regardless of whether or not the monitoring alternative in Condition D.5(d)(9) is selected for the secondary flare

(8) Flow monitoring for flares. The owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition D.5(d)(8)(i), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.

(A) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.

(B) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.

(C) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.

(D) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.

(E) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

(9) Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(10) Excess emissions. For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions D.5(d)(10)(i) and (ii). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(i) H2S concentration limits for flares.

(A) Each rolling 3-hour period during which the average concentration of H2S as measured by the H2S continuous monitoring system required under Condition D.5(d)(4) exceeds 162 ppmv.

(ii) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition D.5(d)(6)(iii)(C), each day during which the daily concentration of H2S exceeds 162 ppmv.

(411) For

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8832 (aka Sludge Incinerator includes GP Waste Water Treatment Plant)					x	

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# 2 Treater					x	

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Schuylkill River Tank Farm					x	

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(1) The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]

(2) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective

action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]

(3) If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]

(4) The Permittee shall submit an excess emission and continuous monitoring system performance report and or a summary report to AMS and EPA semiannually. [AMS Plan Approval 03163 dated 2/5/04]

(f) Non-Applicable Requirements

(1) This group is not applicable to the oil-water separator requirements of 40 CFR 60.693-2. This group does not have an independent oil-water separator with a floating roof. This unit sewer system drains to the refinery oily water system which complies with 40 CFR 61 Subpart FF (Group 25A, Section D.27).

18.

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SECTION G. ALTERNATIVE MONITORING PROTOCOL FOR FLARES.[A1]

Summary of Alternative Monitoring Protocol/Plan (AMP)
Sunoco Philadelphia Energy Solutions Refinery (Girard Point) 1231/1232 Plant Flare System

Submittal Date: July 5, 2010
Due Date: December 31, 2010
Plan Implementation Date: December 31, 2010

Summary

Under a global settlement document entered by Sunoco PES in USA v. PES R&M LLCSunoco, Inc., Civil Action No. 05-02266 (W.D. Pa) (the "Consent Decree"), the 1231/1232 Plant Flare in Philadelphia must be compliant with NSPS Subparts A and J by December 31, 2010. This Document is the Alternative Monitoring Protocol (AMP) submittal required as an option under Appendix H of that Settlement. This document demonstrates the method that PESSunoco will use to continuously demonstrate compliance of the 1231/1232 Plant Flare System with the requirements of 40 C.F.R. Part 60, Subparts A and J.

This document identifies all continuous and intermittent streams into the flare system, and for each continuous and intermittent stream, provides the following:

Section 1. - A description of the stream and piping diagram
Section 2. - A statement confirming no crossover or sour gas entry points
Section 3. - An explanation of conditions that ensure low emission rates
Section 4. - Supporting test results using H2S monitoring
Section 5. - A description of how the sampling is representative of normal operation

Section 6. - Identification of a representative process parameter to be monitored as an indicator of stream sulfur
Section 7. - A suggested parameter limit for each gas stream and a review schedule

Note: Attached to this summary are detailed line by line spread sheets that contain each individual flare connection with identifying information. These spreadsheets are segregated into 28 specific areas, by unit or unit area. The P & I D drawings, that locate those connections, are referenced on the spread sheets. These drawings are currently being updated and will be maintained by PESSunoco. Due to the sheer volume of information required to support this AMP, this summary sheet's purpose is to provide an overview of the AMP and the methodology that PESSunoco used in its creation. The 1231/1232 Plant Flare system may undergo minor, insignificant changes during the life of this AMP. These changes will not significantly alter the AMP. Examples of these changes are: the addition of a new sample point that vents to the flare, the addition of a new relief valve, and/or the addition of a new seal pot. If any changes to the flare trigger additional requirements (such as NSPS Subpart Ja), then those requirements will be incorporated into the AMP as appropriate. If additional monitoring requirements are triggered due to flare modification, PESSunoco will comply with those monitoring requirements as appropriate (which may include submission of a revised AMP approval request in accordance with NSPS requirements). PESSunoco's Management-Of-Change system will capture any such changes as they occur and the AMP will be updated on an annual basis, if necessary.

Brief description of the 1231/1232 Plant Flare System

The 1231/1232 Plant Flare system services the entire Girard Point side of the Philadelphia Refinery with one exception. The lone exception includes the 433 unit (Alkylation Unit), which is serviced by its own flare. Although there are two distinct flare stacks (1231 and 1232 stacks), only one flare is designed to be operating at any given time. The Girard Point process units serviced by this flare system include the following:

1232 Unit
531 Unit / 8733 Unit
1732 Unit
1733 Unit
1332 Unit
433 Unit (North Butane tank field only)
137 Unit
231 Unit
331 Unit
431 Unit (Including the 431 tank field)

Both flares are steam assisted and are approximately 185 feet above grade with a 24" diameter flare tip. Both flare headers maintain pressure with refinery fuel gas and also have the ability to burn supplemental natural gas. Regarding the 1231 flare, the ability to burn natural gas is inherent in the operational design of this flare. In order for the 1232 flare to burn natural gas, however, a few minor operational adjustments must first be performed.

Both flares are equipped with an IR camera to monitor the presence of a flame. IR camera data is maintained within the refinery PKS system and a real-time status can be accessed using computer monitors in both the Central Control Room and the 1232 Unit blockhouse. In addition, a video camera monitors the operating flare to verify smokeless operation. A video screen of the operating flare can be viewed within the Central Control Room and the 1232 Unit blockhouse.

Each flare has its own knockout drum and the 1231/1232 flare system is operated such that one flare stack is operated at any given time. During normal operation, both flare knockout drums are used in-series with the 1231 flare stack used as the primary flare. Only in the event that the 1232 Unit is shutdown, or when maintenance work is to be performed on the 1231 flare, will the 1232 flare stack be used. Accordingly, the 1231 flare stack is utilized over 90% of the time.

The 1231/1232 flare system is isolated from the other Philadelphia Refinery flare systems, both on the Girard Point and Point Breeze sides of the refinery.

Brief Description of Units Protected by the 1231/1232 Plant Flare System

Fluidized Catalytic Cracking Unit (1232):

The 1232 Fluidized Catalytic Cracking Unit can be divided into three sections; the "cat" side, the recovery side, and the blower/compressor area. On the "cat" side of the process, fresh feed, after being heated, enters the riser where it is vaporized as it is mixed with hot regenerated catalyst from the regenerator. As the feed progresses up the riser, in contact with the catalyst, it is catalytically cracked as 70-75% of the feedstock is converted to gasoline and lighter materials. At the riser outlet, the mixture of catalyst and hydrocarbon vapor enters cyclones in the reactor, where separation of hydrocarbon and catalyst occurs. The hydrocarbon vapors are routed to the Main Fractionator for primary separation. The carbon laden spent catalyst exits the bottom of the reactor cyclone and settles into the Reactor Stripper where rising steam removes any entrained hydrocarbon from the spent catalyst. The catalyst is then transferred into the Regenerator where air contacts the mixture to attain efficient and effective combustion of the carbon off the catalyst. Flue gas and catalyst fines travel up the regenerator and pass through cyclones to recover the entrained catalyst.

The purpose of the Recovery side of the process is to separate and recover the dry gas, C3's, C4's and gasoline (C5+). The net effect of the processing carried out in the Recovery side (i.e. fractionation, absorption and stripping) is that the wet gas and unstabilized gasoline are separated into the desired products. These products consist of heavy catalytic gasoline, light catalytic gasoline, C3's, C4's and dry gas.

The Main Air Blower consists of a 33,000 horsepower electric motor, a gearbox, and axial air compressor. The lube oil, electrical, cooling water, and inlet air filtration systems are also present in this area.

531 Complex

The 531 complex includes four basic subunits/processes including the 531 Amine Treater, the 8733 Sour Water Stripper, the Girard Point fuel gas system, CO Boiler, Selective Catalytic Reduction (SCR) reactor, Wet Gas Scrubber, and the purge Treatment Unit (PTU).

The purpose of the 531 Amine Unit is to remove hydrogen sulfide from the 1232 absorber off-gas stream. The system consists of an absorber tower, two knockout drums, and a flash drum. Sour gas from the 1232 unit is routed through a Sour Gas Knockout Drum and enters the bottom of the C-2 Absorber. A lean amine solution brought in from the 867 Sulfur Recovery Unit flows through Amine Coolers, and enters the C-2 Absorber. In the absorber, the amine solution flows down the column and selectively absorbs H2S from the fuel gas flowing up the column. The C-2 overhead gas, now H2S free, flows through a knockout drum to the refinery fuel gas system. The H2S rich amine from the bottom of the C-2 Tower, combined with rich amine from the 1232 and 231 Units, flows to the D-3 Flash Drum where the steam and hydrocarbon is gassed-off to the 1232 unit. Rich amine is sent to the 867 Sulfur Recovery Unit for regeneration.

Some of the Philadelphia Refinery units produce process water streams that are rich in sulfides, NH3 and phenol. In order to remove these contaminants, the water is routed through the Unit 8733 Sour Water Stripper. Sour water tanks receive water from various units, which is then pumped through a heat

exchanger. The water is then pumped through additional heat exchangers to the top of Stripper Tower C-201. The stripped water is routed to 137 Crude Unit to be used as wash water in the crude feed desalters, while the overhead gas is routed to the 531 COB to be burned.

Any Girard Point process unit gas streams that are to be used for fuel must first flow to the V-10001 Fuel Gas Mix Drum. V-10001 combines and mixes all of these gas streams in order to provide a uniform fuel gas composition for use throughout the refinery. In the drum, liquids are knocked-out and returned to the F-103 Distillate Drum at 1232 FCCU or to the blowdown system. LPG, natural gas or hydrogen can be supplemented to the fuel gas mix system to maintain adequate fuel gas pressure and composition.

The CO Boiler is a pollution control device used to burn the CO in the flue gas from the 1232 FCCU Regenerator. The CO Boiler operates using a combination of refinery fuel gas, sour gas from the 8733 Sour Water Stripper and 1232 unit flue gas CO. This exothermic reaction produces steam for use in the refinery.

UDEX/Benzene Unit (1732)

The primary purpose of the UDEX unit is to recover benzene, which is used to feed the cumene unit (1733). In addition to the end product of benzene, two byproducts are recovered; a toluene mixture and raffinate. Both byproducts are used as gasoline blending components.

The benzene unit is fed by the Depentanizer side draws and bottoms from the catalytic reforming units at the Philadelphia Refinery. The UDEX charge is a combination of benzene, toluene and raffinate. The UDEX unit is essentially split into two sections - the extraction section and the fractionation section. The primary purpose of the extraction section is to separate aromatics from non-aromatics. The fractionation section then separates different aromatics.

In the extraction section, the UDEX charge enters the Extractor Tower where it contacts glycol solvent. The solvent extracts the aromatics, thus separating them from the non-aromatics. The raffinate exits the top of the Extractor Tower, then proceeds through various processes including cooling, coalescing and settling. The aromatic rich solvent exits the bottom of the Extractor Tower and is directed to a Stripper Tower, where steam removes all hydrocarbons from the solvent. The aromatic vapors (called extract) are taken from a side draw and condensed before flowing to an Extractor Receiver, where the extract is separated from wet solvent. The extract is then washed in the extract settler before it is sent to the North Clay Tower Charge Tank. The stripper tower overhead vapors are condensed prior to flowing to the Stripper Receiver.

The fractionation section is fed through Clay Towers from the Clay Tower Charge Tank, in order to remove trace quantities of contaminants. The Clay Tower outlet stream is split between two Benzene Towers, where benzene and toluene are fractionated (separated).

Cumene Unit (1733)

The cumene unit converts propylene and benzene into cumene using catalytic alkylation and trans-alkylation reactions. The unit contains two alkylation reactors which operate in series and one trans-alkylation reactor. The feedstocks (propanes/propylenes and benzene) are first purified because the Zeolite catalyst used in the downstream process is highly susceptible to poisons. Propanes/propylenes (PP) are first treated to remove sodium and light nitrogen compounds, then sent to the Deethanizer to remove light impurities such as ethane, ethylene and water. Downstream purification processes also include the removal of nitrogen, oxygenate and select sulfur compounds, bypassing the PP feed through Arsine Treaters and activated alumina. Benzene feed pretreatment includes pumping the raw material through Clay Treaters, which remove basic nitrogen compounds and water.

In the alkylation reaction, benzene is alkylated with propylene in the liquid phase over a proprietary Zeolite-type catalyst. The alkylation reactor section consists of two reactors with four catalyst beds each. The reactor effluent enters the unit Flash Tower, then continues to the unit Depropanizer, where propane is recovered. Other unit processes include benzene recovery, cumene recovery and DIPB (di-iso-propyl benzene) recovery.

The trans-alkylation reactor converts benzene and a DIPB stream over a proprietary Zeolite-type catalyst to produce cumene. The product stream from this reaction contains cumene and unreacted benzene. The stream is fed to the Recycle Column to separate the benzene and cumene.

Catalytic Reformer Unit (1332)

Light and heavy naphtha, together with stripper overhead gasoline from the 231 Unit, are fed to the Reformer Feed/Effluent Exchangers and then to the Prefractionator. This column separates the lighter components and the heavy ends from the naphtha. The Prefractionator bottoms are sent to the 231 Unit as feed. The Prefractionator off-gasses are sent to the unit 1232 FCCU Low Pressure Distillate Drum (F-103) for recovery. The Prefractionator overhead liquid is caustic treated, then sent to the 431 DIB or used as a gasoline blending stock. The middle cut off the Prefractionator is whole naphtha. A hydrogen stream from the reformer section is mixed with this naphtha before it enters the Hydrobon Feed/Effluent Exchangers. This combined stream then enters a heater and is fed to the reactor. In the reactor, hydrogen reacts with the sulfur and nitrogen compounds in the naphtha to form H2S and NH3, thereby reducing the sulfur and nitrogen in the naphtha to the required low levels specified by the catalyst manufacturer. The reactor effluent enters a series of exchangers before entering the Hydrobon Separator. Hydrogen is removed at this separator and is sent to the hydrogen system. The liquid is sent to the Hydrobon Stripper, where H2S, NH3 and light components are removed and sent to C-703 compressor where it is compressed and sent to 862 Light Ends Unit to recover the hydrocarbon. The stripper bottoms are sent to the reformer section as feed.

The purpose of the Reformer is to increase the octane of treated naphtha. Treated naphtha from the Hydrobon is mixed with a recycled hydrogen stream. The reaction mix is heated in exchangers before entering the first charge heater. The heater reactor feed then enters Reactor #1. Because the reaction is endothermic, the mix leaving Reactor #1 is heated in the 2nd charge heater before entering Reactor #2. The mix leaving the second reactor is once again heated in the 3rd charge heater and then enters Reactor #3. The mix leaving Reactor #3 is sent directly to Reactor #4 without any additional preheating. Reactor catalyst consists of an alumina base with platinum and rhenium metals. A chloride chemical is injected into the feed before the reactors, to promote the catalyst activity. The reforming reaction causes a rearrangement of the naphtha molecules, resulting in an octane boost of the naphtha and the formation of benzene, toluene, and hydrogen. The reactor effluent leaves Reactor #4 and, after heat exchange transfer, enters the Product Separator Drum. In this drum, the hydrogen is separated from the reaction mix. The liquid leaving the Product Separator enters the unit Depropanizer, where propane and lighter materials are separated and sent to the 862 unit for propane recovery. The Depropanizer bottoms are sent to the unit Debutanizer. The Debutanizer produces an overhead butane/pentane liquid which is sent to the 431 DIB to recover isobutane. The bottoms from the Debutanizer is called Reformate, which is fed to the Depentanizer, where all of the benzene and some toluene is separated and sent to the 1732 UDEX plant as feed. The Depentanizer bottoms are sent to gasoline blending.

433 Complex Butane Storage Tankfield

The 433 Unit Complex Butane Storage Tankfield is a system of piping manifolds, pumps and storage spheres designed to receive, store, and transfer butanes in the Philadelphia Refinery. The system is capable of receiving butane directly from several Girard Point process units, then manifolding the transfer a multitude of ways to any of the six storage spheres. The spheres also serve as supplemental feed tanks to three process units in the Girard Point complex. In addition, butanes may be received for storage or transferred from/to Point Breeze and the Schuykill River Tank Farm.

Crude Unit (137)

Raw crude is pumped to this unit and split into two parallel trains. It is then mixed with water and pumped to two spherical Desalters via exchangers. The crude is then fed to a surge drum, where the remaining water and light components of the crude is flashed. The crude is next pumped through an elaborate feed/product heat exchanger train to the Flash Drum, where approximately ¼ of the heated crude is vaporized and sent

directly to the Atmospheric Tower. The remaining liquid crude is heated in the F-1 Atmospheric Furnace before being sent to the Atmospheric Tower. The light ends from the Atmospheric Tower are compressed and mixed with light naphtha in the Recontact Drum to remove light products. The light gas from the Recontact Drum is sent to the FCCU for further recovery. The light naphtha is pumped to the Debutanizer Tower, where additional light ends are removed.

The bottoms from the Atmospheric Tower are heated in the F-2 and F-3 Vacuum Furnaces and then sent to the Vacuum Tower. The non-condensable gases from the Vacuum Tower are currently sent to the F-1 Atmospheric Furnace as an additional fuel source (Note: In the future, these gases will be sent to the 1232 Unit CO Boiler). The condensable gases are sent to crude suction or the heavy furnace oil line.

Gulfiner Unit (231)

The purpose of the 231 Gulfiner is to remove sulfur from distillate utilizing hydrogen in the presence of a catalyst. The Gulfiner is capable of treating virgin distillate from the 137 Crude Unit, as well as Light Cycle Oil from the 1232 FCCU.

Distillate feed is pumped through a series of preheat exchangers in order to recover heat and prepare the feed for treating. The feed, as well as a stream of hydrogen from 1332 Reformer and recycled hydrogen from 231, is heated in the charge heater. The hydrogen and distillate combine and enter two parallel reactors where the sulfur in the distillate is converted to H2S. The reactor effluent is cooled and sent through two separators which separate the distillate from the gas stream containing hydrogen and H2S. The gas stream leaves the separators and enters the Recycle Gas Amine Absorber where H2S is removed using Amine. The hydrogen is recycled through the system.

The liquid from both separators is pumped to the Stripper where both H2S and water are removed, and the flash point is controlled. Under normal operation, the product stream is mixed with 859 Hydrotreater USLD product, treated for pour and rust, and pumped to a Tank Farm.

Gasoline and overhead vapors are products taken off the Stripper overhead. The Stripper overhead gas is treated with Amine in the Fuel Gas Amine Absorber to remove H2S before being sent to the J-405 fuel gas compressor and eventually to C-703 recovery compressor. The gasoline is sent to a 1332 Reformer charge tank.

Fresh (lean) Amine to GFU 231 is supplied by Point Breeze 867 Unit. Two rich Amine streams from the Fuel Gas Absorber and the Recycle Gas Absorber are sent back to 867 where they are treated to remove H2S.

ISOM Unit (331)

The unit uses a Platinum Hydroisomerization Catalyst, under a hydrogen atmosphere in a fixed bed reactor, to complete the conversion of normal butane to isobutane. The butane feed for this unit comes from the sidedraw stream off the 431 Deisobutanizer Tower, and the defluorinated butane stream from the 433 Unit. As the ISOM feedstock must be essentially free of contaminants, butane dryers are used to remove residual moisture and sulfur from the feed stream.

The hydrogen/butane feed stream is injected with a small amount of chloride catalyst promoter and fed though a reactor preheat train, where it exchanges heat with the reactor effluent. After the reactor effluent passes through the preheat exchangers, it is fed to the stabilizer tower, where the isomerate product is separated from the hydrogen and light hydrocarbons. The hot isomerate is usually routed directly to the 431 DIB Tower, however it can be cooled and stored in the North Butane Tank Field. The stabilizer off-gas is routed to a scrubber, where circulating caustic neutralizes the hydrochloric acid generated in the reaction.

Light Ends Unit (431)

Butane feed enters a Deisobutanizer Tower (DIB), which fractionates the feed into isobutane, normal butane, and a bottoms stream containing pentanes and heavier hydrocarbons. The DIB tower contains four beds of packing material and no trays. Pumps transfer material from the DIB Feed Tank to the Feed/Bottoms Exchangers before entering the DIB tower. Once the feed leaves the tubeside of an exchanger, it enters the tower between the third and fourth beds. Raw material fed directly from the 331 ISOM stabilizer bypasses the preheaters and is injected below the top bed. DIB bottoms are cooled and normally sent to the Schuykill River Tank Farm for use in gasoline blending. The DIB sidedraw stream is pressured out of the tower through condensers, which is eventually transferred to the 331 ISOM Feed Tank. Overhead material from the DIB is condensed and then routed to the Reflux Drum. A chromatograph is provided to monitor the composition of all product streams.

Section 1. - A description of the stream and piping diagrams (actual flare connections are attached).

Below is a description of the scope in identifying flare connections.

Flare headers were walked down in the field and matched up with the Process and Instrument Diagrams (P& ID's). All connections to the flare headers were analyzed and logged into spread sheets for that flare. Connections that were found and deemed unnecessary were either physically divorced from the flare by a blind, or the valve at the flare header was closed and a car seal was placed on that valve. The AMP for the 1231/1232 Unit Plant Flare system includes approximately 455 valves with car seals. In general, car-sealed valves will only be opened for special maintenance activities such as a shutdown. These car-sealed valves will be monitored monthly to verify that the valves have not been opened and that the seals are still intact. Valves that are found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car seals broken to support maintenance activities (such as preparing an exchanger for maintenance) will not be reported in the semiannual report. Those car seals will be replaced when the maintenance activity is completed.

The attached spread sheets have a line by line analysis of the flare connection on the 1231/1232 Unit Flare system.

Section 2. - A statement confirming no crossover or sour gas entry points.

There are no crossovers or entry points where H2S can be introduced into the 1231/1232 Plant Flare System.

As noted previously, with the exception of the 433 Unit, the 1231/1232 Plant Flare System services the entire Girard Point side of the Philadelphia Refinery and this flare system is isolated from both the 433 Unit Flare and all other Point Breeze flare systems.

There are a total of 19 sample points where a minimal volume of H2S is vented back to the flare as part of the sampling process (calculations of SO2 from these sample points, required under Appendix H of the Consent Decree, are included as a separate spread sheet). Each of these connections are individually listed in Section 3 and Section 4, and all sample results are included with this summary document.

Section 3. - An explanation of conditions that ensure low emission rates. On the attached spread sheets there are line by line listings of the flare connections. A summary of the connections is below.

Fluidized Catalytic Cracking Unit (1232) Steamdown Header to the Flare

Refer to the spread sheet for the line by line analysis. For the Unit 1232 Steamdown Header portion of the 1231/1232 Plant Flare system, there are 107 connections. Of the 107 connections, 105 have been car-sealed closed. Of the remaining 2 components, both are fuel gas connections.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2-106 are car-sealed closed. In certain circumstances, where operationally appropriate, a group of maintenance vents were isolated by using a single car-seal.

Item #'s 1 and 107 are fuel gas connections that originate from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Fluidized Catalytic Cracking Unit (1232) "Cat" Recovery Side Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 "Cat" Recovery Side Flare Header portion of the 1231/1232 Plant Flare system, there are 70 connections. Of the 70 connections; 33 are either car-sealed closed or have been taken out-of-service (OOS) and blinded/capped, 16 are pressure relief valves, 11 are seal pot connections and 1 involves an exempt (steam) source. Of the remaining 9 connections: 2 represent analyzer vents containing H2S streams of <20 ppm each, 2 are bypass valves containing H2S streams of <20 ppm each, 2 are pressure control valves, 2 are analyzer vents containing H2S streams of >162 ppm each, and 1 is an analyzer vent containing an H2S stream between 20-100 ppm..

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 7, 9, 11, 13, 17, 20, 21, 23, 27, 28, 31-34, 36-41, 59-66, 68 and 69 are car-sealed closed. Item #'s 2, 35, and 52 have been taken OOS and capped/blinded.

Item #'s 6, 8, 10, 12, 16, 18, 19, 22, 24, 29, 51, 53, 55-57, and 67 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 3, 4, 5, 14, 15, 25, 26, and 42-45 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

Item # 70 is a steam valve which is exempt from monitoring.

Item #'s 48 and 50 represent analyzer vents each containing H2S streams less than 20 ppm. Relative to the E-304 Bottoms BB Analyzer Vent (#48), the average of 14 samples was 2.9 ppm H2S. The average of 14 samples concerning the Deethanizer Bottoms PP analyzer Vent (#50) was <1 ppm H2S. All sample results are included.

Item #'s 30 and 54 are bypass valves each containing H2S streams less than 20 ppm. Sample results (included) for these stream were both <3 ppm H2S.

Item #'s 1 and 58 are pressure control valves that may relieve pressure to the flare during a malfunction. Both pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. Pressure controllers are utilized in the same fashion as emergency relief valves, however provide the added benefit of a more stable overpressure relief with the ability to avoid any potential reseating problems that can arise with emergency relief valves. Both streams contain greater than 162 ppm H2S. Item #1 is the F-103 pressure controller and item #58 is the pressure controller for the E-201 Absorber. Both control valves are fully instrumented and the data collection system will flag when a malfunction causes these valves to open to the flare. When either of these valves open up to the flare, PESSunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree.

Item #'s 46 and 47 represent analyzer vents each containing H2S streams > 162 ppm. However, the contribution of SO2 from these sources are minimal and the total SO2 emissions estimated from purging each sample point to the flare are well under the 100 lbs/day allowed under Appendix H of the Consent Decree.

Item #49 is an analyzer vent containing an H2S stream between 20-100 ppm H2S. This is the T-9 Bottoms BB vent and the contribution of SO2 from this source is minimal with the total SO2 emissions estimated from purging each sample point to the flare is well under the 100 lbs/day allowed under Appendix H of the Consent Decree.

Fluidized Catalytic Cracking Unit (1232) CO Boiler Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 CO Boiler Flare Header portion of the 1231/1232 Plant Flare system, there are 7 connections. Of the 7 connections, 1 has been car-sealed closed, 1 is a pressure relief valve and the 5 others represent flare vent latch valves.

The item numbers below can be used to locate the item on the spread sheet.

Item # 2 is car sealed closed.

Item # 1 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 3-7 are flare vent latch valves associated with the 1232 CO Boiler. Of the five valves only one (#5) is associated with H2S in excess of 162 ppm; for the other four latch valves, sour gas concentrations typically range from 20-100 ppm H2S. Latch valves are a type of pressure control valve that may relieve pressure to the flare during a malfunction. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. The item #5 control valve is instrumented and the refinery data collection system will flag when a malfunction causes this valve to open to the flare. When this valve opens up to the flare, PESSunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree. Regarding the other four latch valves, operators are currently able to determine when these valves trip using various other means (e.g. alarms, flow monitors etc.).

Fluidized Catalytic Cracking Unit (1232) T-9 Area / E-209 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 T-9 Area / E-209 Flare Header portion of the 1231/1232 Plant Flare system, there are 9 connections. Of the 9 connections, 5 have been car-sealed closed, 1 is a pressure relief valve and the remaining three are associated with the Debutanizer Overhead Condenser Vent (2) and the Debutanizer Drum Vent (1).

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 1-4 and 9 are car-sealed closed.

Item # 5 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 6 and 7 are vent valves associated with the Debutanizer Overhead Condenser Vent and item #8 is associated with the Debutanizer Drum Vent. Sample results (included) for these three connections are all less than 1 ppm H2S.

Fluidized Catalytic Cracking Unit (1232) Deethanizer Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 Deethanizer Flare Header portion of the 1231/1232 Plant Flare system, there are 12 connections. Of the 12 connections, 5 are car-sealed closed, 4 are seal pot connections, 2 are associated with drum flare vents and 1 is a pressure relief valve.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 4, 5, 7 and 9 are car-sealed closed.

Item #'s 1, 3, 6, and 8 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

Item #'s 10 and 11 are drum flare vent valves. Item #10 is associated with the Deethanizer Reflux Drum and Item #11 is associated with the Feed Surge Drum. In all stream samples collected for these two connections, H2S was never detected (0 ppm).

Item # 12 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Unit 8733 Flare Header to the 1232 Flare

Refer to the spread sheet for the line by line analysis. For the Unit 8733 Flare Header portion of the 1231/1232 Plant Flare system, there are 5 connections. Of the 5 connections, 4 have been either car-sealed closed or taken out-of-service and capped/blinded, and the other is a pressure control valve associated with the Reflux Accumulator Pressure Control Vent.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 3 and 5 are car-sealed closed and Item # 4 has been taken out-of-service and capped/blinded.

Item # 1, associated with the Reflux Accumulator Pressure Control Vent valve, is a pressure control valve that may relieve pressure to the flare during a malfunction. This connection is associated with a sour gas stream. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. This control valve is instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. When this valve opens up to the flare, PESSunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports

will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree.

Unit 531 V-10001 Mix Drum Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 531 V-10001 Mix Drum Flare Header portion of the 1231/1232 Plant Flare system, there are 11 connections. Of the 11 connections, 6 are pressure relief valves, 4 are either car-sealed closed or have been taken out-of-service and blinded/capped, and 1 is a fuel gas connection.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 1, 2, 3, 6, 7, and 9 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 4, 8 and 11 are car-sealed closed. Item # 5 has been taken out-of-service and capped/blinded.

Item # 10 is a fuel gas connection that originates from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Unit 531 V-10001 Mix Drum Blow-down Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 531 V-10001 Mix Drum Blow-down Flare Header portion of the 1231/1232 Plant Flare system, there are 2 connections. Of the 2 connections, 1 is car-sealed closed and the other represents an exempt liquid stream.

The item numbers below can be used to locate the item on the spread sheet.

Item #2 is car sealed closed.

Item #1 represents the liquid level control valve to the blow-down to Drum UV-1010 and is exempt because it is a liquid stream.

Unit 531 Flare Header to the 1232 Flare Continuous / Intermittent Relief Systems

Refer to the spread sheet for the line by line analysis. For the Unit 531 Flare Header Continuous / Intermittent Relief Systems portion of the 1231/1232 Plant Flare system, there are 4 connections. Of the 4 connections, 2 are car-sealed closed, 1 is a pressure relief valve and the other is involved with an exempt stream (steam).

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2 and 4 are car-sealed closed.

Item # 3 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #1 is a steam line connection, thus exempt from monitoring.

Unit 531 Sweet Gas PV-795 Control Valve to the 1232 Flare

Refer to the spread sheet for the line by line analysis. For the Unit 531 Sweet Gas PV-795 Control Valve portion of the 1231/1232 Plant Flare system, there are 2 connections. Of the 2 connections, 1 is car-sealed closed and the other is a pressure control valve associated with the C-2 Absorber.

The item numbers below can be used to locate the item on the spread sheet.

Item # 2 is car-sealed closed.

Item #1 is a pressure control valve associated with the C-2 Absorber which is intermittently activated (estimated 100 times per year). Samples of the associated gas stream (included) averaged less than 20 ppm H2S thus are exempt. In addition, this control valve is fully instrumented and the refinery data collection system records the valve position.

Discussion of H2S Levels in the 1732 / 1733 Units

The following 8 sections contain the Unit 1732/1733 contributions to the 1231/1232 flare system. Overall, the nature of the upstream processes dictate that sulfur not be present in their feed streams. Units 1732 and 1733 are ultimately fed by the Unit 1332 and 860 Reformers. Feed to 1332 and 860 Reformers are hydrotreated to convert all the organic sulfur molecules to H2S and then the feed is stripped to remove the H2S prior to feeding the reformers. Accordingly, the feed naphtha to 1332 and 860 is, on average, less than 0.1 ppmw sulfur. This low level of sulfur in the feed translates into low levels of sulfur both in the 1732 benzene rich feed stream and the 1732 benzene product feeding the 1733 Cumene Unit.

Regarding Unit 1732, the feed streams from the reforming units contain less than 0.1 ppm H2S. This unit employs a liquid/liquid extraction process using tetraethylene glycol with no catalyst reactions occurring. Regarding Unit 1733, the PP feed stream from the Catalyst Cracking Unit (1232) is amine and caustic treated to remove 99% of the sulfur

species. The PP feed stream is then fed to this unit where it is treated through a copper oxide / zinc oxide catalyst bed that adsorbs any remaining sulfur. Hence, negligible amounts of H2S are present when the PP feed enters the cumene unit reactors and towers. Samples are routinely collected of the PP feed stream entering the unit with the average sulfur content less than 1 ppmw.

As described above, the feed streams to these units contain negligible amounts of H2S. Downstream processes in both units do not involve the generation of H2S. Finally, samples have historically and continue to show negligible H2S concentrations throughout these units (< 5 ppm).

Unit 1732 Steamdown Flare Header to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1732 Steamdown Flare Header to UV-698 portion of the 1231/1232 Plant Flare system, there are 48 connections. Of the 48 connections, 46 are car-sealed closed or have been taken out-of-service and blinded/capped, 1 is involved with an exempt stream (liquid), and the other is associated with the UV-16 Solvent Regenerator Ejector vent.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 3, 6, 7, 10, 15, 16, 19, 21, 27, 29, 30, and 36-39, are car-sealed closed. Item #'s 1, 2, 4, 5, 8, 9, 11-14, 17, 18, 20, 22-26, 28, 31-34, 40, 41, and 43-48 have been taken out-of-service and capped/blinded.

Item #42 is a liquid stream connection, thus exempt from monitoring.

Item #35 is a valve associated with the UV-16 Solvent Regenerator vent and, based upon engineering judgment, would contain negligible amounts (<5 ppm) of H2S.

Unit 1732 UV-8 Flare Header to UV-1010

Refer to the spread sheet for the line by line analysis. For the Unit 1732 UV-8 Flare Header to UV-1010 portion of the 1231/1232 Plant Flare system, there are 43 connections. Of the 43 connections, 15 are pressure relief valves, 13 are car-sealed closed or have been taken out-of-service and blinded/capped, 9 represent sampling stations, 5 are associated with receiver vents, and 1 is associated with an aromatics receiver pump.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 5, 11, 12, 14, 16, 17, 18, 22, 26 and 38-42 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 3, 4, 6, 9, 13, 15, 19, 20, 23, and 24 are car-sealed closed. Item #'s 1, 8, and 21 have been taken out-of-service and capped/blinded.

Item #'s 25, and 27-34 are sampling stations in which all samples (included), are less than 5 ppm H2S.

Item #'s 7, 10, and 35-37 are all associated with receiver vents in which all sample results (included) are less than 5 ppm H2S.

Item # 43 is associated with the unit Aromatics Recovery Pump in which all samples (included) are less than 5 ppm H2S.

Unit 1732/1733 Miscellaneous Connections to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1732/1733 Miscellaneous Connections to UV-698 portion of the 1231/1232 Plant Flare system, there are 2 connections. Of the 2 connections, 1 is car-sealed closed and the other is associated with an exempt (liquid) stream.

The item numbers below can be used to locate the item on the spread sheet.

Item # 1 is car-sealed closed.

Item #2 is a liquid stream connection, thus exempt from monitoring.

Unit 1733 CU-V18 Flare Header to UV-1010

Refer to the spread sheet for the line by line analysis. For the Unit 1733 CU-V18 Flare Header to UV-1010 portion of the 1231/1232 Plant Flare system, there are 94 connections. Of the 94 connections, 41 are car-sealed closed or have been taken out-of-service and blinded/capped, 36 are pressure relief valves, 11 represent sampling stations, 3 are related to pressure control valves, 2 related to miscellaneous vents and 1 is a seal pot.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 1, 3, 5, 7, 9, 11, 15, 18, 22, 24, 26, 29, 30, 32, 34, 38, 40, 42, 44, 46, 48, 50, 52-54, 57, 59, 63, 65, 68, 71, 77, 79, 80, 84 and 87-90 are car-sealed closed. Item #'s 16 and 55 have been taken out-of-service and capped/blinded.

Item #'s 2, 4, 6, 8, 10, 14, 17, 21, 23, 25, 31, 33, 37, 39, 41, 43, 45, 47, 49, 51, 56, 58, 62, 64, 67, 70, 73-76, 78, 81-83, 91 and 92 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result

of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 12, 13, 19, 20, 27, 28, 66, 69, 72, 93 and 94 are sampling stations / sampling vents in which all samples (included) are less than 5 ppm H2S.

Item #'s 36, 85 and 86 are pressure control valves in which H2S samples (included), revealed no or negligible (< 1.0 ppm) H2S streams.

Item #'s 60 and 61 represent miscellaneous vents in which H2S samples (included), revealed no or negligible (< 1.0 ppm) H2S streams.

Item #35 is a seal pot.

Unit 1733 Steamdown Flare Header to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1733 Steamdown Flare Header to UV-698 portion of the 1231/1232 Plant Flare system, there are 64 connections. Of the 64 connections, 61 are car-sealed closed or have been taken out-of-service and blinded/capped, and the other 3 represent miscellaneous connections further described below.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 6, 13-15, 18-21, 24-26, 32, 33, 35, 40, 43-46, and 49-56 are car-sealed closed. Item #'s 1-5, 7-12, 16, 17, 22, 23, 27-30, 36-38, 41, 42, 47, 48, and 57-64 have been taken out-of-service and capped/blinded.

Item #'s 31, 34 and 39 represent miscellaneous connections in which all sample results (included) revealed no or negligible levels of H2S. Item # 31 is a PP Feed Sample Station. Item # 34 is a Cumene Receiver vent and Item # 39 is a valve associated with the Degassing Drum.

Unit 1733 Seal Pot Vents

Refer to the spread sheet for the line by line analysis. For the Unit 1733 Seal Pot Vents portion of the 1231/1232 Plant Flare system, there are 34 connections. Of the 34 connections, 31 are seal pots and the other 3 are sampling stations.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 1-11, and 15-34 are all seal pots. As previously discussed, seal pots are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

Item #'s 12-14 are sampling stations in which all samples (included) averaged < 5 ppm H2S in the streams.

Unit 1733 PP Bullets Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1733 PP Bullets Flare Header portion of the 1231/1232 Plant Flare system, there are 8 connections. Of the 8 connections, 4 are car-sealed closed, 2 are pressure relief valves and 2 are associated with the truck unloading station vents.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 1 and 6-8 are car-sealed closed.

Item #'s 2 and 3 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 4 and 5 are vents associated with the unit truck unloading station in which all samples (included) revealed no or negligible (< 1 ppm) levels of H2S.

Unit 1733 CU-V8 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1733 CU-V8 Flare Header portion of the 1231/1232 Plant Flare system, there is 1 connection which is a pressure control valve.

The item numbers below can be used to locate the item on the spread sheet.

Item # 1 is a pressure control valve associated with the Depropanizer Overhead Receiver in which all samples (results included) revealed 0 ppm of H2S in this stream.

Unit 1332 Blowdown Header to UV-1010

Refer to the spread sheet for the line by line analysis. For the Unit 1332 Blowdown Header portion of the 1231/1232 Plant Flare system, there are 71 connections. Of the 71 connections, 65 are either car-sealed closed or have been taken out-of-service and blinded/capped, 5 are pressure relief valves and 1 is a fuel gas connection.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 5-7, 9-16, 18-23, 25-35, 37-42, 46, 47, 51, 53-61, and 63-71 are car-sealed closed. Item #'s 1, 3, 4, 36, 43-45, 50 and 52 have been taken out-of-service and capped/blinded.

Item #'s 8, 17, 24, 48 and 49 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 104(a)(1).

Item # 62 is a fuel gas connection with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Unit 1332 Flare Header HP-27-G

Refer to the spread sheet for the line by line analysis. For the Unit 1332 Flare Header HP-27-G portion of the 1231/1232 Plant Flare system, there are 64 connections. Of the 64 connections, 28 are either car-sealed closed or have been taken out-of-service and blinded/capped, 6 are pressure relief valves, 5 are associated with exempt streams, 3 are seal pots, 2 are fuel gas connections and 1 is associated with an analyzer building calibration gas vent. Of the remaining 19 components: 10 are vent valves associated with unit compressors; 4 are manual valves associated with reactor catalyst sample chamber vents; 3 are Dopak sample station manual valves associated with vessel 603; one is a Dopak sampling station manual valve associated with the P-3 Hydrobon Charge vent; and 1 is a manual valve on the FRC-708 sampling station.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 4, 6, 8-11, 13, 14, 28, 37-39, 43, 44, 46, 58, and 59 are car-sealed closed. Item #'s 25, 45, 47-50, and 54-57 have been taken out-of-service and capped/blinded.

Item #'s 1, 3, 24, 26, 27, and 51 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 5, 7, 12, 36 and 64 contain an exempt stream (e.g. liquid, steam etc.).

Item #'s 60 through 62 are seal pots.

Item #'s 52 and 53 are fuel gas connections with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Item # 33 is an analyzer building calibration gas vent associated with AH-739. Manufacturer specification sheets revealed no/negligible levels of H2S in the stream.

Item #'s 15-22 are 38C-703 Compressor seal vent connections, which are all crank or packing vents under a nitrogen purge on the flare header side of the packing. During normal operation, tight seals prevent process gas leaks through these connections to the 1231/1232 flare system. Engineering calculations reveal that the contribution of SO2 from these sources at a common, downstream sampling point during normal operation is minimal. However, in order to model worst case conditions, PESSunoco assumed a total packing failure of the connection with the highest H2S concentration at the maximum flow rate. Assuming these worst case conditions, the total contribution of SO2 would never exceed 20.26 lbs/day. Accordingly, these connections were placed onto the *de minimus* source list (spreadsheet of all sources attached) and the total of all *de minimus* sources is well below the 100 lbs/day allowed under Appendix H of the Consent Decree.

Item #'s 34 and 35 are manual vent valves associated with the C-400 compressors located within the reformer side of the unit. Sampling has historically shown and continue to show < 2 ppm H2S in the reformer side of the 1332 unit.

Item #'s 29-32 are manual valves associated with the V-400 through V-403 reactor catalyst sample chamber vents. These valves, as described in the "bullet" above, are located within the reformer side of the unit and H2S levels do not exceed 2 ppm.

Item #'s 40-42 are Dopak sample station manual valves associated with vessel 603. These connections are also located within the reformer side of the unit and H2S concentrations do not exceed 2 ppm.

Item # 63 is a Dopak sampling station manual valve associated with the P-3 Hydrobon Charge vent. At this point within the unit, the H2S has already been stripped-off and only low levels of mercaptan sulfur would be present here.

Item # 23 is a manual valve on the FRC-708 sampling station. Catalyst sampling has shown < 1 ppm H2S associated with this connection.

Unit 1332 Steamdown Header to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1332 Steamdown Header to UV-698 portion of the 1231/1232 Plant Flare system, there are 33 connections. Of the 33 connections, 27 are either car-sealed closed or have been taken out-of-service and blinded/capped, 4 are associated with unconnected lines, 1 is a manual valve associated with a depropanizer overhead sampling station and 1 is a specific gravity analyzer.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 22-26 and 30-33 are car-sealed closed. Item #'s 2-7, 9-18, 27 and 29 have been taken out-of-service and capped/blinded.

Item #'s 1 and 19-21 are associated with lines that are not connected. .

Item #8 is a manual valve associated with the V-601 depropanizer overhead sampling station. H2S levels during normal operation would not exceed 2 ppm.

Item # 28 is a specific gravity analyzer that is located within the reformer section of the unit. As discussed in the previous section, H2S levels in this area do not exceed 2 ppm.

Unit 433 North Butane Field Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 433 North Butane Field Flare Header portion of the 1231/1232 Plant Flare system, there are 41 connections. Of the 41 connections, 21 are either car-sealed closed or have been taken out-of-service and blinded/capped, 2 are seal pots, and 16 are associated with sphere pressure control valves or associated alarm testing vent lines and/or associated by-pass lines. There is also 1 pressure relief valve and 1 pressure control valve associated with V-53 (Fresh Additive Drum PCV).

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 1-6, 17-23, 39 and 41 are car-sealed closed. Item #'s 7, 10-13, and 16 have been taken out-of-service and capped/blinded.

Item #'s 14 and 15 are seal pots.

Item #'s 8, 9, 24-37 are all associated with butane spheres. These connections are either butane sphere pressure control valves, by-pass line valves or alarm testing vent lines. All sample results (included) averaged less than 20 ppm H2S for each sphere. In most cases, the sample result showed 0 ppm H2S.

Item # 38 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item # 40 is a pressure control valve associated with the V-53 Fresh Additive Drum. There is no H2S associated with this stream.

Unit 137 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 137 Flare Header portion of the 1231/1232 Plant Flare system, there are 41 connections. Of the 41

connections, 26 are either car-sealed closed or have been taken out-of-service and blinded/capped, 11 are pressure relief valves, 2 are seal pots, 1 is associated with an exempt stream (steam) and 1 is a pressure control valve.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2-8, 11, 12, 16, 18, 20, 23-27, 33 and 41 are car-sealed closed. Item #'s 15, 31, 32, 34, 35, 36, and 39 have been taken out-of-service and capped/blinded.

Item #'s 1, 9, 10, 13, 14, 17, 19, 30, 37, 38 and 40 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 28 and 29 are seal pots.

Item # 21 is associated with an exempt source (steam).

Item # 22 is a pressure control valve that may relieve pressure to the flare during a malfunction. This connection is associated with a sour gas stream. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. This control valve is instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. When this valve opens up to the flare, PESSunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree. .

Unit 231 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 231 Flare Header portion of the 1231/1232 Plant Flare system, there are 15 connections. Of the 15 connections, 8 are either car-sealed closed or have been taken out-of-service and blinded/capped, 2 are pressure relief valves, 2 are associated with compressor vents, 1 is a fuel gas knockout drum condensate vent, 1 is associated with an exempt stream (steam) and 1 is a pressure control valve.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 5, 6, 7, 9, and 11 are car-sealed closed. Item #'s 13 and 14 have been taken out-of-service and capped/blinded.

Item #'s 1 and 10 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage

or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 3 and 4 are compressor seal oil trap vents in which all samples collected (included) were not detected for H2S.

Item # 15 is a fuel gas knockout drum condensate vent where an average of H2S samples collected (included) was 9 ppm.

Item # 12 is associated with an exempt source (steam).

Item # 8 is a pressure control valve which may relieve pressure to the flare during a malfunction. According to engineering judgment, the associated stream through this valve would contain between 20-100 ppm H2S. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. This control valve is instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. When this valve opens up to the flare, PESSunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree

Unit 231 Blowdown and Pumpout Systems

Refer to the spread sheet for the line by line analysis. For the Unit 231 Blowdown and Pumpout Systems portion of the 1231/1232 Plant Flare system, there are 14 connections. Of the 14 connections, all are either car-sealed closed or have been taken out-of-service and blinded/capped.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 3-13 are car-sealed closed. Item #'s 1, 2, and 14 have been taken out-of-service and capped/blinded.

Unit 331 ISOM Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 331 ISOM Flare Header portion of the 1231/1232 Plant Flare system, there are 99 connections. Of the 99 connections, 65 are either car-sealed closed or have been taken out-of-service and blinded/capped, 18 are pressure relief valves, 8 are valves associated with analyzer vents and sampling stations, 4 are valves associated with compressor vents/reliefs, 3 are seal pots and 1 is a valve associated with the hydrogen sweep of the flare header.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 6, 9, 13, 14, 16, 17, 19, 22, 24, 26, 28, 37-43, 45, 47, 49-65, 67-76, 79, 80, 83-87, 91 and 95 are car-sealed closed. Item #'s 7, 10, 21, 31, 89, 90, 92, 97 and 98 have been taken out-of-service and capped/blinded.

Item #'s 5, 8, 11, 15, 18, 23, 25, 27, 32, 33, 44, 46, 48, 77, 78, 88, 93 and 96 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 2, 29, 30, 35, 36, 66, 94 and 99 are valves associated with analyzer vents or sampling stations in which all samples collected (included) were 0 ppm H2S.

Item #'s 3, 4, 12, and 20 are valves associated with compressor vents and reliefs in which all samples collected (included) were 0 ppm H2S.

Item # 34, 81 and 82 are seal pots.

Item # 1 is a valve associated with the hydrogen sweep of the flare header in which all samples collected (included) were 0 ppm H2S.

Unit 431 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 431 Flare Header portion of the 1231/1232 Plant Flare system, there are 24 connections. Of the 24 connections, 22 are either car-sealed closed or have been taken out-of-service and blinded/capped and the remaining two are valves associated with sampling stations.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 6-13, 15, 16, 18 and 19 are car-sealed closed. Item #'s 1-5, and 20-24 have been taken out-of-service and capped/blinded.

Item #'s 14 and 17 are valves associated with sampling stations in which all samples collected (included) were 1 ppm H2S or less.

#3 Boiler House Blowdown Flare Header

Refer to the spread sheet for the line by line analysis. For the #3 Boiler House Blowdown Flare Header portion of the 1231/1232 Plant Flare system, there are 5 connections. Of the 5 connections, 4 are either car-sealed closed or have been taken out-of-service and blinded/capped, and the remaining item is a fuel gas connection.

The item numbers below can be used to locate the item on the spread sheet.

Item # 2 is car-sealed closed. Item #'s 3-5 have been taken out-of-service and capped/blinded.

Item 1 is a fuel gas connection with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method. .

Section 4. - Supporting test results using H_2S monitoring

All connections, segregated within the 28 spreadsheets, are further identified below regarding one-time sampling and an indication if further sampling or other evaluative measures are proposed as part of this plan. Regarding one-time sampling, the arithmetic mean of the 7 or 14 samples collected are reported. Where connections are exempt from any future sampling activities, PESSunoco has offered a specific explanation. These connections "exempt" from future sampling are summarized, by group, below:

Car-sealed closed connections. These connections will be inspected monthly to verify that the valves have not been opened and that the seals are still in tact. Valves that are found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car-seals broken to support maintenance activities will not be reported. Those car-seals will be replaced when the maintenance activity is completed.

Pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Out-of-service lines that are capped/plugged or were removed.

Seal pots. These are safety systems with instrumentation that sense barrier fluid pressure. They are designed for no flow and are treated like relief valves.

Exempt streams (e.g. steam and liquid connections, etc.)

Connections in which one time sampling resulted in an average of less than 20 ppm H2S. As you will note, almost all of the connections in this category averaged less than 5 ppm H2S. PESSunoco believes that all samples collected were representative of typical refinery operations. It should be mentioned that in all but a few isolated cases, sampling was performed to obtain an average H2S level in accordance with Appendix H. There were a few instances (each described below) where engineering knowledge of the process was used to determine the H2S level of the gaseous stream.

Connections meeting one of the above criteria will not be further addressed relative to any future sampling activities as a result of this monitoring plan. Those connections not exempt, as described above, are further identified in one of two Tables in Section 6/7. Table I lists pressure control valves that do not meet one of the above exemptions. Table II lists all other components that do not meet one of the above exemptions and are not pressure control valves.

Fluidized Catalytic Cracking Unit (1232) Steamdown Header to the Flare

No supporting test results are required for the Fluidized Catalytic Cracking Unit Steamdown Header connections as there are no streams that will use the one time sampling provisions under Appendix H. All but 2 connections from this area of the 1232 unit are car-sealed closed. Accordingly, no further sampling activities are proposed for these connections.

The remaining two connections (#'s 1 and 107 on the attached spreadsheet) originate from a refinery fuel gas mix drum that has an AMS certified CEMS that monitors H2S. These connections are further addressed in Table II of Section 6/7 as Item #'s 1 and 2.

Fluidized Catalytic Cracking Unit (1232) "Cat" Recovery Side Flare Header

Supporting test results are included for the following:

E-304 Bottoms BB Analyzer Vent (average of 14 samples was 2.9 ppm H2S);
Deethanizer Bottoms PP Analyzer Vent (average of 14 samples was < 1 ppm H2S);
F-210 Caustic Accumulator Drum Vent (average of 14 samples was < 1 ppm H2S);
12AT667 Absorber Off-gas Analyzer Vent (average of 14 samples was < 1 ppm H2S);
T-9 Bottoms BB Analyzer Vent (average of 14 samples was 83.15 ppm H2S); and
F-208 Refrigeration Propane Receiver Vent (all 7 samples were 0 ppm H2S).
F-210 Caustic Accumulator Drum Vent (average of 14 samples was < 1 ppm H2S).

Six of the above seven sampling events indicated not only less than 20 ppm H2S, but none exceeded 3 ppm H2S. Accordingly, no further sampling activities are proposed for these connections. The one connection with a sampling average greater than 20 ppm (T-9 bottoms – # 49 on the attached spreadsheet) is identified in Table II of Section 6/7 as Item # 3. There are also two other connections (#'s 46 and 47 on the attached spreadsheet) in which the H2S streams exceed 162 ppm. These connections are identified in Table II of Section 6/7 as Item #'s 4 and 5. However, the contribution of SO2 from these sources are minimal and the total SO2 emissions estimated from purging each sample point to the flare are well under the 100 lbs/day allowed under Appendix H of the Consent Decree.

There are two pressure control valves (#'s 1 and 58 on the attached spreadsheet) that contain streams greater than 162 ppm H2S. These valves are described in Section 3 and identified in Table I of Section 6/7 as Item #'s 1 and 2.

All other connections to the FCCU "Cat" Side Recovery portion of this unit are either car-sealed closed, pressure relief valves, taken OOS and capped/blinded, seal pots, or an exempt (steam) valve.

Fluidized Catalytic Cracking Unit (1232) CO Boiler Flare Header

No supporting test results are required for the FCCU CO Boiler Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. One connection is car-sealed closed and one connection is a pressure relief valve. The other 5 connections are latch valves, which are a type of pressure control valve that may relieve to the flare in the event of a malfunction. All 5 latch valves are included in Table 1 of Section 6/7 as Item #'s 3 through 7.

Fluidized Catalytic Cracking Unit (1232) T-9 Area / E-209 Flare Header

Supporting test results are included for the C-235A/C Condensers and F-214 Debutanizer Drum Vent in which an average of 14 samples revealed 0.25 ppm H2S. Both of the above two sampling events indicated not only less than 20 ppm H2S, but did not exceed 1 ppm H2S. Accordingly, no further sampling activities are proposed for these connections.

All other connections from this area of the 1232 unit are either car-sealed closed or are pressure relief valves.

Fluidized Catalytic Cracking Unit (1232) Deethanizer Flare Header

Supporting test results are included for the following:

V-2 Feed Surge Drum Vent (all 7 samples were 0 ppm H2S); and
V-3 Deethanizer Reflux Drum Vent (all 14 samples were 0 ppm H2S).

Both of the above two sampling events indicated not only less than 20 ppm H2S, but none were detected at any level. Accordingly, no further sampling activities are proposed for these connections.

All other connections to the FCCU Deethanizer Flare Header portion of this unit are either car-sealed closed, are pressure relief valves or are seal pots.

Unit 8733 Flare Header

No supporting test results are required for the Unit 8733 Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the unit are either car-sealed closed or taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

The one connection (#1 on the attached spreadsheet) is a pressure control valve associated with a sour gas stream that only opens in the event of a malfunction. This valve is included in Table I of Section 6/7 as Item # 8.

Unit 531 V-10001 Mix Drum Flare Header

No supporting test results are required for the Unit 531 V-10001 Mix Drum Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. All but 1 of these connections are either car-sealed closed, been taken OOS and blinded/capped, or are pressure relief valves. Accordingly, no further sampling activities are proposed for these connections.

The one connection (#10 on the attached spreadsheet) is a fuel gas connection that originates from a common mix drum with an Air Management Services certified CEM that monitors H2S. This connection is listed in Table II of Section 6/7 as Item #6.

Unit 531 V-10001 Mix Drum Blow-down

No supporting test results are required for the Unit 531 V-10001 Mix Drum Blow-down connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the 531 unit are either car-sealed closed or are exempt (liquid stream). Accordingly, no further sampling activities are proposed for these connections.

Unit 531 Flare Header to the 1232 Flare Continuous / Intermittent Relief Systems

No supporting test results are required for the Unit 531 Flare Header as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the 531 unit are either car-sealed closed, are pressure relief valves or are exempt (steam valve). Accordingly, no further sampling activities are proposed for these connections.

Unit 531 Sweet Gas PV-795 Control Valve

Supporting test results are included for the 531 Sweet Gas PC-795 Control Valve which averaged 15.1 ppm H2S over 14 samples and is subject to the <20 ppm H2S exemption. This control valve is intermittently activated (estimated 100 times per year) and is fully instrumented via the refinery data collection system. There is no further sampling activities proposed for this connection.

Unit 1732 Steamdown Flare Header to UV-698

No supporting test results are required for the Unit 1732 Steamdown Flare Header to UV-698 connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the 1732 Unit are either car-sealed closed, have been taken OOS and blinded/capped, or are exempt (liquid stream). One valve (#35 on the attached spreadsheet), associated with the UV-16 Solvent Regenerator vent, was not sampled. Based upon engineering knowledge, the gaseous stream through this connection would contain negligible (<5 ppm) of H2S. Accordingly, no further sampling activities are proposed for these connections.

Unit 1732 UV-8 Flare Header to UV-1010

Supporting test results are included for the following:

1732 Lean Solvent Dopak Sample (average of 7 samples was 1.1 ppm H2S);
"A" Tower Benzene Bottoms Dopak Sample (average of 7 samples was < 1 ppm H2S);
"B" Tower Benzene Bottoms Dopak Sample (average of 7 samples was < 1 ppm H2S);
"A" Tower Benzene Product Dopak Sample (average of 7 samples was < 1 ppm);
"B" Tower Benzene Product Dopak Sample (average of 6 samples was < 1 ppm H2S);
1732 Extractor Recycle Dopak Sample (average of 7 samples was 1.1 ppm H2S);
P-40 Aromatics Pump Nitrogen Control/Pressure Sweep (all samples were 0 ppm H2S);
UV-3 (Stripper Receiver), UV-4 (Extract Overhead) and UV-5 (water Receiver) (all samples were 0 ppm H2S); and
UV-8 Knockout Drum (all samples were 0 ppm H2S).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 5 ppm. In addition, all other connections to the 1732 UV-8 Flare Header to UV-1010 are either car-sealed closed, are pressure relief valves, or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

Unit 1732/1733 Miscellaneous Connections to UV-698

No supporting test results are required for the Unit 1732/1733 Miscellaneous Connections to UV-698 as there are no streams that will use the one time sampling provisions under Appendix H. The connections from these miscellaneous areas of 1732/1733 are either car-sealed closed or are exempt (liquid stream). Accordingly, no further sampling activities are proposed for these connections.

Unit 1733 CU-V18 Flare Header to UV-1010

Supporting test results are included for the following:

1733 Depropanizer Overhead Dopak Sample (all 7 samples were 0 ppm H2S)
CU-V18 Knockout Drum (all 14 samples were 0 ppm H2S);
Deethanizer Dopak Sample Station (all 14 samples were 0 ppm H2S);
Arsine Dopak Sample Vent (all 14 samples were 0 ppm H2S);
Nitrogen Removal Skid Dopak Sample Vent (all 14 samples were 0 ppm H2S);
Deethanizer Vent Gas Dopak Sample Station (all 14 samples were 0 ppm H2S);
Benzene Feed Dopak Sample Station (average of 14 samples was 0.37 ppm H2S);
V-23 Reactor Inlet Dopak Sample (average of 7 samples was 0.44 ppm H2S); and
DIPB Reflux Dopak Sample (average of 7 samples was 0.62).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 1 ppm. In addition, all but three connections to the 1732 CU-V18 Flare Header to UV-1010 are either car-sealed closed, are pressure relief valves, have been taken OOS and capped/blinded or is a seal pot. Accordingly, no further sampling activities are proposed for these connections.

The remaining 3 connections are all pressure control valves (#'s 36, 85 and 86 on the attached spreadsheet) which continuously vent to the flare. Based upon engineering knowledge, the vented gaseous material would not contain H2S. Accordingly, all three connections meet the <20 ppm H2S exemption and no further sampling activities are proposed.

Unit 1733 Steamdown Flare Header to UV-698

Supporting test results are included for the following:

CU-514 Degassing Drum (all 14 samples were 0 ppm H2S); and
CU-V312 Cumene Column "C" Vent (all 14 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 1 ppm. In addition, all other connections to the 1733 Steamdown Flare Header to UV-698 are either car-sealed closed or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

Unit 1733 Seal Pot Vents

Supporting test results are included for the following:

DIPB Bottoms Dopak Sample (average of 7 samples was 4.59 ppm H2S);
Cumene Bottoms Dopak Sample (average of 7 samples was 0.52 ppm H2S); and
DIPB Recycle Dopak Sample (average of 6 samples was 0.41 ppm H2S).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 5 ppm. In addition, all other connections to the 1733 Seal Pot Vents part of the unit are seal pots. Accordingly, no further sampling activities are proposed for these connections.

Unit 1733 PP Bullets Flare Header

Supporting test results are included for the Truck Unloading Station Vent in which an average of 14 samples revealed < 1 ppm H2S. All other connections to the Unit 1733 PP Bullets Flare Header portion of this unit are either car-sealed closed or are pressure relief valves. Accordingly, no further sampling activities are proposed for these connections

Unit 1733 CU-V8 Flare Header

Supporting test results are included for the HV-008 Pressure Control Valve for the CU-V8 Depropanizer Overhead receiver, in which all 7 samples were 0 ppm H2S. Accordingly, as this connection meets the <20 ppm H2S exemption, no further sampling activities are proposed. There are no other connections associated with this spreadsheet.

Unit 1332 Blowdown Header to UV-1010

No supporting test results are required for the Unit 1332 Blowdown Header to UV-1010 connections as there are no streams that will use the one time sampling provisions under Appendix H. All but one of the connections from this area of the 1332 unit are either car-sealed closed, have been taken OOS and are either blinded / capped, or are pressure relief valves. Accordingly, no further sampling activities are proposed for these connections

There is one connection (# 62 on the attached spreadsheet) that is a fuel gas connection with an AMS certified CEMS that monitors H2S. This connection is listed in Table II of Section 6/7 as Item # 7.

Unit 1332 Flare Header HP-27-G

All but 10 of the connections from this area of the 1332 unit are either car-sealed closed, have been taken OOS and blinded/capped, are pressure relief valves, contain exempt streams or are seal pots. There are also 12 connections for this area, as described in Section 3, that are associated with no/negligible H2S levels. In some cases engineering judgment was used and previously collected samples were used for others. Accordingly, regarding all of the above connections, no further sampling activities are proposed.

The 10 other connections include two (#'s 52 and 53 on the attached spreadsheet) that are fuel gas connections with an AMS certified CEM that monitors H2S. These connections

are listed in Table II of Section 6/7 as Item #'s 8 and 9. The remaining 8 connections (#'s 15-22 on the attached spreadsheet) are associated with unit compressor vent valves (38C-703). The stream through all 8 connections would typically exceed 162 ppm H2S only in the event of a seal leak. These 8 connections are listed in Table II of Section 6/7 as Item #'s 10-17 and a description of their specific monitoring plan is detailed in the following paragraph.

For the eight 38C-703 Compressor seal vent connections, which are all crank or packing vents under a nitrogen purge on the flare header side of the packing. During normal operation, tight seals prevent process gas leaks through these connections to the 1231/1232 flare system. Engineering calculations revealed that the contribution of SO2 from these sources at the common, downstream sampling point during normal operation is minimal. However, in order to model worst case conditions, PESSunoco assumed a total packing failure of the connection with the highest H2S concentration at the maximum flow rate. Assuming these worst case conditions, the total contribution of SO2 would never exceed 20.26 lbs/day. Accordingly, these connections were placed onto the *de minimus* source list (spreadsheet of all sources attached) and the total of all *de minimus* sources is well below the 100 lbs/day allowed under Appendix H of the Consent Decree.

Unit 1332 Steamdown Header to UV-698

All but 2 of the connections from this area of the 1332 unit are either car-sealed closed, have been taken OOS and blinded/capped, or are associated with lines that are no longer connected. There is also 1 connection (# 28 on the attached spreadsheet) that is a specific gravity analyzer. Using engineering judgment, H2S levels associated with this stream would not exceed 2 ppm.

The other connection (# 8 on the attached spreadsheet) is associated with the V-601 depropanizer overhead sampling station. According to engineering judgment, typical stream concentrations would not exceed 2 ppm. Accordingly, regarding all of the above connections, no further sampling activities are proposed.

Unit 433 North Butane Field Flare Header

Supporting test results are included for the following:

1069 Sphere at the 433 North Butane Tank Field (average of 7 samples was 4.0 ppm H2S)
1067 Sphere at the 433 North Butane Tank Field (average of 7 samples was 8.57 ppm H2S);
1068 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S);
1066 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S);
1065 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S); and

1064 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. In addition, all but one connection to the 433 North Butane Field Flare Header are either car-sealed closed, have been taken OOS and capped/blinded, are pressure relief valves, or are seal pots. Accordingly, no further sampling activities are proposed for these connections

The one connection (# 40 on the attached spreadsheet) is a pressure control valve associated with the V-53 Fresh Additive Drum and, based upon engineering judgment, would not contain any H2S in the stream. Accordingly, no further sampling activities are proposed for this connection.

Unit 137 Flare Header

No supporting test results are required for the Unit 137 Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. Other than one connection, all other connections from this unit are either car-sealed closed, taken OOS and capped/blinded, are pressure relief valves, is a seal pot, or is associated with an exempt stream (steam). Accordingly, no further sampling activities are proposed for these connections

The one connection (# 22 on the attached spreadsheet) is a pressure control valve that is associated with a sour gas stream. This valve would only open in the event of a unit malfunction and is included in Table I of Section 6/7 as Item #9.

Unit 231 Flare Header

Supporting test results are included for the following:

F-501 Fuel Gas Knockout Drum (average of 14 samples was 8.79 ppm H2S); and
J-102 Compressor Oil Trap Sweep (all 14 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. Other than one connection, all other connections to the Unit 231 Flare Header portion of this unit are either car-sealed closed, have been taken OOS and capped/blinded, are pressure relief valves, or is associated with an exempt source (steam). Accordingly, no further sampling activities are proposed for these connections

The one other connection (#8 on the attached spreadsheet) is a pressure control valve with an estimated concentration of 20-100 ppm H2S in the stream. This valve would only open in the event of a unit malfunction and is included in Table I of Section 6/7 as Item #10.

Unit 231 Blowdown and Pumpout Systems

No supporting test results are required for the Unit 231 Blowdown and Pumpout Systems connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from these miscellaneous areas of Unit 231 are either car-sealed closed or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

Unit 331 ISOM Flare Header

Supporting test results are included for the following:

ISOM V-12 Knockout Drum (all 14 samples were 0 ppm H2S);
Stabilizer Bottoms Dopak Sample (all 7 samples were 0 ppm H2S); and
C-4 Drier Effluent Dopak Sample (all 14 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. All other connections to the Unit 331 ISOM Flare Header are either car-sealed closed, have been taken OOS and capped/blinded, are pressure relief valves or are seal pots. Accordingly, no further sampling activities are proposed for these connections.

Unit 431 Flare Header

Supporting test results are included for the following:

DIB Bottoms Dopak Sample (all 14 samples were 0 ppm H2S); and
Mixed Butane Feed Dopak Sample (all 14 samples, except one which was 1 ppm, were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. All other connections to the Unit 431 Flare Header portion of this unit are either car-sealed closed or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

#3 Boiler House Blowdown Flare header

No supporting test results are required for the #3 Boiler House Blowdown Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. Other than one connection, all other connections from this area are either car-sealed closed or have been taken OOS and blinded / capped. Accordingly, no further sampling activities are proposed for these connections.

The one other connection (#1 on the attached spreadsheet) is a fuel gas connection with an AMS certified CEM that monitors H2S. This connection is included in Table II of Section 6/7 as Item # 18.

Section 5. - A description of how the sampling is representative of normal operation

One time sampling was performed, per Appendix H, for 89 connections. Each of these sampling events has been previously described in Sections 3 and 4. A grouped summary for all 89 connections follow:

38 analyzer vent and sample station connection sampling was conducted in which all values fell below 20 ppm H2S. Further, all of these connections were < 5 ppm H2S.

26 valves associated with miscellaneous process equipment and vent sampling was conducted in which all values fell below 20 ppm H2S. Further, all of these connections were < 5 ppm H2S.

16 valves/bypass sampling was performed on the butane sphere system in which all samples were less than 20 ppm H2S. In all but one case, all values were 0 ppm H2S.

5 pressure control valves were sampled which either continuously or intermittently open, in which all samples were less than 20 ppm H2S.

2 analyzer vents were sampled in which the H2S concentrations were greater than 20 ppm. In one of those vents, the H2S value fell within the 20-100 ppm range. For the other vent, the H2S value was greater than 162 ppm.

1 fuel gas knockout drum vent was sampled in which the average of those samples were 9 ppm H2S.

1 sample was collected covering eight 38C-703 Compressor seal vent connections.

Prior to any and all of the above sampling efforts, an analysis of unit operational conditions was assessed to determine if the sample to be collected would be representative of normal operation. In all cases, it was determined that all samples collected were representative of normal operation.

Section 6 and 7 - Identification of a representative process parameter to be monitored as an indicator of stream sulfur and A suggested parameter limit for each gas stream and a review schedule

In summary, a total of 930 connections were evaluated which are contained within 28 segregated spreadsheets. Of the 930 components there are 902, as grouped below, in which no further sampling activities are proposed.

455 connections were determined to be car-sealed closed. Car-sealed valves will not be operated during normal operating conditions, and will only be opened under special circumstances such as maintenance activities during a shutdown. These car-sealed valves will be monitored monthly to verify that the valves have not been opened and that the seals are still in tact. Valves that are

found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car seals broken to support maintenance activities (such as preparing an exchanger for maintenance) will not be reported in the semiannual report. Those car seals will be replaced when the maintenance activity is completed. Accordingly, there are no further sampling activities proposed for these 455 connections.

156 connections were determined to be out-of-service and capped/blinded or were discovered to be not connected during field investigatory activities. Accordingly, there is no further sampling activities proposed for these 156 connections.

122 connections were identified as pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1). There is no further sampling activities proposed for these connections.

57 connections were seal pots which are safety systems with instruments that sense barrier fluid pressure. These vents are designed for no flow and are treated like relief valves. Accordingly, no further sampling activities are proposed for these connections.

12 connections were associated with exempt streams (e.g. steam, nitrogen, liquids, etc.) and no further sampling activities are proposed for these connections. .

100 connections were connections (valves, vents, etc.) associated with H2S streams less than 20 ppm. In most cases, sample results were less than 5 ppm H2S. In a few isolated instances, as described in Section 4, engineering judgment was used to determine H2S levels.

That leaves 28 components that warrant further discussion and/or evaluation. Included below are two tables in which each of these 28 components are individually listed. Table I includes the pressure control valves and Table II lists all other components.

Table I – Pressure Control Valve Monitoring Plan

Item #	Spreadsheet Name	ID#	Equip #/ Location	Routing Method	Freq	H2S Conc	Monitoring Parameter
1	FCCU Cat Recovery	1	F-103 PCV	Control Valve	Malf only	> 162	Note #1
2	FCCU Cat Recovery	58	E-201 PV-201B	Control Valve	Malf only	> 162	Note #1
3	FCCU CO Boiler	3	HV-347 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
4	FCCU CO Boiler	4	HV-350 Latch Valve	Control Valve	Malf only	20 - 100	Note #1

5	FCCU CO Boiler	5	HV-362 Latch Valve	Control Valve	Malf only	> 162	Note #1
6	FCCU CO Boiler	6	HV-374 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
7	FCCU CO Boiler	7	HV-377 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
8	8733 Flare Header	1	D-201B PV-200B	Control Valve	Malf only	> 162	Note # 1
9	Unit 137 Flare	22	25D-12 PRC580	Control Valve	Malf only	> 162	Note #1
10	Unit 231 Flare header	8	F-401 HVC-533B	Control Valve	Malf only	20 - 100	Note #1

Table 1 Notes:

Note #1 – These are PCV's that only relieve to the flare in the event of a malfunction and are basically used in the same fashion as emergency relief valves. These PCV's are fully instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. If this occurs, PESSunoco will make a determination using material balances and engineering knowledge to determine whether a hydrocarbon flaring incident has occurred within the meaning of the Consent Decree (i.e. 500 lbs or more SO2 in a 24-hour period). In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree.

Table II – Other Connection Monitoring Plan

Item #	Spreadsheet Name	ID#	Equip #/ Location	Routing Method	Freq	H2S Conc	Monitoring Parameter	Monitoring Limit
1	FCCU Steamdown	1	V-10001 HVC-761	Control Valve	Intermittent	< 20	Note #1	162 ppm
2	FCCU Steamdown	107	749 FG KO Drum Vent	Manual Valve	Intermittent	< 20	Note #1	162 ppm
3	FCCU Cat Recovery	49	T-9 Bottoms Analyzer Vent	-	Continuous	20 - 100	< 100 lbs SO2/ Day calculation	Not Applicable
4	FCCU Cat Recovery	46	E-201 Analyzer Vent	-	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
5	FCCU Cat Recovery	47	E-204 Analyzer Vent	-	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
6	Unit 531 V-10001 Mix Drum	10	V-10001 PV-796	Control Valve	Intermittent	< 20	Note #1	162 ppm
7	Unit 1332 Blowdown Header	62	V-606 Manual Valve	Manual Valve	Intermittent	< 20	Note #1	162 ppm
8	Unit 1332 at HP-27-G	52	H-2 AE-001	Manual Valve	Continuous	20 - 100	Note #1	162 ppm

9	Unit 1332 at HP	53	H-2 AE-002	Manual Valve	Continuous	20 - 100	Note #1	162 ppm
10	Unit 1332 at HP	15	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
11	Unit 1332 at HP	16	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
12	Unit 1332 at HP	17	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
13	Unit 1332 at HP	18	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
14	Unit 1332 at HP	19	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
15	Unit 1332 at HP	20	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
16	Unit 1332 at HP	21	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
17	Unit 1332 at HP	22	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
18	#3 Boiler House	2	LCV-1001	Control Valve	Intermittent	< 20	Note #1	162 ppm

Table II Notes:

Note #1 - These are fuel gas connections with an Air Management Services CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method. No further sampling actions are warranted.

PESSunoco will implement a specific procedure written to ensure that PESSunoco will adhere to all of the provisions contained within this monitoring plan. The procedure addresses the specific process from the discovery of a potential regulatory condition (i.e. car seal valve broken and valve discovered open, PCV opened, etc.) to what internal actions must occur, to ultimate reporting (if necessary).

Submittal Date: July 5, 2010
Due Date: December 31, 2010
Plan Implementation Date: December 31, 2010

Summary

Under a global settlement document entered by PESSunoco in USA v. PES R&M LLCSunoco, Inc., Civil Action No. 05-02266 (W.D. Pa) (the "Consent Decree"), the 433 Unit Plant Flare in Philadelphia must be compliant with NSPS Subparts A and J by December 31, 2010. This Document is the Alternative Monitoring Protocol (AMP) submittal required as an option under Appendix H of that Settlement. This document demonstrates the method that PESSunoco will use to continuously demonstrate compliance of the 433 Unit Plant Flare with the requirements of 40 C.F.R. Part 60, Subparts A and J.

This document identifies all continuous and intermittent streams into the flare system, and for each continuous and intermittent stream, provides the following:

A description of the stream and piping diagram
A statement confirming no crossover or sour gas entry points
An explanation of conditions that ensure low emission rates
Supporting test results using H2S monitoring
A description of how the sampling is representative of normal operation
Identification of a representative process parameter to be monitored as an indicator of stream sulfur
A suggested parameter limit for each gas stream and a review schedule

Note: Attached to this summary are detailed line by line spread sheets that contain each individual flare connection with identifying information. The P & I D drawings, that locate these connections, are referenced on the spread sheets. These drawings are currently being updated and will be maintained by PESSunoco. Due to the sheer volume of information required to support this AMP, this summary sheet's purpose is to provide an overview of the AMP and the methodology that PESSunoco used in its creation. The 433 Unit Plant Flare system may undergo minor, insignificant changes during the life of this AMP. These changes will not significantly alter the Alternate Monitoring Protocol. Examples of these changes are: the addition of a new sample point that vents to the flare, the addition of a new relief valve, and/or the addition of a new seal pot. If any changes to the flare trigger additional requirements (such as NSPS Subpart Ja), then those requirements will be incorporated into the AMP as appropriate. If additional monitoring requirements are triggered due to flare modification, PESSunoco will comply with those monitoring requirements as appropriate (which may include submission of a revised AMP approval request in accordance with NSPS requirements). PESSunoco's Management-Of-Change system will capture any such changes as they occur and the AMP will be updated on an annual basis, if necessary.

A Brief description of the 433 Unit Plant Flare System

The 433 Unit Plant Flare system services the Hydrofluoric Acid Alkylation Unit (Girard Point "Alky" Unit, also called 433 Unit). The flare is steam assisted and is 250 feet above grade with a 36" diameter flare header. The flare headers maintain pressure with refinery fuel gas. The flare is monitored via a TV camera with monitors located in both the Central Control Room and the 433 Unit blockhouse. The flame is also monitored with an infrared flame monitor that has an output to the refinery PKS data acquisition system.

There are two flare headers servicing the 433 unit, the Acid Flare Header and Non-Acid Flare Header. Discharges to the Acid Flare Header include the Reactor/Settler, Rerun Tower and all associated equipment. These systems discharge to the T-3 Acid Relief Neutralizer (ARN) prior to discharge to the V-23 Flare Knockout Drum. Systems discharging to the Non-Acid Flare Header include the Caustic Treater, Deethanizer, Feed Treater and Isobutane systems and associated equipment. These systems bypass the ARN and are discharged downstream of this neutralizer, which then proceeds to the V-23 Flare Knockout Drum. Accordingly, all discharges to the flare go through Flare Knockout Drum V-23. Liquid from V-23 is pumped to a recovered oil tank.

The 433 Unit Plant Flare system services only the 433 Unit and is isolated from the other flare systems located within the Philadelphia Refinery. There are no interconnections with other refinery process units or processes.

Unit Protected by the 433 Unit Flare

Hydrofluoric Acid Alkylation Unit (433 Unit):

The hydrofluoric acid alkylation process involves a catalytic reaction that combines isobutane with olefins to form alkylate, which is a gasoline boiling range material used as a gasoline blending component. The olefins are propylene, butylene and amylenes (pentenes) with hydrofluoric acid acting as the catalyst. Philadelphia Refinery catalytic cracking units provide most of the feed material (olefins) which is first pretreated to remove impurities. The treated feed is injected into the reactor risers where the feed contacts recirculating HF acid, resulting in an alkylation reaction. Downstream fractionation and product treating refine the reacted products. Acid regeneration is necessary because the process lowers the acid concentration, thereby affecting reaction yields. The circulating HF acid is regenerated in the T-11 rerun column to remove impurities. Fresh acid must be added to the system, as needed, from the acid storage drum (V-19).

A description of the stream and piping diagrams (actual flare connections are attached).

Below is a description of the scope in identifying flare connections.

Flare headers were walked down in the field and matched up with the Process and Instrument Diagrams (P& ID). All connections to the flare headers were analyzed and logged into spread sheets for that flare. Connections that were found and deemed unnecessary were either physically divorced from the flare by a blind, or the valve at the flare header was closed and a car seal was placed on that valve. The AMP for the 433 Unit Plant Flare system includes approximately 100 valves with car seals. In general, car-sealed valves will only be opened for special maintenance activities such as a shutdown. These car-sealed valves will be monitored monthly to verify that the valves have not been opened and that the seals are still intact. Valves that are found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car seals broken to support maintenance activities (such as preparing an exchanger for maintenance) will not be reported in the semiannual report. Those car seals will be replaced when the maintenance activity is completed.

The spreadsheets attached have a line by line analysis of the flare connection on the 433 Unit Flare header. There are two separate spreadsheets associated with this monitoring plan which include:

Non-Acid Flare Header to the 433 Flare Sources; and
Acid Flare Header to the 433 Flare Sources.

A statement confirming no crossover or sour gas entry points.

As noted previously, the 433 Unit Flare is isolated. There are no crossovers or entry points where H2S, other than the fuel gas system, can be introduced into the 433 Unit Plant flare stream.

There are no sample points where H2S is vented back to the flare as part of the sampling process.

An explanation of conditions that ensure low emission rates. On the attached spreadsheets there are line by line listings of the flare connections. A summary of the connections is below.

Overall, the concentration of H2S in any part of this unit is extremely low (< 5 ppm). Unit feedstock consists of butanes/butylenes (BB) from the catalytic cracking units and occasionally propanes/propylenes (PP) from the 1232 catalytic cracking unit. Based upon laboratory samples collected over the past year, BB H2S content from the catalytic cracking units averaged between 0.5 and 2.5 ppm. PP contributes negligible H2S. These feedstocks enter 433 via V-1 surge drum, and are then passed through two caustic treaters to remove any low levels of H2S and mercaptans with a caustic solution. Next, the feed is sent to the Deethanizer which removes any light-ends including ethane, H2S, water, etc. Samples of the deethanized 433 feed over the past year have consistently shown negligible H2S content.

When the deethanized 433 feed (negligible H2S content) reaches the Acid Reaction section, all remaining sulfur compounds (mostly mercaptans) are reacted to Acid Soluble Oil (ASO). ASO is a non-volatile by-product of alkylation. Beyond the reaction section of the unit, there is no H2S.

Another notable safeguard which reduces the possibility of sending H2S to the flare, via any portion of the unit downstream of the reaction section, is the T-3 Acid Relief Neutralizer (ARN). The T-3 ARN operates to neutralize any streams that may contain acidic compounds prior to being routed to the 433 flare. The tower circulates potassium hydroxide (KOH) solution in order to accomplish this neutralization. Any low levels of H2S would be neutralized upon contact with the circulating KOH solution.

The 433 flare is purged with refinery fuel gas supplied from the Girard Point Main Fuel Gas Drum. This source is monitored by an Air Management Services certified CEM. Fuel gas analysis data for the past year averaged 40 ppm H2S.

Non-Acid Flare Header to the 433 Flare Sources

Refer to the Non-Acid Flare Header to the 433 Sources spread sheet for the line by analysis. For the Unit 433 Non-Acid portion of the 433 Unit Plant Flare, there are 103 connections. Of the 103 connections; 45 are car-sealed closed, 39 are pressure relief valves, 8 have been taken out-of-service and/or capped/blinded and 4 are seal pots. Of the remaining 7 connections: 4 are associated with the hydrogen compressor seal / packing gland nitrogen sweep vent; 2 are fuel gas connections; and 1 connection (valve) is associated with the V-907 caustic flash drum vent.

The item numbers below can be used to locate the item on the spread sheet.

Item #'s 2, 4, 6, 9, 12, 14, 16, 18, 21, 23, 25, 27, 28, 29, 31, 34, 36, 38, 40, 44, 45, 47, 48, 50, 51, 53, 55, 56, 59, 62, 64, 69, 74, 76, 77, 80, 81, 82, 86, 88, 90, 92, 94, 97 and 103 are car-sealed closed. These items are chiefly PSV bypasses.

Item #'s 1, 3, 5, 8, 10, 11, 13, 15, 17, 19, 20, 22, 24, 26, 30, 33, 35, 37, 39, 43, 49, 57, 58, 60, 61, 63, 65, 66, 67, 68, 70, 73, 79, 85, 89, 93, 96, 98 and 102 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 41, 42, 46, 87, 91 and 95 have been taken out-of-service and/or blinded / capped. Item #'s 71 and 72 were removed.

Item #'s 52, 54, 100 and 101 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

Item #'s 75, 78, 83 and 84 are associated with the hydrogen compressor seal / packing gland nitrogen sweep vent. All 14 sample results (attached) showed 0 ppm H2S.

Item #'s 7 and 32 are fuel gas connections that originate from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Item # 99 is associated with the caustic flash drum vent. All 14 sample results (attached) showed 0 ppm H2S.

Acid Flare Header to the 433 Flare Sources

Refer to the Acid Flare Header to the 433 Flare Sources spread sheet for the line by analysis. For the Unit 433 Acid Relief Flare Header portion of the 433 Unit Plant Flare, there are 110 connections. Of the 110 connections; 61 are either car-sealed closed or have been taken out-of-service, 21 are pressure relief valves, and 11 are seal pots. Of the

remaining 17 connections; 8 are pressure control valves, 4 relate to samplers / analyzers, 3 are fuel gas connections; 1 is a manual valve associated with the loading of fresh acid and 1 connection is associated with an exempt stream (nitrogen).

The 433 Acid Relief Neutralizer (ARN) within this section of the unit operates to neutralize acid containing hydrocarbon streams being vented to the flare by countercurrently contacting the stream with a solution of KOH. Prior to being vented to the flare, via the ARN, all of the acid-containing streams have negligible (< 1 ppm) levels of H2S due to the consumption of the sulfur species in the reaction section of the unit. Any trace H2S would be neutralized in the caustic environment of the ARN.

The item numbers below can be used to locate the flare connection and stream information on the spread sheet.

Item #s 5, 7, 9, 21-27, 32, 34-41, 43, 46-48, 50, 52, 54, 56, 58-62, 68, 70, 76, 78, 79, 80, 83, 85, 86, 88, 89, 92, 93, 94, 97, 99, 100, 101, 103, 104, 106, 107 and 109 are car-sealed closed. These items are chiefly PSV bypasses. Item #'s 33, 44, and 74 have been taken out-of-service and/or blinded / capped. Item #'s 10, 11, and 57 were removed.

Item #'s 2, 3, 12, 15, 16, 17, 64, 66, 67, 69, 71, 72, 75, 81, 84, 87, 90, 96, 98, 102 and 105 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Item #'s 6, 8, 31, 42, 45, 49, 51, 53, 55, 77 and 95 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

Item #'s 4, 13, 18, 73, and 108 represent pressure control emergency block valves that would only be used during operational malfunctions / shutdowns or are associated with the fresh acid part of the unit. Operators in the control room would be notified, via alarm, if any of these events occur. All streams associated with these connections are either post-reaction or fresh acid streams which would contain negligible (< 1 ppm) amounts of H2S. Further, each stream would relieve to the ARN, prior to the flare, which would effectively neutralize any *de minimus* levels of H2S in the stream. Item #'s 65, 82 and 91 are pressure control valves each emitting a continuous stream to the flare. In each case, the stream consists of no H2S and is under a nitrogen blanket.

Item #'s 28, 29, 30, and 63 are samplers / analyzers within the unit. Item #28 pulls a circulating acid sample which would contain 0 ppm H2S. Item #29 samples recycle isobutene and olefin feed. The recycled isobutene is a post-reaction (0 ppm H2S) product and olefin feed samples have consistently shown 0 ppm hydrogen sulfide levels in this stream. Item #63 samples another post-reactant product (isostripper side

draw) which would also contain 0 ppm H2S. Further, all of these sample connections relieve to the ARN prior to discharge to the flare.

Item #'s 1, 19 and 110. These items are fuel gas connections that originate from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Item #14 is a manual valve opened only when fresh acid is loaded. As previously mentioned, there is no (0 ppm) H2S in fresh HF acid.

Item #20 would only involve a nitrogen purge to the flare and accordingly would be exempt from monitoring.

Supporting test results using H_2S monitoring

Non-Acid Flare Header to the 433 Flare Sources – Supporting test results are included for the hydrogen compressor seal / packing gland nitrogen sweep vent (all 14 samples were not detected for H2S) and the caustic flash drum vent (all 14 samples were not detected for H2S). All other connections to the Non-Acid portion of this unit are either: car-sealed closed, pressure relief valves, out-of-service / removed, seal pots or are associated with the fuel gas system, which is being monitored by a CEMs certified in accordance with Philadelphia Air Management Services ("AMS") requirements.

Acid Flare Header to the 433 Flare Sources – No sampling was performed for the Acid Flare Header portion of the unit due to, as previously described, no H2S sources or contributions to the flare system. Most connections in this part of the unit are designed to relieve only during operational malfunctions or shutdowns. When inadvertently relieved, as described above, these connections involve the post-reaction side of the process which consumes sulfur in the reactor or involve fresh acid. Further, residual and low levels of H2S would be neutralized by the ARN prior to discharge to the flare. All connections to the Acid portion of this unit are either: car-sealed closed, out-of-service / removed, pressure relief valves, seal pots, exempt (<20 ppm H2S) or are associated with the fuel gas system, which is being monitored by a CEMs that has been certified in accordance with AMS requirements.

A description of how the sampling is representative of normal operation

Non-Acid Flare Header to the 433 Flare Sources – Sampling was conducted for both the hydrogen compressor and the caustic flash drum between 6/11/2007 and 6/25/2007. Operational conditions during this period were evaluated and determined to be representative of normal operation.

Acid Flare Header to the 433 Flare Sources – As described in Section 4, sampling was not conducted in this portion of the unit as there is no H2S.

Identification of a representative process parameter to be monitored as an indicator of stream sulfur

Other than one-time sampling performed for the two flare header sources, the 433 Unit Flare connections are either:

Fuel gas connection monitored with an AMS-certified CEM;
Exempt pressure relief valves;
Seal pots which operate like relief valves;
Associated with nitrogen purging (exempt);
Connections in which the H2S concentration is < 20 ppm (exempt);
Car-sealed closed (verified on a monthly basis); or
Connections taken OOS and blinded/capped.

Accordingly, there are no further sampling activities proposed for any of the connections associated with this monitoring plan. Car-seals and seal pots are regularly checked and the fuel gas CEMs will continuously monitor H2S for those associated connections.

PESSunoco will implement a specific procedure written to ensure that PESSunoco will adhere to all of the provisions contained within this monitoring plan. The procedure addresses the specific process from the discovery of a potential regulatory condition (i.e. car seal valve broken and valve discovered open, etc.), to what internal actions must occur, to ultimate reporting (if necessary).

A suggested parameter limit for each gas stream and a review schedule

Other than one-time sampling performed for the two Non-Acid flare header sources, the 433 Unit Flare connections were either:

Fuel gas connection monitored with an AMS-certified CEM;
Exempt pressure relief valves;
Seal pots which operate like relief valves;
Associated with nitrogen purging (exempt);
Connections in which the H2S concentration is < 20 ppm (exempt);
Car-sealed closed (verified on a monthly basis); or
Connections taken OOS and blinded/capped.

Accordingly, there are no further sampling activities proposed for any of the connections associated with this monitoring plan. Car seals and seal pots are regularly checked and the fuel gas CEMs will continuously monitor H2S for those associated connections.

PESSunoco will implement a specific procedure written to ensure that PESSunoco will adhere to all of the provisions contained within this monitoring plan. The procedure addresses the specific process from the discovery of a potential regulatory condition (i.e. car seal valve broken and valve discovered open, etc.), to what internal actions must occur, to ultimate reporting (if necessary).

SECTION H. SUNOCO MARCUS HOOK REFINERY

In August 2012, certain air contaminant sources related to petroleum refining and located in Sunoco Inc.'s Marcus Hook refinery which were permitted under Title V operating permit No. 23-00001 (originally issued on November 18, 2008) and the air contaminant sources located in Sunoco's Philadelphia refinery which are permitted under Title V operating Permit No. V95-038 were determined to be a single facility for New Source Review (NSR), Prevention of Significant Deterioration (PSD) and Title V applicability purposes in accordance with a determination that the facilities were one source. As of July 6, 2013, after the change in ownership of both Marcus Hook and Philadelphia refinery air contaminant sources as well as permanent surrender of crude refining capabilities at Marcus Hook, the two facilities are no longer considered a single facility. However, PES continues to include emissions changes to air contaminant sources at the Marcus Hook refinery that occurred prior to July 6, 2013 for NSR, PSD, and Title V applicability purposes.

* This is a State requirement and is not Federally enforceable.

** This is a Local requirement and is not Federally enforceable.

Attachment F2:
Title V/State Operating Permit No. V06-016 Without Tracked Changes

City of Philadelphia
Department of Public Health
Air Management Services

Title V/State Operating Permit No. V06-016

Philadelphia Energy Solutions Refining and Marketing LLC

3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: July 18, 2014
Effective Date: July 18, 2014
Amendment Date: September 11, 2015
Expiration Date: July 18, 2019

City of Philadelphia
Department of Public Health
Air Management Services

Effective Date: July 18, 2014

Expiration Date: July 18, 2019

Amendment Date:

Replaces Permit No. V06-016

SECTION A. SOURCE IDENTIFICATION

In accordance with the provisions of the Pennsylvania Code Title 25, Philadelphia Code Title III, and Air Management Regulation (AMR) XIII, the Permittee (Permittee) identified below is authorized by Philadelphia Air Management Services (AMS) to operate the air emission source(s) listed in Table A-1. This facility is subject to all terms and conditions specified in this permit. Nothing in this permit relieves the Permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

Facility:	Philadelphia Energy Solutions Refining and Marketing LLC
Owner:	Philadelphia Energy Solutions Refining and Marketing LLC
Location:	3144 Passyunk Avenue, Philadelphia, PA 19145
Mailing Address:	Same
SIC Code(s):	2911
Plant ID:	01501
Facility Contact:	Janet C. Ferris
Phone:	(215) 339-7146
Permit Contact:	Janet C. Ferris
Phone:	(215) 339-7146
Responsible Official:	Mark Brandon
Title:	Vice President and General Manager

Edward Wiener, Chief of Source Registration _____ Date

TABLE A1-FACILITY INVENTORY LIST

Group 01 – Boilers

ID Group	Source Name	Capacity	Fuel/Material^	Construction Date
CU-018 (GP)	#37 Boiler	495 MM Btu/hr	Refinery Gas	1952
CU-020 (GP)	#39 Boiler	495 MM Btu/hr	Refinery Gas	1952
CU-021 (GP)	#40 Boiler	660 MM Btu/hr	Refinery Gas	1954
CU-022 (GP)	#45 Boiler	350 MM Btu/hr	Refinery Gas	2014
CU-025 (PB)	Boiler No. 1	5.23 MM Btu/hr	No. 2/Natural Gas	1982

Group 02 – Process Heaters

CU-004 (GP)	Unit 1232 B-104 Heater	70 MM Btu/hr	Refinery Gas	1954
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	45 MM Btu/hr	Refinery Gas	1958
CU-006 (GP)	Unit 1332 H-602 Heater	49 MM Btu/hr	Refinery Gas	1958
CU-007 (GP)	Unit 1332 H-601 Heater	48 MM Btu/hr	Refinery Gas	1958
CU-008 (GP)	Unit 1332 H-600 Heater (IDLED)	21.3 MM Btu/hr	Refinery Gas	1958
CU-009 (GP)	Unit 1332 H-2 Heater	60 MM Btu/hr	Refinery Gas	2005
CU-010 (GP)	Unit 1332 H-401 Heater	233 MM Btu/hr	Refinery Gas	1958
CU-011 (GP)	Unit 1332 H-400 Heater	186 MM Btu/hr	Refinery Gas	1958
CU-012 (GP)	Unit 1332 H-3 Heater	43 MM Btu/hr	Refinery Gas	1958
CU-013 (GP)	Unit 137 F-1 Heater	415 MM Btu/hr	Refinery Gas	1952
CU-014 (GP)	Unit 137 F-2 Heater	155 MM Btu/hr	Refinery Gas	1952
CU-015 (GP)	Unit 137 F-3 Heater	60 MM Btu/hr	Refinery Gas	1974
CU-016 (GP)	Unit 231 B-101 Heater	104.5 MM Btu/hr	Refinery Gas	1957
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	260 MM Btu/hr	Refinery Gas	1973
CU-101 (PB)	Unit 210 H-101 Heater	192 MMBTU/hr	Refinery Gas	Dec-64
CU-102 (PB)	Unit 210 H-201 Heater	254 MMBTU/hr	Refinery Gas	May-73
CU-103 (PB)	Unit 210 13H-1 Heater	235.4 MMBTU/hr	Refinery Gas	May-73

CU-108 (PB)	Unit 860 2H-1 Heater (IDLED)	49.0 MMBTU/hr	Refinery Gas	Mar-67
CU-109 (PB)	Unit 860 2H-2 Heater	69.8 MMBTU/hr	Refinery Gas	Mar-67
CU-110 (PB)	Unit 860 2H-3 Heater	174.7 MMBTU/hr	Refinery Gas	Mar-67
CU-111 (PB)	Unit 860 2H-4 Heater	99.4 MMBTU/hr	Refinery Gas	Mar-67
CU-112 (PB)	Unit 860 2H-5 Heater	155 MMBTU/hr	Refinery Gas	Mar-67
CU-113 (PB)	Unit 860 2H-6 Heater (IDLED)	36.7 MMBTU/hr	Refinery Gas	Mar-67
CU-114 (PB)	Unit 860 2H-7 Heater	59 MMBTU/hr	Refinery Gas	Mar-67
CU-115 (PB)	Unit 860 2H-8 Heater	49.6 MMBTU/hr	Refinery Gas	Mar-67
CU-118 (PB)	Unit 864 PH-1 Heater	80 MMBTU/hr	Refinery Gas	Aug-71
CU-123 (PB)	Unit 864 PH-7 Heater	45.5 MMBTU/hr	Refinery Gas	Aug-71
CU-124 (PB)	Unit 864 PH-11 Heater	74 MMBTU/hr	Refinery Gas	Aug-71
CU-125 (PB)	Unit 864 PH-12 Heater	85.1 MMBTU/hr	Refinery Gas	Aug-71
CU-126 (PB)	Unit 865 11H-1 Heater	87.3 MMBTU/hr	Refinery Gas	May-73
CU-127 (PB)	Unit 86511H-2 Heater	64.2 MMBTU/hr	Refinery Gas	May-73
CU-128 (PB)	Unit 866 12H-1 Heater	61.2 MMBTU/hr	Refinery Gas	May-73
CU-129 (PB)	Unit 868 8H-101 Heater Inc.	60.0 MMBTU/hr	Refinery Gas / Natural Gas	7/2003
CU-137 (PB)	Unit 870 (Tier II Low Sulfur Gas Hydrodesulfurization Plant), H1 Heater	97 MMBTU/hr	Refinery Gas / Natural Gas	2004
CU-138 (PB)	Unit 870 (Tier II Low Sulfur Gas Hydrodesulfurization Plant), H2 Heater	53 MMBTU/hr	Refinery Gas / Natural Gas	2004
CU-139	Unit 859 1H-1 Heater	98 MMBTU/hr	Refinery Gas / Natural Gas	2009
CU-140 (PB)	Unit 870 (Low Sulfur Gas Hydrodesulfurization Plant), H3 Heater	91 MMBTU/hr	Refinery Gas / Natural Gas	2018

Group 03 - Flares

P-117 (GP) - CD012	1231 Flare – Unit 1232		RFG	1946
P-118 (GP) – CD013	1232 Flare – Unit 1232		RFG	Replaced 2005

P-119 (GP) - CD014	433 Flare		RFG	1972
P-642 (PB) CD111	Flare, North Flare in South Yard		RFG	Replaced 2004
P-643 (PB) CD112	Flare, South Flare in South Yard ~~(currently idled)~~		RFG	1973
~~P-646 (PB)~~	~~Flares (2), Emergency Sulfur Plant~~ To Be Removed		~~RFG~~	~~Replaced 2005~~
CD-104	LPG Flare	Used by P-638		

Group 04 - Loading Facilities and Control Equipment

P-129 (GP)	1733 Tank Truck Loading – Cumene			
P-183 (GP)	Unit 1732 benzene railcar unloading station			
P-637 (GP)	Butane Railcar Loading/Unloading			
P-638 (PB)	Propane Loading Station			
P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities			

Group 05 – Sulfur Recovery Units

P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	100 tons/day		
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	100 tons/day		
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Used by P-659 and P-660		
CD-109	Tail Gas Incinerator (TGU-1)	Used by P-659 and P-660		
CD-114	TGU 2 Incinerator			

~~CD-113~~	~~Backup Tail Gas Unit (BUTGU)~~ REMOVED	~~Used by P-659 and P-660~~		~~10/2002~~

Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV

[40 CFR 60.480, 60.590, & 63.648; 25 Pa Code 129.58; AMR V Section XIII A., 40 CFR 61 Subpart J]

Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components Subject to 40 CFR 63 Subpart H

[40 CFR 63.160-182; 25 Pa Code 129.571; AMR V Section XIII A & B.]

Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[25 Pa Code 129.58, Case-by-case RACT, 25 Pa Code §§129.91-129.95; AMR V Section XIII A.]

Group 09 – Cooling Towers

P-125 (GP)	Cooling Tower 1232 - Unit 1232	50,000 gallons per minute		
P-126 (GP)	Cooling Tower 433 - Unit 433			
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733			
P-128 (GP)	Cooling Tower 137 – Unit 137			
P-632 (PB)	Cooling Tower, Unit 868	1,110,000		
P-633 (PB)	Cooling Tower, Unit 210	1,566,000		
P-634 (PB)	Cooling Tower, Unit 864	1,080,000		
P-635 (PB)	Cooling Tower, Complex	3,158,000		

Group 10 – Miscellaneous Process Vents (Group 1) subject to 40 CFR 63 Subparts G and CC

P-184 (GP)	Four vents [one goes to CD-006, and three go to a process heater (CD-006) or to CD-012 or CD-013]	1.Fuel gas from E-401 absorber at Unit 231: controlled to a flare per 63.643(a)(1) 2. Off gas from sour water stripper 8733: controlled to a flare per		

		63.643(a)(1) 3.Off gas from Merox unit at Unit 433: controlled via heater or flare 4. Vacuum tower off gas at Unit 137 via heater		
CD-006	F-1 Heater	Used by P-184		
P-181	Six vents (go to CD-012 or CD-013)	1. Steam use in UE6, UE12, UE24 2. P004 3. Part of sources P-123 and P-114 4. Extractor Tower PCV, Extractor receiver vent, Water receiver vent, Solvent Regen Ejector vent, Deprop overhead vent, Benzene recycle tower vent 5. Part of source P-115		
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	Vents at 210 Unit A/B Vacuum Tower		

Group 13A – Tanks Subject to 40 CFR 63 Subpart G

P-001 (GP)	T-1116, EFR	>40M Gal	Gasoline Components	1953
P-005 (GP)	T-217, IFR	>40M Gal	Benzene	1991
P-017 (GP)	T-790, IFR	>40M Gal	Benzene	1962
P-018 (GP)	T-791, IFR	>40M Gal	Benzene	1962
P-021 (GP)	T-795, IFR	>40M Gal	Benzene	1962
P-022 (GP)	T-798, IFR	>40M Gal	Benzene	1964
P-023 (GP)	T-799, IFR	>40M Gal	Benzene	1964
P-024 (GP)	T-1117, EFR	>40M Gal	Udex	1953
P-025 (GP)	T-1205, IFR	>40M Gal	Benzene	1972
P-026 (GP)	T-1208, IFR	>40M Gal	Benzene	1960
P-029 (GP)	T-1214, IFR	>40M Gal	Benzene	1961
P-163 (GP)	T-1209, IFR	>40M Gal	Benzene	1960

P-523 (PB)	Tank # 121, IFR	>40M Gal	Cumene	1940

Group 13B - Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC

P-012 (GP)	T-272, IFR	>40M Gal	Recovered Oil	1971
P-015 (GP)	T-285, IFR	>40M Gal	Gasoline Components	1971
P-016 (GP)	T-286, IFR	>40M Gal	Gasoline Components	1948
P-034 (GP)	T-276, IFR	>40M Gal	Gasoline Components	1945
P-510 (PB)	T-36, IFR	>40M Gal	Gasoline Components	
P-538 (PB)	T-172	>40M Gal	Gasoline Components	
P-545 (PB)	Tank #190, IFR	>40M Gal	Reformer Feed	1950
P-547 (PB)	Tank #204, IFR	>40M Gal	Dewatering	1931
P-594 (PB)	Tank #847, IFR	>40M Gal	Crude Oil	1954
P-603 (PB)	Tank #885, IFR	>40M Gal	Crude Oil	1974
P-604 (PB)	Tank #886, IFR	>40M Gal	Crude Oil	1974

Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb

P-009 (GP)	T-250, IFR	>40M Gal	Distillate	1988
P-010 (GP)	T-251, IFR	>40M Gal	Distillate	1993
P-134 (GP)	T-270, IFR	>40M Gal	Recovered Oil	1992
P-135 (GP)	T-767, IFR	>40M Gal	Recovered Oil	1992
P-136 (GP) (temp inactive)	T-768, IFR	>40M Gal	Recovered Oil	1994
P-137 (GP)	T-1101, IFR	>40M Gal	Recovered Oil	2011
P-159 (GP)	T-1086	>40M Gal	Spent caustic	1954
P-160 (GP)	T-1087	>40M Gal	Spent caustic	1954
P-174 (GP)	T-1007	>40M Gal	RCRA CC waste	1990
P-501 (PB)	Tank # 26, IFR	>40M Gal	Ethanol	1995

P-511 (PB)	Tank # 37, IFR	>40M Gal	Gasoline Components	1994

Group 14A – External Floating Roof Tanks Subject to only Local and State Regulations

Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC

P-502 (PB)	Tank # 27, EFR	>40M Gal	Gasoline Components	1976
P-503 (PB)	Tank # 28, EFR	>40M Gal	Alkylate	1958
P-504 (PB)	Tank # 29, EFR	>40M Gal	Reformate	1955
P-507 (PB)	Tank # 33, EFR	>40M Gal	Gasoline Components	1956
P-508 (PB)	Tank # 34, EFR	>40M Gal	Gasoline Components	1954
P-509 (PB)	Tank # 35, EFR	>40M Gal	Gasoline Components	1954
P-512 (PB)	Tank # 38, EFR	>40M Gal	Gasoline Components	1959
P-513 (PB)	Tank # 39, EFR	>40M Gal	Gasoline Components	1955
P-514 (PB)	Tank # 40, EFR	>40M Gal	Gasoline Components	1982
P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	>40M Gal	Recovered Oil	1981
P-525 (PB)	Tank # 126, EFR	>40M Gal	Reformer Feed	1955
P-526 (PB)	Tank # 128, EFR	>40M Gal	Reformate	1959
P-527 (PB)	Tank # 129, EFR	>40M Gal	Reformate	1971
P-537 (PB)	Tank # 162, EFR	>40M Gal	Gasoline Components	1908
P-540 (PB)	Tank # 176, EFR	>40M Gal	Reformer Feed	1967
P-541 (PB)	Tank # 178, EFR	>40M Gal	Gasoline Blending Components	1974
P-542 (PB)	Tank #179, EFR	>40M Gal	Reformer Feed	1974
P-546 (PB)	Tank #191, EFR	>40M Gal	Recovered Oil	1958
P-579 (PB)	Tank #826, EFR	>40M Gal	Crude Oil	2002
P-587 (PB)	Tank #840, EFR	>40M Gal	Crude Oil	1953
P-588 (PB)	Tank #841, EFR	>40M Gal	Crude Oil	1953
P-590 (PB)	Tank #843, EFR	>40M Gal	Crude Oil	1954
P-594 (PB)	Tank #847, EFR	>40M Gal	Crude Oil	1954

P-595 (PB)	Tank #848, EFR	>40M Gal	Distillate Components	
P-599 (PB)	Tank #881, EFR	>40M Gal	Crude Oil	1958
P-600 (PB)	Tank #882, EFR	>40M Gal	Crude Oil	1959
P-601 (PB)	Tank #883, EFR	>40M Gal	Crude Oil	1961
P-602 (PB)	Tank #884, EFR	>40M Gal	Crude Oil	1974
P-603 (PB)	Tank #885, EFR	>40M Gal	Crude Oil	1974
P-604 (PB)	Tank #886, EFR	>40M Gal	Crude Oil	1974

Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent)

P-006 (GP)	T-228, EFR		Stormwater/Process Water	1991
P-155 (GP)	T-844	>40M Gal	#2 sep. water	1976
P-162 (GP)	T-1136	>40M Gal	#4 sep. water	1976
P-624 (PB)	Tank # 7300, EFR	NA	Stormwater/Process Water	1992
P-627 (PB)	Tank #7308, EFR	NA	Stormwater/Process Water	1972

Group 15A – Group 2 Storage Tanks

P-002 (GP)	T-1216, IFR	>40M Gal	Cumene	1975
P-003 (GP)	T-1217, IFR	>40M Gal	Cumene	1961
P-019 (GP)	T-792, Fixed Roof	>40M Gal	Cumene	1962
P-020 (GP)	T-793, Fixed Roof	>40M Gal	Cumene	1962
P-027 (GP)	T-1211, Fixed Roof	>40M Gal	Cumene	1960
P-028 (GP)	T-1213, Fixed Roof	>40M Gal	Cumene	1960
P-030 (GP)	T-1215, Fixed Roof	>40M Gal	Cumene	1961
P-031 (GP)	T-1219, Fixed Roof	>40M Gal	Cumene	1961
P-032 (GP)	T-273, Fixed Roof	>40M Gal	Cat Charge Stock	1941
P-035 (GP)	T-280, Fixed Roof	>40M Gal	Cat Charge Stock	1947
P-036 (GP)	T-282, Fixed Roof	>40M Gal	Low Sulfur Diesel	1947
P-037 (GP)	T-284, Fixed Roof	>40M Gal	Low Sulfur Diesel	1948
P-039 (GP)	T-494, Fixed Roof	>40M Gal	Cutting Oil	1965
P-144 (GP)	T-219	>40M Gal	Cutter stock	1965
P-146 (GP)	T-225	>40M Gal	Non-Commercial # 6 oil	1973

P-147 (GP)	T-227	>40M Gal	Non-Commercial # 6 oil	1954
P-150 (GP)	T-281	>40M Gal	Cat charge stock	1946
P-151 (GP)	T-676	>40M Gal	Non-Commercial # 6 oil	1953
P-153 (GP)	T-794	>40M Gal	Wet glycol solvent	1990
P-154 (GP)	T-796	16.8M Gal	Glycol solvent	1962
P-157 (GP)	T-1038	>40M Gal	Non-Commercial # 6 oil	1972
P-165 (GP)	T-1212	>40M Gal	Cumene	1960
P-166 (GP)	T-1218	>40M Gal	Cumene	1960
P-167 (GP)	T-1220	>40M Gal	Cumene	1963
P-175 (GP)	T-3000	500 gal	Lube Oil	NA
P-176 (GP)	T-3001	500 gal	Lube Oil	
P-177 (GP)	T-3002	1000 gal	Lube Oil	
P-178 (GP)	T-3004	1000 gal	Lube Oil	
P-179 (GP)	T-3005	500 gal	Lube Oil	
P-515 (PB)	Tank # 42, Cone Roof	>40M Gal	Diesel	2013
P-516 (PB)	Tank # 43, Cone Roof	>40M Gal	Jet/Kero	1958
P-518 (PB)	Tank # 83, Cone Roof	>40M Gal	Super K-1	1950
P-519 (PB)	Tank # 84, Cone Roof	>40M Gal	Jet/Kero	1950
P-520 (PB)	Tank # 85, Cone Roof	>40M Gal	LS Diesel	1955
P-529 (PB)	Tank # 144, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-530 (PB)	Tank # 145, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-534 (PB)	Tank # 151, EFR	>40M Gal	Cracking Stocks	1979
P-535 (PB)	Tank # 152, Cone Roof	>40M Gal	Cracking Stocks	1959
P-551 (PB)	Tank #253, Cone Roof	>40M Gal	Heating Oil	1923
P-563 (PB)	Tank #663, Cone Roof	>40M Gal	Asphalt/Cracking Stocks	1959
P-565 (PB)	Tank #666, Cone Roof	>40M Gal	Cracking Stocks	1954
P-567 (PB)	Tank #668, Cone Roof	>40M Gal	Wash Oil	1957
P-571 (PB)	Tank #672, Cone Roof	>40M Gal	Cracking Stocks (Light Cycle Oil)	1957
P-574 (PB)	Tank #821, IFR	>40M Gal	Cracking Stocks	1941
P-575 (PB)	Tank #822, IFR	>40M Gal	Dewatering	1941
P-576 (PB)	Tank #823, Cone Roof	>40M Gal	Cracking Stocks (Low Sulfur Diesel)	1941
P-577 (PB)	Tank #824, Cone Roof	>40M Gal	Cracking Stocks	1941

P-578 (PB)	Tank #825, Cone Roof	>40M Gal	Heating Oil	1954
P-580 (PB)	Tank #831, EFR	>40M Gal	Jet/Kero	1943
P-582 (PB)	Tank #833, IFR	>40M Gal	Cracking Stocks	1950
P-584 (PB)	Tank #835, IFR	>40M Gal	Med Distillate	1953
P-585 (PB)	Tank #836, IFR	>40M Gal	Med Distillate	1954
P-623 (PB)	Tank #7275, Open Top	>40M Gal	Wastewater (Stormwater)	1952
P - (433)	Tank #1051, EFR	>40MGal	Spent Potassium Chloride	

Group 15B – Fixed Roof Tanks Subject to Subpart Kb Recordkeeping Requirements

P-158 (GP)	T-1039	>40M Gal	Non-Commercial # 6 oil	1989
P-171 (GP)	T-1004	>40M Gal	RCRA misc waste	1989
P-172 (GP)	T-1005	>40M Gal	RCRA misc waste	1989

Group 17 – Marine Loading Equipment

P-130 (GP)	Barge Loading – Girard Point Wharf			
CD-011	Thermal Oxidizer for P130	Used by P-130		
P-636 (PB)	Marine Barge Loading			

Group 18 – Fluidized Catalytic Cracking Units

P-120 (GP)	FCCU, Unit 1232 Regenerator			1964
CD-004	CO Boiler	580 MMBTU/Hr Used by P-120		
CD-115	1232 SCR	Used by P-120		
CD-116	Wet Gas Scrubber	Used by P-120		
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	47,500 bbl/day on 365 day avg, max 50,000 bbl/any given day		
CD-110	Electrostatic Precipitator	Used by P-661		

Group 19 – Inter-Refinery Pipeline Equipment

P-664 (PB)	Inter-Refinery Pipeline			

Group 20 – Alkylation Unit

P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)			
CD-014	Flare (Unit 433)	Used by P-182		
P-662 (PB)	Alkylation Unit 869			
CD-111 (P-642)	North Flare South Yard	Used by P-662		
CD-112	South Flare South Yard	Used by P-662		

Group 21 – Hydrogen Purification

P-674 (PB)	H2 Purification (Idle)			

Group 22 – Degreasing Vats

P-108 (GP)	Degreasing Vats		Degreaser	NA
(PB)	Machine/Fab Shop - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(PB)	Machine/Fab Shop - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(PB)	Machine/Fab Shop – Model SK 34.1R	25 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Garage – Model E3000	10 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	2960 gal	Diesel Fuel	

(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	4578 gal	Diesel Fuel	
(GP)	3 Boiler House - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	3 Boiler House - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	I&E Bldg – Model 250 Recycling Parts Washer	20 gal	SK Premium Gold Solvent, MSDS 82655 / 82774	

Group 23 – Butane Isomerization

P-121 (GP)	Butane Isomerization - Unit 331			

Group 25A – Refining Wastewater

P-131 (GP)	4A API Separator – WWT			
CD-002	Carbon Adsorber	Used by P-131		
P-132 (GP)	2B API Separator – WWT			
CD-003	Carbon Adsorber	Used by P-132		
P-639 (PB)	API Separators A&B – Bio Plant			
CD-105	Carbon Adsorption	Used by P-639		
P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC			
CD-010	Carbon Adsorber	Used by P-114		
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant			
CD-106	Carbon Adsorption	Used by P-640		
P-641 (PB)	Bio Plant Sewer System – Refinery			

CD-107	Carbon Adsorption	Used by P-641		
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC			
P-141 (GP)	T-1146, T-1147	Roughing Filters at WWTP	Wastewater	NA
CD-007	Carbon Adsorber	Used by P-141		
P-142 (GP)	T-1142, T-1143	Oxidation Tanks at WWTP	Wastewater	NA

Group 25B – SOCMI Wastewater

P-123	SOCMI Wastewater			
P-115	Refining Wastewater			
P-180 (GP)	Cumene Production Unit 1733			
P-181 (GP)	Benzene Production Unit 1732			

Group 26 – Benzene and Cumene Production

P-180 (GP)	Cumene Production Unit 1733			
P-181 (GP)	Benzene Production Unit 1732			
UV-15	Regenerator Bottoms Process Vent			
CUV-12	DIBP Overhead Receiver Process Vent			
CUV-312	Cumene “C” Tower Receiver Process Vent			

Group 27 – Emergency Generators and Fire Pumps

EM-001 (PB)	Caterpillar (model 3412DITTA) Emergency Generator	896 HP	Diesel	2004
EM-002 (GP)	Flood Control RICE at GP 2nd and J	147 HP	Diesel	2018

EM-003 (GP)	Flood Control RICE at GP point 2-separator	275 HP	Diesel	2018
FP-010	24PEN4 Fire Pump #4	211 Hp	Diesel	2011
FP-011	24P1 Fire Engine (Haenn's Wharf)	210 Hp	Diesel	2012
FP-012	Fire Pump (1st and Wharf #8)	475 bhp	ULSD	
FP-013	24P2 North Fire Pump (Haenn's Wharf)	210 bhp	ULSD	
FP-014	24P3 South Fire Pump (Short Pier)	350	ULSD	
FP-015	24PEN5 Fire Pump (North Yard)	250 bhp	ULSD	
FP-016	24PEN6 Fire Pump (North Yard Wharf)	250 bhp	ULSD	
FP-017	28P-1150A HF Mitigation Water Pump FP-12#1 (Unit 433)	487 bhp	ULSD	
FP-018	28P-1150B HF Mitigation Water Pump FP+12 #2 (Unit 433)	487 bhp	ULSD	
FP-019	Belmont Firehouse Williams Pump (fire pump) affixed to a trailer	750 bhp	ULSD	
FP-020	Butane Terminal Firewater System Pump #1 (JX6H-UFADF0)	460 bhp	ULSD	
FP-021	Butane Terminal Firewater System Pump #2 (JX6H-UFADF0)	460 bhp	ULSD	

Group 28 – Internal Combustion Engines

IC-002	53P-800C pump	200 bhp	Diesel	
IC-005	FE-5(2) Flood Control Pump Driver	28 bhp	Diesel	

IC-006	Godwin 894572/4 Flood Control Pump Driver	115 bhp	Diesel	
IC-007	B-2623 Flood Control Pump Driver	102 bhp	Diesel	
IC-008	Engine Set 1290 (northside of 8 Sep)	214 bhp	Diesel	
rIC-001	Rental back-up pump (2^{nd} &1^{st}, 3BH sump)	≤ 14 bhp	Diesel	
rIC-002	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-003	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-004	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-005	Rental back-up air compressor (small maintenance air compressors)	≤ 101 bhp	Diesel	
rIC-006	Rental back-up air compressor (small maintenance air compressors)	≤ 101 bhp	Diesel	
rIC-007	Rental back-up pump (WW pump 270 Tk to WWTP)	≤ 144 bhp	Diesel	

Group 29 - Stacks

S-111 (GP)	Used by CU-004, B-104 HTR			
S-112 (GP)	Used by CU-005, H-1 Debutanizer HTR			

S-113 (GP)	Used by CU-006, H-602 HTR			
S-114 (GP)	Used by CU-007, H-601 HTR			
S-115 (GP)	Used by CU-008, H-600 HTR			
S-116 (GP)	Used by CU-009, H-2 HTR			
S-117 (GP)	Used by CU-010, H-401 HTR and CU-011, H-400 HTR	Combined stack that follows NOx SCR.		
S-117A (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-117B (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-117C (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-118A (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-118B (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-118C (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-119 (GP)	Used by CU-012, H-3 HTR			
S-120 (GP)	Used by CU-013, F-1 HTR Used by CU-014, F-2 HTR			
S-122 (GP)	Used by CU-015, F-3 HTR			
S-123A (GP)	Used by CU-016, B-101 HTR			
S-123B (GP)	Used by CU-016, B-101 HTR			
S-123C (GP)	Used by CU-016, B-101 HTR			
S-124 (GP)	Used by CU-017, H-1 Iso Stripper Heater			
S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler			
S-126 (GP)	Used by CU-022, 45 Boiler			
S-127 (PB)	Used by CU-025, Boiler No. 1			

S-131 (GP)	Used by P-131, 4A API Separator Unit – WWT			
S-132 (GP)	Used by P-132, 2B API Separator Unit – WWT			
S-133 (GP)	Used by CD-004 FCCU/CO Boiler			
S-134 (GP)	Used by P-121 Butane Isomerization			
S-138 (GP)	Used by P-125, 1232 Cooling Tower			
S-139 (GP)	Used by P-126, 433 Cooling Tower			
S-140 (GP)	Used by P-127, 490 Cooling Tower			
S-141 (GP)	Used by P-128, 137 Cooling Tower			
S-142 (GP)	Used by P-129, 1733 Loading Rack			
S-143 (GP)	Used by P-130, Barge Loading – Girard Point Wharf			
S-144 (GP)	Used by P-108 Degreasing Vats			
S-145 (GP)	Used by P-109, 40 CFR 60, Subpart GGG Leaks			
S-146 (GP)	Used by P-110, 40 CFR 63, Subpart CC Leaks			
S-147 (GP)	Used by P-111, 40 CFR 63, Subpart H Leaks			
S-148 (GP)	Used by P-112, 40 CFR 63, Subpart J			
S-149 (GP)	Used by P-113, 29 PA 129.58 Equipment Leaks			
S-150 (GP)	Used by P-114, 40 CFR 61, Subpart FF Wastes			

S-151 (GP)	Used by P-115, Miscellaneous Wastewater			
S-153 (GP)	Used by P-117, 1231 Flare			
S-154 (GP)	Used by P-118, 1232 Flare			
S-155 (GP)	Used by P-119, 433 Flare			
S-156 (GP)	Used by P-120, 1232 FCCU			
S-200 (GP)	Used by P-001, T-1116			
S-201 (GP)	Used by P-002, T-1216			
S-202 (GP)	Used by P-003, T-1217			
S-204 (GP)	Used by P-005, T-217			
S-205 (GP)	Used by P-006, T-228			
S-208 (GP)	Used by P-009, T-250			
S-209 (GP)	Used by P-010, T-251			
S-211 (GP)	Used by P-012, T-272			
S-214 (GP)	Used by P-015, T-285			
S-215 (GP)	Used by P-016, T-286			
S-216 (GP)	Used by P-017, T-790			
S-217 (GP)	Used by P-018, T-791			
S-218 (GP)	Used by P-019, T-792			
S-219 (GP)	Used by P-020, T-793			
S-220 (GP)	Used by P-021, T-795			
S-221 (GP)	Used by P-022, T-798			
S-222 (GP)	Used by P-023, T-799			
S-223 (GP)	Used by P-024, T-1117			
S-224 (GP)	Used by P-025, T-1205			
S-225 (GP)	Used by P-026, T-1208			
S-226 (GP)	Used by P-027, T-1211			
S-227 (GP)	Used by P-028, T-1213			
S-228 (GP)	Used by P-029, T-1214			
S-229 (GP)	Used by P-030, T-1215			
S-230 (GP)	Used by P-031, T-1219			
S-231 (GP)	Used by P-032, T-273			

S-232 (GP)	Used by P-033, T-275			
S-233 (GP)	Used by P-034, T-276			
S-234 (GP)	Used by P-035, T-280			
S-235 (GP)	Used by P-036, T-282			
S-236 (GP)	Used by P-037, T-284			
S-238 (GP)	Used by P-039, T-494			
S-242 (GP)	Used by P-043, T-291			
S-243 (GP)	Used by P-044, T-292			
S-244 (GP)	Used by P-045, T-229			
S-245 (GP)	Used by P-134, T-270			
S-246 (GP)	Used by P-135, T-767			
S-247 (GP)	Used by P-136, T-768			
S-248 (GP)	Used by P-137, T-1101			
S-249 (GP)	Used by P-163, T-1209			
S-250 (GP)	Used by P-165, T-1212			
S-251 (GP)	Used by P-144. T-219			
S-252 (GP)	Used by P-141, Two roughing filters (110 and 111)			
S-253 (GP)	Used by P-142, Two oxidation tanks (101 and 102)			
S-254 (GP)	Used by P-143, 1732 and 1733 Plant Accumulators			
S-801 (PB)	Used by CU-101, Unit 210A, HTR H201			
S-802 (PB)	Used by CU-102, Unit 210B, HTR H201			
S-803 (PB)	Used by CU-103, Unit 210C, HTR 13H1			
S-804 (PB)	Used by CU-139 (Unit 859 1H-1 heater)			
S-805 (PB)	Not in use			
S-806 (PB)	Not in use			

S-807 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4			
S-808 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4			
S-809 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5			
S-810 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5			
S-811 (PB)	Used by CU-113, Unit 860, HTR 2H6			
S-812 (PB)	Used by CU-114, Unit 860, HTR 2H7			
S-813 (PB)	Used by CU-115, Unit 860, HTR 2H8			
S-818 (PB)	Used by CU-118, Unit 864, HTR PH1			
S-822 (PB)	Used by CU-123, Unit 864, HTR PH7			
S-823 (PB)	Used by CU-124, Unit 864, HTR PH11			

S-824 (PB)	Used by CU-125, Unit 864, HTR PH12			
S-825 (PB)	Used by CU-126, Unit 865, HTR 11H1			
S-826 (PB)	Used by CU-127, Unit 865, HTR 11H2			
S-827 (PB)	Used by CU-128, Unit 865, HTR 12H1			
S-828 (PB)	Used by CU-129, FCCU 868, HTR 8H101			
S-829 (PB)	Used by CU-130, H1 Heater			
S-836 (PB)	Used by P-501, Tank #26			
S-837 (PB)	Used by P-502, Tank #27			
S-838 (PB)	Used by P-503, Tank #28			
S-839 (PB)	Used by P-504, Tank #29			
S-840 (PB)	Used by P-505, Tank #30			
S-842 (PB)	Used by P-507, Tank #33			
S-843 (PB)	Used by P-508, Tank #34			
S-844 (PB)	Used by P-509, Tank #35			
S-845 (PB)	Used by P-510, Tank #36			
S-846 (PB)	Used by P-511, Tank #37			
S-847 (PB)	Used by P-512, Tank #38			
S-848 (PB)	Used by P-513, Tank #39			
S-849 (PB)	Used by P-514, Tank #40			
S-850 (PB)	Used by P-515, Tank #42			
S-851 (PB)	Used by P-516, Tank #43			
S-853 (PB)	Used by P-518, Tank #83			
S-854 (PB)	Used by P-519, Tank #84			
S-855 (PB)	Used by P-520, Tank #85			
S-856 (PB)	Used by P-521, Tank #117			
S-858 (PB)	Used by P-523, Tank #121			
S-859 (PB)	Used by P-524, Tank #125			

S-860 (PB)	Used by P-525, Tank #126			
S-861 (PB)	Used by P-526, Tank #128			
S-862 (PB)	Used by P-527, Tank #129			
S-864 (PB)	Used by P-529, Tank #144			
S-865 (PB)	Used by P-530, Tank #145			
S-869 (PB)	Used by P-534, Tank #151			
S-870 (PB)	Used by P-535, Tank #152			
S-872 (PB)	Used by P-537, Tank #162			
S-873 (PB)	Used by P-538, Tank #172			
S-875 (PB)	Used by P-540, Tank #176			
S-876 (PB)	Used by P-541, Tank #178			
S-877 (PB)	Used by P-542, Tank #179			
S-880 (PB)	Used by P-545, Tank #190			
S-881 (PB)	Used by P-546, Tank #191			
S-882 (PB)	Used by P-547, Tank #204			
S-886 (PB)	Used by P-551, Tank #253			
S-902 (PB)	Used by P-567, Tank #668			
S-906 (PB)	Used by P-571, Tank #672			
S-909 (PB)	Used by P-574, Tank #821			
S-910 (PB)	Used by P-575, Tank #822			
S-911 (PB)	Used by P-576, Tank #823			
S-912 (PB)	Used by P-577, Tank #824			
S-913 (PB)	Used by P-578, Tank #825			
S-914 (PB)	Used by P-579, Tank #826			
S-915 (PB)	Used by P-580, Tank #831			
S-917 (PB)	Used by P-582, Tank #833			
S-919 (PB)	Used by P-584, Tank #835			
S-920 (PB)	Used by P-585, Tank #836			
S-922 (PB)	Used by P-587, Tank #840			
S-923 (PB)	Used by P-588, Tank #841			
S-924 (PB)	Used by P-590, Tank #843			
S-929 (PB)	Used by P-594, Tank #847			

S-934 (PB)	Used by P-599, Tank #881			
S-935 (PB)	Used by P-600, Tank #882			
S-936 (PB)	Used by P-601, Tank #883			
S-937 (PB)	Used by P-602, Tank #884			
S-938 (PB)	Used by P-603, Tank #885			
S-939 (PB)	Used by P-604, Tank #886			
S-958 (PB)	Used by P-623, Tank #7275			
S-959 (PB)	Used by P-624, Tank #7300 – Bio Plant			
S-962 (PB)	Used by P-627, Tank #7308 – Bio Plant			
S-963 (PB)	Used by P-628, Tank #7309 – South Yard			
S-966 (PB)	Used by P-632, Cooling Tower – Unit 868			
S-967 (PB)	Used by P-633, Cooling Tower – Unit 210			
S-968 (PB)	Used by P-634, Cooling Tower – Unit 864			
S-969 (PB)	Used by P-635, Cooling Tower – Complex Unit			
S-970 (PB)	Used by P-636, Barge Loading			
S-972 (PB)	Used by P-638, Rail Car Loading			
S-973 (PB)	Used by P-639, Bio Plant DNF Unit A&B			
S-974 (PB)	Used by P-640, Bio Plant Sewer System			
S-975 (PB)	Used by P-641, Bio Plant Sewer System			
S-976 (PB)	Used by P-642, North Flare in South Yard			

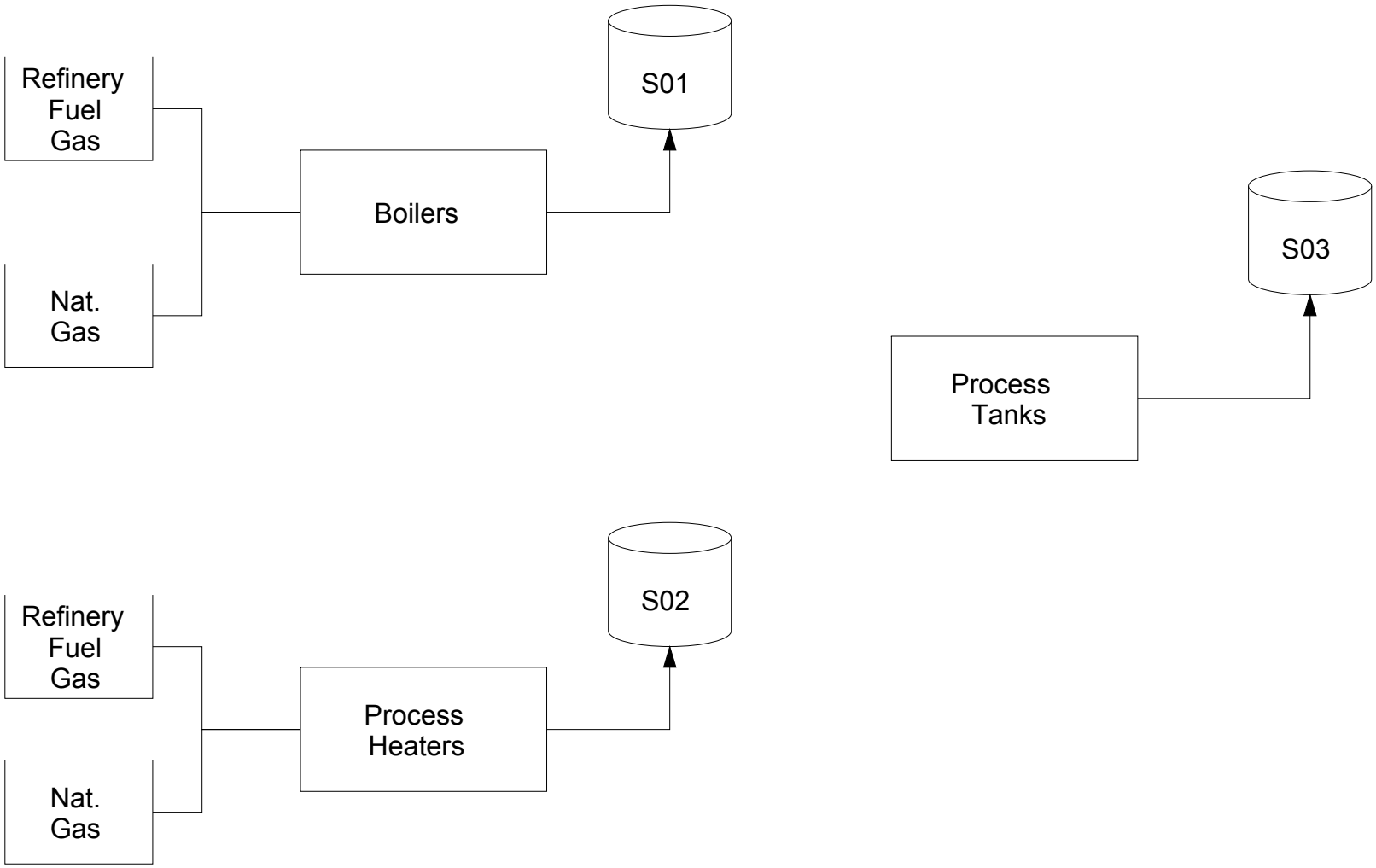
S-977 (PB)	Used by P-643, South Flare in South Yard Used by P-662, 869 Alkylation Unit			
S-978 (PB)	Used by P-638, LPG Rail Car and Tank Truck Loading/Unloading			
S-979 (PB)	Used by P-644, Two (2) Crude Rail Car Unloading Facilities			
~~S-980 (PB)~~	~~Used by P-646, Two Emergency Sulfur Plant Flare (Unit 867)~~ (To Be Removed)			
S-983 (PB)	Used by P-659 and P-660, North and South Claus Sulfur Recovery Plant (Unit 867)			
	TGU -2			
S-985 (PB)	Used by P-661, FCCU (Unit 868)			
S-986 (PB)	Used by P-662, Alkylation Unit 869			
S-987 (PB)	Used by P-664, Inter-refinery Pipeline			
S-988 (PB)	Used by P-665, 40 CFR 60, Subpart GGG Leaks			
S-990 (PB)	Used by P-667, 40 CFR 61, Subpart FF Wastes			
S-994 (PB)	Used by P-671, 25 PA Code 129.58 Equipment Leaks			
S-996 (PB)	Used by P-670, 40 CFR 61, Subpart J Equipment Leaks			
S-997 (PB)	Used by P-674, Hydrogen Purification Unit 861 (Idle)			

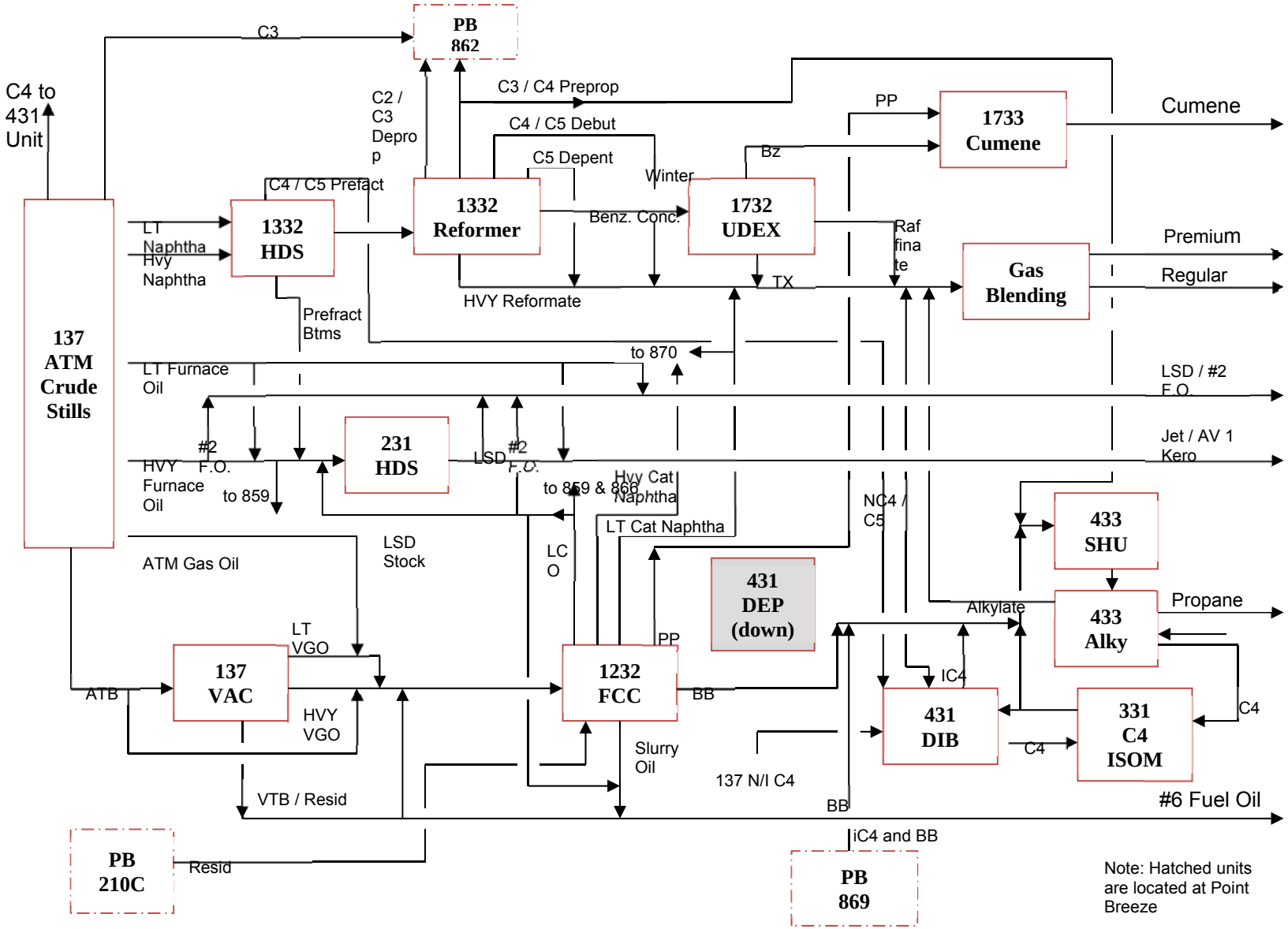
S-8701 (PB)	Used by CU-137 (Unit 870 H1 heater)			
S-8702 (PB)	Used by CU-138 (Unit 870 H2 heater)			
S-8703 (PB)	Used by CU-140 (Unit 870 H3 heater)			
S-3412 (PB)	Used by EM-001			
S-3413 (GP)	Used by EM-002			
S-3414 (GP)	Used by EM-003			

Group IN - Insignificant Activities

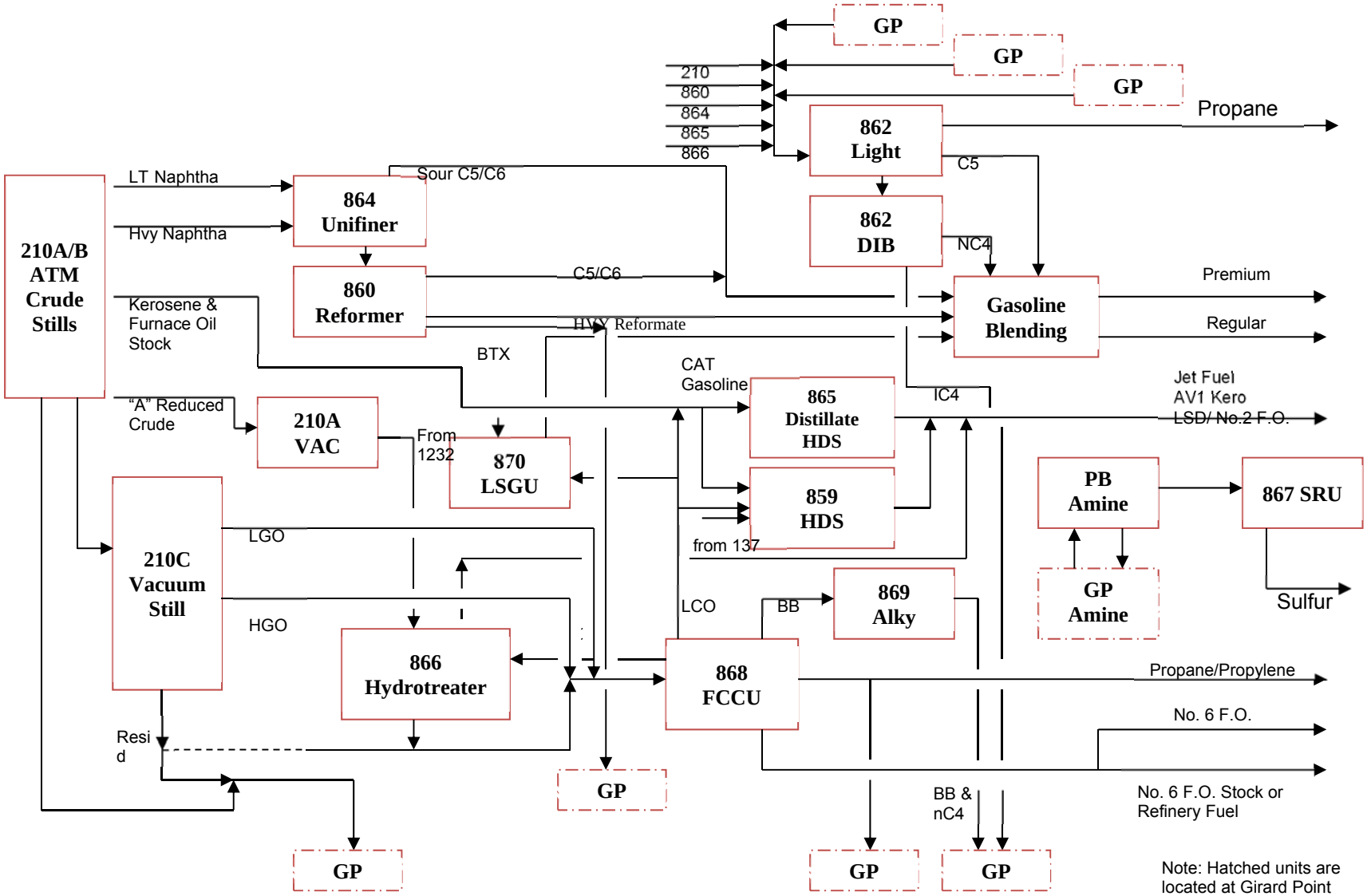
P-044 (GP)	T-292, IFR (used for odor control	Not in VOL Service	Sour Water	1945
P-046 (PB)	Eight (8) Gasoline Octane Knock Engines (Lab Equipment)	<4 bhp each	Gasoline	
(PB)	Garage – Brake Cleaner Model 26.1	2 gal	Aqueous Brake Cleaner, Armakleen MPC MSDS 82783	
(GP)	Garage – Brake Cleaner Model 26.1	2 gal	Aqueous Brake Cleaner, Armakleen MPC MSDS 82783	

^ - RFG (Refinery Fuel Gas) or Refinery Gas means either refinery gas or natural gas or any mixture thereof.


Refinery Fuel Gas
Nat. Gas
Boilers
S01
Process Tanks
S03
Refinery Fuel Gas
Nat. Gas
Process Heaters
S02



PROCESS FLOW DIAGRAM FOR THE PHILADELPHIA ENERGY SOLUTIONS REFINERY GIRARD POINT



PROCESS FLOW DIAGRAM FOR THE PHILADELPHIA ENERGY SOLUTIONS REFINERY POINT BREEZE

FACILITY INVENTORY INDEX

CD-002	Adsorber	Group 25A
CD-003	Adsorber	Group 25A
CD-004	CO Boiler	Group 18
~~CD-005~~	~~Electrostatic Precipitator~~	~~Group 18~~
CD-006	F-1 Heater	Group 10
CD-007	Adsorber	Group 25A
CD-008	NOx Selective Catalytic Reduction – 1332 Heaters 401/400	Group 02
CD-010	Carbon Adsorber	Group 25A
CD-011	Thermal Oxidizer for P130	Group 17
CD-014	Flare (Unit 433)	Group 20
CD-015	CO Oxidation Catalyst – Boiler 45	Group 01
CD-016	NOx Selective Oxidation Catalytic Recovery – Boiler 45	Group 01
CD-017	Wet Electrostatic Precipitator – Boiler 45	Group 01
CD-103	Refinery Fuel Gas System – Boilers and Heaters	Group 17
CD-104	LPG Flare	Group 04
CD-105	Carbon Adsorption	Group 25A
CD-106	Carbon Adsorption	Group 25A
CD-107	Carbon Adsorption	Group 25A
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Group 05
CD-109	Tail Gas Incinerator (TGU-1)	Group 05
CD-110	Electrostatic Precipitator	Group 18
CD-111 (P-642)	North Flare South Yard	Group 20
CD-112	South Flare South Yard	Group 20
CD-114	Tail Gas Incinerator (TGU-2)	Group 05
CU-004 (GP)	Unit 1232 B-104 Heater	Group 02
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	Group 02
CU-006 (GP)	Unit 1332 H-602 Heater	Group 02
CU-007 (GP)	Unit 1332 H-601 Heater	Group 02
CU-008 (GP)	Unit 1332 H-600 Heater	Group 02
CU-009 (GP)	Unit 1332 H-2 Heater	Group 02
CU-010 (GP)	Unit 1332 H-401 Heater	Group 02
CU-011 (GP)	Unit 1332 H-400 Heater	Group 02
CU-012 (GP)	Unit 1332 H-3 Heater	Group 02
CU-013 (GP)	Unit 137 F-1 Heater	Group 02

CU-014 (GP)	Unit 137 F-2 Heater	Group 02
CU-015 (GP)	Unit 137 F-3 Heater	Group 02
CU-016 (GP)	Unit 231 B-101 Heater	Group 02
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	Group 02
CU-018 (GP)	#37 Boiler	Group 01
CU-020 (GP)	#39 Boiler	Group 01
CU-021 (GP)	#40 Boiler	Group 01
CU-022 (GP)	#45 Boiler	Group 01
CU-025 (PB)	Boiler No. 1	Group 01
CU-101 (PB)	Unit 210 H-101 Heater	Group 02
CU-102 (PB)	Unit 210 H-201 Heater	Group 02
CU-103 (PB)	Unite 210 13H-1 Heater	Group 02
CU-108 (PB)	2H-1 Heater (IDLED)	Group 02
CU-109 (PB)	Unit 860 2H-2 Heater	Group 02
CU-110 (PB)	Unit 860 2H-3 Heater	Group 02
CU-111 (PB)	Unit 860 2H-4 Heater	Group 02
CU-112 (PB)	Unit 860 2H-5 Heater	Group 02
CU-113 (PB)	Unit 860 2H-6 Heater	Group 02
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CU-117 (PB)	Unit 861, Heater 3H-1 (Idle)	Group 02
CU-118 (PB)	Unit 864 PH-1 Heater	Group 02
CU-119 (PB)	PH-2 Heater (Idle)	Group 02
CU-120 (PB)	PH-3 Heater (Idle)	Group 02
CU-121 (PB)	PH-4 Heater (Idle)	Group 02
CU-122 (PB)	PH-5 Heater (Idle)	Group 02
CU-123 (PB)	Unit 864 PH-7 Heater	Group 02
CU-124 (PB)	Unit 864 PH-11 Heater	Group 02
CU-125 (PB)	Unit 864 PH-12 Heater	Group 02
CU-126 (PB)	Unit 865 11H-1 Heater	Group 02
CU-127 (PB)	Unit 865 11H-2 Heater	Group 02
CU-128 (PB)	Unit 866 12H-1 Heater	Group 02
CU-129 (PB)	Unit 868 8H-101 Heater	Group 02
CU-137 (PB)	Unit 870 H1 Heater	Group 02
CU-138 (PB)	Unit 870 H2 Heater	Group 02
CU-139 (PB)	Unit 859 1-H1 Heater	Group 02
CU-140 (PB)	Unit 870 H3 Heater	Group 02
P-001 (GP)	T-1116, EFR	Group 14B
P-002 (GP)	T-1216, IFR	Group 15A
P-003 (GP)	T-1217, IFR	Group 15A
P-004 (GP)	T-202, IFR	Group 15A
P-005 (GP)	T-217, IFR	Group 13A

P-006 (GP)	T-228, EFR	Group 14C
P-007 (GP)	T-238, Fixed Roof	Group 15A
P-008 (GP)	T-242, EFR	Group 14B
P-009 (GP)	T-250, IFR	Group 13C
P-010 (GP)	T-251, IFR	Group 13C
P-011 (GP)	T-271, Fixed Roof	Group 15B
P-012 (GP)	T-272, IFR	Group 13B
P-013 (GP)	T-279, Fixed Roof	Group 15A
P-015 (GP)	T-285, IFR	Group 13B
P-016 (GP)	T-286, IFR	Group 13B
P-017 (GP)	T-790, IFR	Group 13A
P-018 (GP)	T-791, IFR	Group 13A
P-019 (GP)	T-792, Fixed Roof	Group 15A
P-020 (GP)	T-793, Fixed Roof	Group 15A
P-021 (GP)	T-795, IFR	Group 13A
P-022 (GP)	T-798, IFR	Group 13A
P-023 (GP)	T-799, IFR	Group 13A
P-024 (GP)	T-1117, EFR	Group 13A
P-025 (GP)	T-1205, IFR	Group 13A
P-026 (GP)	T-1208, IFR	Group 13A
P-027 (GP)	T-1211, Fixed Roof	Group 15A
P-028 (GP)	T-1213, Fixed Roof	Group 15A
P-029 (GP)	T-1214, IFR	Group 13A
P-030 (GP)	T-1215, Fixed Roof	Group 15A
P-031 (GP)	T-1219, Fixed Roof	Group 15A
P-032 (GP)	T-273, Fixed Roof	Group 15A
P-033 (GP)	T-275, Fixed Roof	Group 15A
P-034 (GP)	T-276, IFR	Group 13B
P-035 (GP)	T-280, Fixed Roof	Group 15A
P-036 (GP)	T-282, Fixed Roof	Group 15A
P-037 (GP)	T-284, Fixed Roof	Group 15A
P-039 (GP)	T-494, Fixed Roof	Group 15A
P-040 (GP)	T-495, Fixed Roof	Group 15A
P-045 (GP)	T-229, IFR	Group 13C
P-046 (PB)	Eight (8) Gasoline Octane Knock Engines	Group IN
P-108 (GP)	Degreasing Vats	Group 22
P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC	Group 25A
P-115	Refining Wastewater	Group 25B
P-117 (GP) - CD012	1231 Flare – Unit 1232	Group 03
P-118 (GP) –	1232 Flare – Unit 1232	Group 03

CD013		
P-119 (GP) - CD014	433 Flare	Group 03
P-120 (GP)	FCCU, Unit 1232 Regenerator	Group 18
P-121 (GP)	Butane Isomerization - Unit 331	Group 23
P-123	SOCMI Wastewater	Group 25B
P-125 (GP)	Cooling Tower 1232 - Unit 1232	Group 09
P-126 (GP)	Cooling Tower 433 - Unit 433	Group 09
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733	Group 09
P-128 (GP)	Cooling Tower 137 – Unit 137	Group 09
P-129 (GP)	1733 Tank Truck Loading – Cumene	Group 04
P-130 (GP)	Barge Loading – Girard Point Wharf	Group 17
P-131 (GP)	4A API Separator – WWT	Group 25A
P-132 (GP)	2B API Separator – WWT	Group 25A
P-134 (GP)	T-270, IFR	Group 13C
P-135 (GP)	T-767, IFR	Group 13C
P-136 (GP)	T-768, IFR	Group 13C
P-137 (GP)	T-1101, IFR	Group 13C
P-141 (GP)	T-1146, T-1147	Group 25A
P-142 (GP)	T-1142, T-1143	Group 25A
P-144 (GP)	T-219	Group 15A
P-145 (GP)	T-223	Group 15A
P-146 (GP)	T-225	Group 15A
P-147 (GP)	T-227	Group 15A
P-148 (GP)	T-267	Group 15A
P-149 (GP)	T-268	Group 15A
P-150 (GP)	T-281	Group 15A
P-151 (GP)	T-676	Group 15A
P-152 (GP)	T-677	Group 15A
P-153 (GP)	T-794	Group 15A
P-154 (GP)	T-796	Group 15A
P-155 (GP)	T-844	Group 14C
P-156 (GP)	T-1108	Group 15A
P-157 (GP)	T-1038	Group 15A
P-158 (GP)	T-1039	Group 15B
P-159 (GP)	T-1086	Group 13C
P-160 (GP)	T-1087	Group 13C
P-161 (GP)	T-1128	Group 15A
P-162 (GP)	T-1136	Group 14C
P-163 (GP)	T-1209	Group 13A
P-164 (GP)	T-1210	Group 15A

P-165 (GP)	T-1212	Group 15A
P-166 (GP)	T-1218	Group 15A
P-167 (GP)	T-1220	Group 15A
P-168 (GP)	T-271	Group 15A
P-170 (GP)	T-277	Group 15A
P-171 (GP)	T-1004	Group 15B
P-172 (GP)	T-1005	Group 15B
P-173 (GP)	T-1006	Group 15B
P-174 (GP)	T-1007	Group 13C
P-175 (GP)	T-3000	Group 15A
P-176 (GP)	T-3001	Group 15A
P-177 (GP)	T-3002	Group 15A
P-178 (GP)	T-3004	Group 15A
P-179 (GP)	T-3005	Group 15A
P-180 (GP)	Cumene Production Unit 1733	Groups 25B, 26
P-181 (GP)	Benzene Production Unit 1732	Groups 25B, 26
P-181	Six vents (go to CD-012 or CD-013)	Group 10
P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)	Group 20
P-183 (GP)	Unit 1732 benzene railcar unloading station	Group 04
P-184 (GP)	Four vents (one goes to CD-006, and three go to a process heater or to CD-012 or CD-013	Group 10
P-501 (PB)	Tank # 26, IFR	Group 13C
P-502 (PB)	Tank # 27, EFR	Group 14B
P-503 (PB)	Tank # 28, EFR	Group 14B
P-504 (PB)	Tank # 29, EFR	Group 14B
P-505 (PB)	Tank # 30, EFR	Group 14B
P-506 (PB)	Tank # 32, IFR	Group 13B
P-507 (PB)	Tank # 33, EFR	Group 14B
P-508 (PB)	Tank # 34, EFR	Group 14B
P-509 (PB)	Tank # 35, EFR	Group 14B
P-510 (PB)	Tank # 36, EFR	Group 13B
P-511 (PB)	Tank # 37, IFR	Group 13C
P-512 (PB)	Tank # 38, EFR	Group 14B
P-513 (PB)	Tank # 39, EFR	Group 14B
P-514 (PB)	Tank # 40, EFR	Group 14B
P-515 (PB)	Tank # 42, EFR	Group 15A
P-516 (PB)	Tank # 43, Cone Roof	Group 15A
P-517 (PB)	Tank # 44, Cone Roof	Group 15A
P-518 (PB)	Tank # 83, Cone Roof	Group 15A
P-519 (PB)	Tank # 84, Cone Roof	Group 15A
P-520 (PB)	Tank # 85, Cone Roof	Group 15A

P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	Group 14B
P-522 (PB)	Tank # 119, IFR	Group 13B
P-523 (PB)	Tank # 121, IFR	Group 13A
P-524 (PB)	Tank # 125, EFR	Group 14B
P-525 (PB)	Tank # 126, EFR	Group 14B
P-526 (PB)	Tank # 128, EFR	Group 14B
P-527 (PB)	Tank # 129, EFR	Group 14B
P-528A (PB)	Tank # 140, Cone Roof	Group 15A
P-529 (PB)	Tank # 144, Cone Roof	Group 15A
P-530 (PB)	Tank # 145, Cone Roof	Group 15A
P-531 (PB)	Tank # 146, EFR	Group 14B
P-532 (PB)	Tank # 149, Cone Roof	Group 15A
P-533 (PB)	Tank # 150, EFR	Group 15A
P-534 (PB)	Tank # 151, EFR	Group 15A
P-535 (PB)	Tank # 152, Cone Roof	Group 15A
P-536 (PB)	Tank # 161, Cone Roof	Group 15A
P-537 (PB)	Tank # 162, EFR	Group 14B
P-538 (PB)	Tank # 172, IFR	Group 13B
P-540 (PB)	Tank # 176, EFR	Group 14B
P-541 (PB)	Tank # 178, EFR	Group 14B
P-542 (PB)	Tank #179, EFR	Group 14B
P-543 (PB)	Tank #181, EFR	Group 14B
P-544 (PB)	Tank #182, IFR	Group 13B
P-545 (PB)	Tank #190, IFR	Group 13B
P-546 (PB)	Tank #191, EFR	Group 14B
P-547 (PB)	Tank #204, IFR	Group 13B
P-550 (PB)	Tank #252, Cone Roof	Group 15A
P-551 (PB)	Tank #253, Cone Roof	Group 15A
P-555 (PB)	Tank #298, Cone Roof	Group 15A
P-563 (PB)	Tank #663, Cone Roof	Group 15A
P-564 (PB)	Tank #665, Cone Roof	Group 15A
P-564A (PB)	Tank #664, Cone Roof	Group 15A
P-565 (PB)	Tank #666, Cone Roof	Group 15A
P-566 (PB)	Tank #667, Cone Roof	Group 15A
P-567 (PB)	Tank #668, Cone Roof	Group 15A
P-568 (PB)	Tank #669, Cone Roof	Group 15A
P-569 (PB)	Tank #670, Cone Roof	Group 15A
P-571 (PB)	Tank #672, Cone Roof	Group 15A
P-574 (PB)	Tank #821, Cone Roof	Group 15A
P-575 (PB)	Tank #822, IFR	Group 15A
P-576 (PB)	Tank #823, IFR	Group 15A
P-577 (PB)	Tank #824, Cone Roof	Group 15A
P-578 (PB)	Tank #825, Cone Roof	Group 15A

P-579 (PB)	Tank #826, EFR	Group 14B
P-580 (PB)	Tank #831, EFR	Group 15A
P-581 (PB)	Tank #832, Cone Roof	Group 15A
P-582 (PB)	Tank #833, IFR	Group 15A
P-583 (PB)	Tank #834, Cone Roof	Group 15A
P-584 (PB)	Tank #835, IFR	Group 15A
P-585 (PB)	Tank #836, IFR	Group 15A
P-587 (PB)	Tank #840, EFR	Group 14B
P-588 (PB)	Tank #841, EFR	Group 14B
P-590 (PB)	Tank #843, EFR	Group 14B
P-591 (PB)	Tank #844, EFR	Group 14C
P-593 (PB)	Tank #846, EFR	Group 14B
P-594 (PB)	Tank #847, IFR	Group 13B
P-595 (PB)	Tank #848, EFR	Group 14B
P-596 (PB)	Tank #849, EFR	Group 14B
P-598 (PB)	Tank #880, EFR	Group 14A
P-600 (PB)	Tank #882, EFR	Group 14B
P-601 (PB)	Tank #883, EFR	Group 14B
P-602 (PB)	Tank #884, EFR	Group 14B
P-603 (PB)	Tank #885, IFR	Group 13B
P-604 (PB)	Tank #886, IFR	Group 13B
P-623 (PB)	Tank #7275, Cone Roof	Group 15A
P-624 (PB)	Tank # 7300, EFR	Group 14C
P-627 (PB)	Tank #7308, EFR	Group 14C
P-632 (PB)	Cooling Tower, Unit 868	Group 09
P-633 (PB)	Cooling Tower, Unit 210	Group 09
P-634 (PB)	Cooling Tower, Unit 864	Group 09
P-635 (PB)	Cooling Tower, Complex	Group 09
P-636 (PB)	Marine Barge Loading	Group 17
P-637 (GP)	Butane Railcar Loading/Unloading	Group 04
P-638 (PB)	Propane Loading Station	Group 04
P-639 (PB)	API Separators A&B – Bio Plant	Group 25A
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant	Group 25A
P-641 (PB)	Bio Plant Sewer System – Refinery	Group 25A
P-642 (PB) CD111	Flare, North Flare in South Yard	Group 03
P-643 (PB) CD112	Flare, South Flare in South Yard	Group 03
P-644 (PB)	Two (2) Crude Rail Car Unloading Facilities	Group 04
~~P-646 (PB)~~	~~Flares, Emergency Sulfur Plant~~ To Be Removed	~~Group 03~~

P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	Group 05
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	Group 05
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	Group 18
P-662 (PB)	Alkylation Unit 869	Group 20
P-664 (PB)	Inter-Refinery Pipeline	Group 19
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC	Group 25A
~~P-674 (PB)~~	~~H2 Purification~~ (Idle)	~~Group 21~~
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	Group 10

SECTION B. GENERAL REQUIREMENTS

1. Definitions

[25 Pa Code §121.1]

Words and terms that are not otherwise defined in this permit shall have the meanings set forth in Section 3 of the Pennsylvania Air Pollution Control Act (35 P.S. §4003) and 25 Pa Code §121.1.

2. Property Rights

[25 Pa Code §127.512(c)(4)]

This permit does not convey property rights of any sort, or any exclusive privileges.

3. Permit Expiration

[25 Pa Code §127.446(a) and (c)]

This operating permit is issued for a fixed term of 5 years and shall expire on the date specified on the front page of this permit. The terms and conditions of the expired permit shall automatically continue pending issuance of a new Title V permit, provided the Permittee has submitted a timely and complete application and paid applicable fees required under 25 Pa Code §127, Subchapter I and AMS is unable, through no fault of the Permittee, to issue or deny a new permit before the expiration of the previous permit. An application is complete if it contains sufficient information to begin processing the application, has the applicable sections completed and has been signed by a responsible official.

4. Permit Renewal

[25 Pa Code §§127.412, 127.413, 127.414, 127.446(e) & 127.503]

(a) The Permittee shall submit a complete application for renewal of the Title V permit at least 6 months and not more than 18 months before the expiration date of this permit. The Permittee shall submit to AMS a timely and complete application.

(b) The application for permit renewal shall include the current permit number, the appropriate renewal fee, a description of any permit revisions and off-permit changes that occurred during the permit term, and any applicable requirements that were promulgated and not incorporated into the permit during the permit term. The application for renewal of the Title V permit shall include submission of supplemental compliance review forms in accordance with 25 Pa Code §127.412(b) or (j).

(c) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information during the permit renewal process. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the source

after the date a complete renewal application was submitted but prior to release of a draft permit.

5. Transfer of Ownership or Operation

[25 Pa Code §§127.450(a)(4), 127.464(a) & AMR I Sec. II.A.5.c.]

(a) In accordance with 25 Pa Code §127.464(a) this permit may not be transferred to another person, except in cases of transfer-of-ownership which are documented and approved to the satisfaction of AMS.

(b) In accordance with 25 Pa Code §127.450(a)(4), a change in ownership or operational control of the source shall be treated as an administrative amendment if:

(1) AMS determines that no other change in the permit is necessary;

(2) A written agreement has been submitted to AMS identifying the specific date of the transfer of permit responsibility, coverage and liability between the current and the new Permittee; and

(3) A compliance review form has been submitted to AMS and the permit transfer has been approved by AMS.

6. Inspection and Entry

[25 Pa Code §127.513, 35 P.S. §4008, §114 of the Clean Air Act & Phila. Code §3-304]

(a) Upon presentation of credentials and other documents as may be required by law for inspection and entry purposes, the Permittee shall allow AMS or authorized representatives of AMS to perform the following:

(1) Enter at reasonable times upon the Permittee's premises where a Title V source is located or emissions related activity is conducted, or where records are kept under the conditions of this permit;

(2) Have access to and copy or remove, at reasonable times, any records that are kept under the conditions of this permit;

(3) Inspect at reasonable times, facilities, equipment including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit;

(4) Sample or monitor, at reasonable times, any substances or parameters for the purpose of assuring compliance with the permit or applicable requirements as authorized by the Clean Air Act, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code, or the regulations promulgated thereunder.

(b) Pursuant to 35 P.S. §4008, no person shall hinder, obstruct, prevent, or interfere with AMS or its personnel in the performance of any duty authorized under the Pennsylvania Air Pollution Control Act, Philadelphia Air Management Code, or regulations adopted thereunder.

(c) Nothing in this permit condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

7. Compliance Requirements

[25 Pa Code §§127.25, 127.444, 127.512(c)(1) & AMR I Sec. II.A.5.b.]

(a) The Permittee shall comply with the conditions of this permit. Noncompliance with this permit constitutes a violation of the Clean Air Act, the Pennsylvania Air Pollution Control Act, and/or the Philadelphia Air Management Code and is grounds for one or more of the following:

(1) Enforcement action

(2) Permit termination, revocation and reissuance or modification

(3) Denial of permit renewal application.

(b) A person may not cause or permit the operation of a source subject to 25 Pa Code Article III or the Philadelphia Air Management Code, unless the source(s) and air cleaning devices identified in the application for the plan approval/ installation permit and operating permit and the plan approval/ installation permit issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval/ installation permit and operating permit issued by AMS. A person may not cause or permit the operation of an air contamination source subject to 25 Pa Code Chapter 127 or the Philadelphia Air Management Code in a manner inconsistent with good operating practices.

(c) For purposes of sub-condition (b) of this permit condition, the specifications in applications for plan approvals/ installation permits and operating permits are the physical configurations and engineering design details which AMS determines are essential for the Permittee's compliance with the applicable requirements in this Title V permit.

(d) The Permittee shall not change any installation such that the registered information concerning it is no longer accurate without first notifying AMS.

8. Need to Halt or Reduce Activity Not A Defense

[25 Pa Code §127.512(c)(2)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. Duty to Provide Information

[25 Pa Code §127.411(d), §127.512(c)(5) & AMR I Sec. II.B. and C.]

(a) The Permittee shall furnish to AMS, within a reasonable time, information that AMS may request in writing to determine whether cause exists for modifying,

revoking and reissuing, or terminating the permit, or to determine compliance with the permit.

(b) Upon request, the Permittee shall also furnish AMS copies of records that the Permittee is required to keep by this permit, or for information claimed to be confidential, the Permittee may furnish such records along with any claim of confidentiality.

10. Reopening and Revising The Title V Permit for Cause

[25 Pa Code §§127.463, 127.512(c)(3), & 127.542]

(a) This Title V permit may be modified, revoked, reopened and reissued or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation, reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay a permit condition.

(b) This permit may be reopened and reissued prior to expiration of the permit under one or more of the following circumstances:

(1) Additional applicable requirements under the Clean Air Act, Pennsylvania Air Pollution Control Act, or Philadelphia Air Management Code become applicable to a Title V facility with a remaining permit term of 3 or more years prior to the expiration date of this permit. AMS will revise the permit as expeditiously as practicable but not later than 18 months after promulgation of the applicable standards or regulations. No such revision is required if the effective date of the requirement is later than the expiration date of this permit, unless the original permit or its terms and conditions has been extended.

(2) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Excess emissions offset plans for an affected source shall be incorporated into the permit upon approval by the Administrator of EPA.

(3) AMS or the EPA determines that this permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.

(4) AMS or the Administrator of EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(c) Proceedings to revise this permit shall follow the same procedures which apply to initial permit issuance and shall affect only those parts of this permit for which cause to revise exists. The revision shall be made as expeditiously as practicable.

(d) Regardless of whether a revision is made in accordance with (b)(1) above, the Permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations.

11. Reopening a Title V Permit for Cause by EPA

[25 Pa Code §127.543]

As required by the Clean Air Act and regulations adopted thereunder, this permit may be modified, reopened and reissued, revoked or terminated for cause by EPA in accordance with procedures specified in 25 Pa Code §127.543.

12. Significant Operating Permit Modifications

[25 Pa Code §127.541]

When permit modifications during the term of this permit do not qualify as minor permit modifications or administrative amendments, the Permittee shall submit an application for significant Title V permit modifications in accordance with 25 Pa Code §127.541.

13. Minor Operating Permit Modifications

[25 Pa Code §§121.1, 127.462 & AMR I Sec. II.A.]

(a) The Permittee may make minor permit modifications (as defined in 25 Pa Code §121.1) in accordance with 25 Pa Code §127.462.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) shall extend to an operational flexibility change authorized by 25 Pa Code §127.462.

14. Administrative Operating Permit Modifications

[25 Pa Code §127.450]

(a) The Permittee may request administrative operating permit amendments, as defined in §127.450(a), according to the procedures specified in §127.450. Administrative amendments are not authorized for any amendment precluded by the Clean Air Act or the regulations thereunder from being processed as an administrative amendment.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, AMS will, upon taking final action granting a request for an administrative permit amendment in accordance with §127.450(c), allow coverage by the permit shield in 25 Pa Code §127.516 (relating to permit shield) for administrative permit amendments which meet the relevant requirements of 25 Pa Code Article III.

15. Severability Clause

[25 Pa Code §127.512(b) & AMR I Sec. VIII]

The provisions of this permit are severable, and if any provision of this permit is determined by the Environmental Hearing Board (Department of Licenses and Inspections Review Board until the Environmental Hearing Board is approved) or a court of competent jurisdiction to be invalid or unenforceable, such a determination will not affect the remaining provisions of this permit.

16. Fee Payment

[25 Pa Code §§127.704, 127.705 & 127.707]

(a) The Permittee shall pay fees to AMS in accordance with the applicable fee schedules in 25 Pa Code Chapter 127 Subchapter I (relating to plan approval and operating permit fees).

(b) Emission fees. The Permittee shall, on or before September 1 of each year, pay applicable annual Title V emission fees for emissions occurring in the previous calendar year as specified in 25 Pa Code §127.705. The Permittee is not required to pay an emission fee for emissions of more than 4,000 tons of each regulated pollutant emitted from the facility.

(c) As used in this permit condition, the term “regulated pollutant” is defined as a Volatile Organic Compound, each pollutant regulated under Sections 111 and 112 of the Clean Air Act and each pollutant for which a National Ambient Air Quality Standard has been promulgated, except that carbon monoxide is excluded. Payment shall be made to AMS.

(d) Late Payment. Late payment of emission fees will subject the Permittee to the penalties prescribed in 25 Pa Code §127.707 and may result in the suspension or termination of the Title V permit. The Permittee shall pay a penalty of fifty per centum (50%) of the fee amount, plus interest on the fee amount computed in accordance with 26 U.S.C.A. §6621(a)(2) from the date the emission fee should have been paid in accordance with the time frame specified in 25 Pa Code §127.705(c).

(e) The Permittee shall pay an annual operating permit administration fee according to the fee schedule established in 25 Pa Code §127.704(c) if the facility, identified in subparagraph (iv) of the definition of the term “Title V facility” in 25 Pa Code §121.1, is subject to Title V after the EPA Administrator completes rulemaking requiring regulation of those sources under Title V of the Clean Air Act.

(f) This permit condition does not apply to a Title V facility which qualifies for exemption from emission fees under 35 P.S. §4006.3(f).

17. Authorization for De Minimis Emissions Increases

[25 Pa Code §§127.14(b), 127.449 & Phila. Code §3-306]

(a) This permit authorizes de minimis emission increases from a new or existing source in accordance with 25 Pa Code §§127.14 and 127.449 without the need for a plan approval, Phila. Code §3-306 without the need for an installation permit, or prior issuance of a permit modification. The Permittee shall provide AMS with 7 days prior written notice before commencing any de minimis emission increase that would result from either: (1) a physical change of minor significance under 127.14.(c)(1) and Phila. Code §3-306; or (2) the construction, installation, modification or reactivation of an air contamination source. The written notice shall:

(1) Identify and describe the pollutants that will be emitted as a result of the de minimis increase.

(2) Provide emission rates in tons/year and in terms necessary to establish compliance consistent with any applicable requirement.

AMS may disapprove or condition the de minimis emission increase at any time.

(b) Except as provided below in (c) and (d) of this permit condition, the Permittee is authorized during the term of this permit to make the following de minimis emission increases (expressed in tons per year), up to the following amounts without the need for a plan approval or installation permit or prior issuance of a permit modification:

(1) Four tons of carbon monoxide from a single source during the term of the permit and 20 tons of carbon monoxide at the facility during the term of the permit.

(2) One ton of NO_x from a single source during the term of the permit and five tons of NO_x at the facility during the term of the permit.

(3) One and six-tenths tons of oxides of sulfur from a single source during the term of the permit and eight tons of oxides of sulfur at the facility during the term of the permit.

(4) Six-tenths of a ton of PM-10 from a single source during the term of the permit and three tons of PM-10 at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(5) One ton of VOCs from a single source during the term of the permit and five tons of VOCs at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(c) The Permittee is authorized to install the following minor sources without the need for a plan approval or installation permit:

(1) Air conditioning or ventilation systems not designed to remove pollutants generated or released from other sources.

(2) Combustion units rated at 250,000 or less Btu per hour of net load rating.

(3) Laboratory equipment used exclusively for chemical or physical analysis.

(d) This permit does not authorize de minimis emission increases if the emissions increase would cause one or more of the following:

(1) Increase the emissions of the pollutant regulated under Section 112 of the Clean Air Act except as authorized in subparagraph (b)(4) & (5) of this permit condition.

(2) Subject the facility to the prevention of significant deterioration requirements in 25 Pa Code Chapter 127, Subchapter D and/or the new source review requirements in subchapter E.

(3) Violate any applicable requirement of the Air Management Code, the Air Pollution Control Act, the Clean Air Act, or the regulations thereunder.

(4) Changes which are modifications under the provision of Title 1 of the Clean Air Act and emission increases which would exceed the allowable emissions level (expressed as a rate of emissions or in terms of total emissions) under the Title V permit.

(e) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) applies to de minimis emission increases and the installation of minor sources made pursuant to this permit condition.

(f) Emissions authorized under this permit condition shall be included in the monitoring, recordkeeping and reporting requirements of this permit.

(g) Except for de minimis emission increases allowed under this permit, or sources and physical changes meeting the requirements of 25 Pa Code §127.14, the Permittee is prohibited from making physical changes or engaging in activities that are not specifically authorized under this permit without first applying for a plan approval. A City of Philadelphia Installation Permit is required if the activities are subject to the Philadelphia Air Management Code. In accordance with 25 Pa Code §127.14(b), a plan approval is not required for the construction, modification, reactivation, or installation of the sources creating the de minimis emissions increase.

(h) The Permittee may not meet de minimis emission threshold levels by offsetting emission increases or decreases at the same source.

18. Reactivation of Sources

[25 Pa Code §§127.11, 127.11a, 127.215 & AMR I Sec. II.A.5.]

(a) The Permittee shall notify AMS of any source that is out of operation for more than a year in its semiannual monitoring report.

(b) The Permittee may reactivate a source at the facility that has been out of operation or production for at least one year, but less than or equal to 5 years, if the source is reactivated in accordance with the requirements of 25 Pa Code §§127.11a and 127.215. The reactivated source will not be considered a new source.

(c) A source which has been out of operation or production for more than five years but less than 10 years may be reactivated and will not be considered a new source if the Permittee satisfies the conditions specified in 25 Pa Code §127.11a(b).

19. Circumvention

[25 Pa Code §§121.9, 127.216 & AMR I Sec. VII]

(a) The Permittee may not circumvent the requirements of 25 Pa Code Chapter 127, by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or

development, would otherwise require a permit or submission of a plan approval application.

(b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this permit, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code or the regulations promulgated thereunder, except that with prior approval of AMS, the device or technique may be used for control of malodors.

20. Operational Flexibility

[25 Pa Code §127.3 & AMR I Sec. XII]

(a) The Permittee is authorized to make changes within the Title V facility in accordance with the following provisions in 25 Pa Code Chapter 127 and in Phila. Code §3-306 which implement the operational flexibility requirements of Section 502(b)(10) of the Clean Air Act and Section 6.1(i) of the Pennsylvania Air Pollution Control Act:

(1) Section 127.14 and Phila. Code §3-306, whichever is more stringent (relating to exemptions)

(2) Section 127.447 (relating to alternative operating scenarios)

(3) Section 127.448 (relating to emissions trading at facilities with Federally enforceable emissions caps)

(4) Section 127.449 (relating to de minimis emission increases)

(5) Section 127.450 (relating to administrative operating permit amendments)

(6) Section 127.462 (relating to minor operating permit amendments)

(7) Subchapter H (relating to general plan approvals and operating permits)

(b) Unless precluded by the Clean Air Act or the regulations adopted thereunder, the permit shield authorized under 25 Pa Code §127.516 shall extend to operational flexibility changes made at this Title V facility pursuant to this permit condition and other applicable operational flexibility terms and conditions of this permit.

21. Approved Economic Incentives and Emission Trading Programs

[25 Pa Code §127.512(e)]

No permit revision shall be required under approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this Title V permit.

22. Permit Shield

[25 Pa Code §§127.516, 127.450(d), 127.449(f) & 127.462(g)]

(a) The Permittee's compliance with the conditions of this permit shall be deemed in compliance with applicable requirements as of the date of permit issuance if either of the following applies:

(1) The applicable requirements are included and are specifically identified in this permit.

(2) AMS specifically identifies in the permit other requirements that are not applicable to the permitted facility.

(b) Nothing in 25 Pa Code §127.516 or the Title V permit shall alter or affect the following:

(1) The provision of Section 303 of the Clean Air Act, including the authority of the Administrator of the EPA provided thereunder.

(2) The liability of the Permittee for a violation of an applicable requirement prior to the time of permit issuance.

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act.

(4) The ability of the EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(c) Unless precluded by the Clean Air Act or regulations thereunder, final action by AMS on administrative amendments, minor and significant permit modifications, and operational flexibility changes shall be covered by the permit shield provided such amendments, modifications and changes meet the relevant requirements of 25 Pa Code Article III.

(d) The permit shield authorized under §127.516 is in effect for the permit terms and conditions in this Title V permit, including administrative operating permit amendments and minor operating permit modifications.

SECTION C. FACILITY WIDE REQUIREMENTS

1. Fugitive Emissions

[25 Pa Code §§123.1, 123.2, & AMR II Sec. VIII]

(a) No person may permit the emission into the outdoor atmosphere of a fugitive air contaminant from a source other than the following:

(1) Construction, or demolition of buildings or structures.

(2) Grading, paving and maintenance of roads and streets.

(3) Use of roads and streets. Emissions from material in or on trucks, railroad cars, and other vehicular equipment are not considered as emissions from use of roads and streets.

(4) Clearing of land.

(5) Stockpiling of materials.

(6) Sources and classes of sources other than those identified in paragraphs 1(a)(1)-1(a)(5) for which the Permittee has obtained a determination from AMS that fugitive emissions from the source, after appropriate control, meet the following requirements:

(i) The emissions are of minor significance with respect to causing air pollution.

(ii) The emissions are not preventing or interfering with the attainment or maintenance of an ambient air quality standard.

(b) The Permittee may not permit fugitive particulate matter from a source specified in paragraphs 1(a)(1)-1(a)(6) if the emissions are visible at the point the emissions pass outside the facility's property.

(c) The Permittee shall take all reasonable actions to prevent particulate matter emitted from a source identified in paragraphs 1(a)(1)-1(a)(6) from becoming airborne. These actions include, but are not limited to, the following:

(1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.

(2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.

(3) Paving and maintenance of roadways.

(4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

2. Odor Emissions Limitations

[25 Pa Code §123.31(b) & AMR V Sec. XX]

A person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the person on whose land the source is being operated.

3. Visible Emissions Limitations

[25 Pa Code §§123.41, 123.42, 123.43, and AMR II Sec. IV]

(a) A person at the Title V facility may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

(1) Equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour.

(2) Equal to or greater than 60% at any time.

(b) These emission limitations do not apply when: [25 Pa Code §123.42]

(1) The presence of uncombined water is the only reason for failure of the emission to meet the limitations.

(2) When the emission results from sources specified in 25 Pa Code §123.1(a)(1)-(9).

(3) When the emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions.

(c) The visible emissions may be measured using either of the following: [25 Pa Code §123.43]

(1) A device approved by AMS and maintained to provide accurate opacity measurements.

(2) Observers, trained and qualified to measure plume opacity with the naked eye or with the aid of devices approved by AMS.

(d) The emission limitations of 20% and 60% as stated above do not apply to facilities which have received a stricter emission limitation in a plan approval or operating permit as part of AMS's Best Available Technology determination, if that limitation is stated elsewhere in this permit.

4. Noise and Vibrations

[Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration)]**

(a) The Permittee shall not create or cause, or permit the creation of sound, sound originating from a property used for a non-residential purpose shall not exceed the following:

(1) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(2) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(b) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary.

5. Fuel Usage

[AMR III Sec. I & III. Compliance with the requirement specified in this streamlined permit condition assures compliance with the provisions specified in 25 Pa Code §123.22(e)]

(a) Unless specified in Section D, the Permittee shall use only natural gas, propane, or commercial fuel oil. The maximum sulfur content would be 0.2%, 0.3% and 0.5 % for number 2, 4, and 5 or 6 fuel oil, respectively.

(1) Beginning July 1, 2016, the maximum sulfur content of fuel oil, expressed as parts per million (ppm) by weight or percentage by weight, shall be: [25 Pa Code §123.22(e)(2)(i)]

Grades Commercial Fuel Oil (Consistent with ASTM 396)

No. 2 and lighter oil	500 ppm	(0.05%)
No. 4 oil	2,500 ppm	(0.25%)
No. 5, No. 6 and heavier oil	5,000 ppm	(0.5%)

(2) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to July 1, 2016, which met the applicable maximum allowable sulfur content for commercial fuel oil through June 30, 2016, in subparagraph (i) at the time it was stored, may be used by the ultimate consumer in this Commonwealth on and after July 1, 2016. [25 Pa Code §123.22(e)(2)(ii)]

(b) When it appears that the delivery of low sulfur fuel is, or is about to be, interrupted because of unavailability, accident, or other emergency conditions, AMS may authorize the use of an alternative fuel supply, involving the least adverse impact on air quality, for a period not to exceed 30 days. Longer periods of time of 120 days each may be authorized by AMS only after review and recommendation made by the Air Pollution Control Board for each extended period of time. Factors to be considered shall include the availability of alternate complying fuels, the availability of sulfur dioxide stack gas removal equipment, and the anticipated effect on air quality in the neighborhood, area and region. The Air Pollution Control Board, after a hearing, shall have the right to adjust, revoke, rescind, and make changes or modifications of any authorizations if there shall occur such change in the condition of availability of low sulfur fuel or the factors set forth in this subsection. [AMR III, Sec. III.C.]

6. Open Burning

[AMR II Sec. II]

The Permittee shall not permit the ignition or continuation of open burning of any materials.

7. Air Pollution Episode

[25 Pa Code Chapter 137 & AMR IV Sec. V, VI & VII]

The Permittee shall reduce its emission according to the approved curtailment plan, when the Philadelphia Health Commissioner or his designee declares an air pollution episode.

8. Modification of 112 Pollutants Which Are VOCs and PM-10

[25 Pa Code §127.512(j)]

Except when precluded by the Clean Air Act, the Permittee may modify the mixture of pollutants regulated under Section 112 of the Clean Air Act (42 U.S.C.A. §7412) which are VOCs or PM-10 if:

(a) The emission limitations of the permit are not violated, and

(b) The Permittee keeps a log which identifies the mixture of pollutants regulated under Section 112 and reports such changes to AMS in the next semiannual report.

9. Risk Management

[25 Pa Code §§127.441(d), 127.512(i) and 40 CFR Part 68]

(a) If required by Section 112(r) of the Clean Air Act, the Permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act and 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).

(b) When a regulated substance listed in 40 CFR §68.130 is present in a process at the Title V facility in more than the listed threshold quantity, the Permittee shall prepare and implement a risk management plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act.

(1) The Permittee shall submit the first RMP to AMS and EPA no later than the latest of the following:

(i) June 21, 1999;

(ii) Three years after the date on which a regulated toxic substance is first listed under §68.130; or

(iii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The Permittee shall submit any additional relevant information requested by AMS or EPA concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR §68.190.

(3) The Permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68 and guidance developed by EPA, including a checklist addressing the required elements of a complete RMP.

(c) As used in this permit condition, and defined in 40 CFR §68.3, the term “process” means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

(d) If the Title V facility is subject to 40 CFR Part 68, as part of the certification required under this permit, the Permittee shall:

(1) Submit a compliance schedule for satisfying the requirements of 40 CFR Part 68 by the date specified in 40 CFR §68.10(a); or

(2) Certify that the Title V facility is in compliance with all requirements of 40 CFR Part 68 including the registration and submission of the RMP.

(e) If the Title V facility is subject to 40 CFR Part 68, the Permittee shall maintain records supporting the implementation of an accidental release program for five years in accordance with 40 CFR §68.200.

(f) When the Title V facility is subject to the accidental release program requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68, appropriate enforcement action will be taken by AMS if:

(1) the Permittee fails to register and submit the RMP or a revised plan pursuant to 40 CFR Part 68.

(2) the Permittee fails to certify that the Title V facility is in compliance with the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68, and 25 Pa Code §127.512(i).

10. Stratospheric Ozone Protection

[25 Pa Code §127.441(b) and 40 CFR Part 82]

The permittee shall comply with the standards for labeling of products containing or manufactured with ozone depleting substances pursuant to 40 CFR 82, Subpart E. The Permittee shall satisfy applicable requirements of 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction, during the service, maintenance, repair and disposal of equipment containing Class I and Class II refrigerants or any non-exempt refrigerants regulated under such regulations except as provided for motor vehicle air conditioners in Subpart B. The Permittee shall be allowed to switch from any ozone depleting substance to any alternative that is listed in the Significant New Alternative Program (SNAP) pursuant to 40 CFR 82, Subpart G.

PES operates equipment that store greater than 50 lbs of refrigerant and are therefore subject to the following leak definitions per 40 CFR §82.157(c):

- 20% leak rate for commercial refrigeration equipment.
- 30% leak rate for industrial process refrigeration equipment.
- 10% leak rate for comfort cooling appliances or other appliances with a full charge of 50 or more pounds of refrigerant not previously covered.

PES operates a cafeteria refrigerant system that is subject to the 20% leak rate, two compressors that are subject to the 30% leak rate, and several Air Conditioning units that are subject to the 10% leak rate.

11. Sampling, Testing and Monitoring Procedures

[25 Pa Code §§127.441(c) & 127.463(e); Chapter 139; & 114(a)(3), 504(b) of the Clean Air Act & AMR I Sec. III]

(a) The Permittee shall perform the emissions monitoring and analysis procedures or test methods for applicable requirements of this Title V permit. In addition to the sampling, testing and monitoring procedures specified in this permit, the Permittee shall comply with any additional applicable requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Unless alternative methodology is required by the Clean Air Act (including §§114(a)(3) or 504(b)) and regulations adopted thereunder, the sampling, testing and monitoring required by or used by the Permittee to demonstrate compliance with any applicable regulation or permit condition shall be conducted in accordance with the requirements of 25 Pa Code Chapter 139.

12. Recordkeeping Requirements

[25 Pa Code §127.511 & Chapter 135]

(a) The Permittee shall maintain and make available, upon request by AMS, the following records of monitored information:

(1) The date, place (as defined in the permit) and time of sampling or measurements.

(2) The dates the analyses were performed.

(3) The company or entity that performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of analyses.

(6) The operating conditions as existing at the time of sampling or measurement.

(b) The Permittee shall retain records of the required monitoring data and supporting information for at least five (5) years from the date of the monitoring, sample, measurement, report or application. Supporting information includes calibration and maintenance records and original strip-chart or electronic recordings for continuous monitoring instrumentation, and copies of reports required by the permit.

(c) The Permittee shall maintain and make available to AMS upon request, records including computerized records that may be necessary to comply with the reporting, recordkeeping, and emission statement requirements in 25 Pa Code Chapter 135 (relating to reporting of sources). In accordance with 25 Pa Code Chapter 135, §135.5, such records may include records of production, fuel usage, maintenance of production or pollution control equipment or other information determined by AMS to be necessary for identification and quantification of potential and actual air contaminant emissions. If direct recordkeeping is not possible or practical, sufficient records shall be kept to provide the needed information by indirect means.

13. Reporting Requirements

[25 Pa Code §§127.411(d), 127.442, 127.463(e) 127.511(c), & AMR I Sec. II]

(a) The Permittee shall comply with the reporting requirements for the applicable requirements specified in this Title V permit. In addition to the reporting requirements specified herein, the Permittee shall comply with any additional applicable reporting requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Pursuant to 25 Pa Code §127.511(c), the Permittee shall submit reports of required monitoring, on or before the following January 31 or July 31, whichever date is earlier, and every six months thereafter, covering the immediately preceding six month periods of July 1 - December 31 and January 1 - June 30 respectively. Instances of deviations (as defined in 25 Pa Code §121.1) from permit requirements shall be clearly identified in the reports. The reporting of deviations shall include the probable cause of the deviations and corrective actions or preventative measures taken, except that sources with continuous emission monitoring systems shall report according to the protocol established and approved by AMS for the source. The required reports shall be certified by a responsible official.

(c) Any records, reports or information obtained by AMS or referred to in a public hearing shall be made available to the public by AMS except for such records, reports or information for which the Permittee has shown cause that the documents could be considered confidential and protected from disclosure to the public under Section 4013.2 of the Pennsylvania Air Pollution Control Act and consistent with Section 112(d) and 114(c) of the Clean Air Act and 25 Pa Code §127.411(d). The Permittee may not request a claim of confidentiality for any emissions data generated for the Title V facility.

14. Philadelphia Toxic Notification

[AMR VI Sec. II & III]**

(a) The Permittee shall notify AMS of any changes to its “Notice of Toxic Air Contaminant Emissions” within 30 days of the changes.

(b) The requirements of this condition shall not apply to toxic air contaminants emitted from the following:

(1) Combustion process using only commercial fuel, including internal combustion engines;

(2) Retail dry cleaning operations;

(3) Retail and non-commercial storage and handling of motor fuels;

(4) Incineration of waste materials other than liquid, semi-liquid or solid by-product industrial wastes; and

(5) Incidental or minor sources including laboratory-scale operations, fireplaces and household appliances, cooking appliances, general comfort ventilation of occupied spaces, housecleaning operations, residential-scale solvent use and pesticide application, and such other sources or categories of sources which

are determined by AMS to be of minor significance for the purposes of this Regulation, or which AMS determines to be more appropriately evaluated by special survey methods.

15. Emission Statement

[25 Pa Code §135.21 & AMR I Sec. II.B.2.]

On or before March 1 of each year, the Permittee shall provide AMS with a statement, in a form as AMS may prescribe, for classes or categories of sources, showing the actual emissions from each source for the previous calendar year and a description of the method used to calculate the emissions. The statement shall contain emission information for the following pollutants:

(1) Oxides of nitrogen and VOCs. The statement for these pollutants shall contain a certification by a company officer or plant manager that the information contained in the statement is accurate. [25 Pa Code 135.21]

(2) Total suspended particulate, PM-10, sulfur oxides, carbon monoxide, hazardous air pollutants, and any other pollutants or information requested by AMS. [Phila. Code Sec. 3-301]

16. Reporting Of Malfunctions

[25 Pa. Code §127.511 & AMR I Sec. II.A.5.]

(a) The Permittee shall, within two (2) hours of knowledge of any occurrence, notify AMS, at 215-685-7572 during business hours and 215-686-4514 during other times, of any malfunction of the source(s) or associated air pollution control devices listed in Table A1 of this permit, which results in, or may result in, the emission of air contaminants in excess of the limitations specified in this permit, or regulation contained in 25 Pa Code Article III or the Philadelphia Air Management Code.

(b) Malfunction(s) which occur at this Title V facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number.

(c) A written report shall be submitted to AMS within two (2) working days following the (notification of the) incident, and shall describe, at a minimum, the following:

(1) The malfunction(s).

(2) The emission(s).

(3) The duration.

(4) Any corrective action taken.

17. Compliance Certification

[25 Pa Code §127.513]

(a) The Permittee shall submit to AMS and EPA Region III a certification of compliance with each term and condition of this permit including the emission limitations, standards or work practices. This certification shall be submitted by March 1 of each year for the period of the previous calendar year and shall include:

(1) The identification of each term or condition of the permit that is the basis of the certification.

(2) The compliance status.

(3) The methods used for determining the compliance status of the source, currently and over the reporting period.

(4) Whether compliance was continuous or intermittent.

(b) The compliance certifications shall be submitted to AMS and EPA in accordance with the Submissions requirement of this permit specified in Condition #17 of this section.

18. Submissions

[25 Pa Code §§127.402(d) and 127.513(1)]

(a) Reports, test data, monitoring data, notifications, and requests for renewal of the permit shall be submitted to:

Chief of Source Registration
Air Management Services
321 University Ave.
Philadelphia, PA 19104-4543

(b) Any report or notification for the EPA Administrator or EPA Region III should be addressed to:

Associate Director
Office of Enforcement and Permits Review (3AP10)
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(c) An application, form, report or compliance certification submitted pursuant to this permit condition shall contain a certification by a responsible official as to the truth, accuracy, and completeness as required under 25 Pa Code §127.402(d).

(d) Unless otherwise required by the Clean Air Act or regulations adopted thereunder, this certification and any other certification required pursuant to this permit shall state that based on information and belief formed after reasonable inquiry, the statements and information in the documents are true, accurate, and complete.

SECTION D. SOURCE SPECIFIC REQUIREMENTS

1. Facility

(a) Work Practice Standards

(1) SO2 Sources [SO2 Operating Permit No. SO2-95-039]

(i) The Permittee shall operate its sources consistent with all parameters established in the dispersion model submitted to AMS on August 6, 1999 and listed in the following tables A3 and A4 of SO2 Operating Permit No. SO2-95-039:

TABLE A3-FACILITY INVENTORY LIST (Girard Point Stack Parameters)

Stack ID	COMMENT	UTME	UTMN	Base elevation	Height	Diameter
S-111	1232 FCCU Feed Preheat Furnace B104	482.181	4417.285	4.570	35.052	2.438
S-112	1332 htr H1	482.181	4416.764	4.570	27.432	1.981
S-113	Heater 602	482.176	4416.772	4.570	26.822	1.448
S-114	Heater 601	482.190	4416.808	4.570	25.603	1.372
S-115	Heater 600	482.176	4416.808	4.570	26.822	1.448
S-116	1332 htr H2	482.194	4416.762	4.570	26.822	1.372
S-117	Heater 400 & 401 comb	482.142	4416.809	4.570	30.480	2.286
S-119	1332 htr H3	482.186	4416.756	4.570	27.432	1.981
S-120	AVU 137 UNIT F1 & F2 FUEL BURNING	481.793	4417.475	4.570	60.960	3.962
S-122	AVU 137 UNIT F3 FUEL BURNING	481.774	4417.498	4.570	23.012	1.372
S-123A	B101 htr 231 Stack A	482.150	4416.710	4.570	22.860	1.052
S-123B	B101 htr 231 Stack B	482.153	4416.705	4.570	22.860	1.052
S-123C	B101 htr 231 Stack C	482.156	4416.701	4.570	22.860	1.052
S-124	H1 htr 433 FUEL BURNING	482.072	4417.018	4.570	41.453	2.896
S-125	#3 BOILER HOUSE stack	481.845	4416.765	4.570	60.960	5.791
S-126	Boiler No. 45 Stack	481.845	4416.765	4.570	45.720	1.962
S-153	1231 Flare	482.348	4417.595	4.570	62.880	1.110
S-154	1232 Flare	482.300	4417.549	4.570	60.360	1.110
S-155	433 Flare	481.960	4417.431	4.570	81.700	1.110
S-156	1232 FCCU Unit/ CO boiler stack	482.096	4417.363	4.570	45.720	2.896

TABLE A4-FACILITY INVENTORY LIST (Point Breeze Stack Parameters)

Stack ID	COMMENT	UTME (km)	UTMN (km)	Base elevation (m)	Height (m)	Diameter (m)
S-801	210A – HTR H101	482.829	4418.297	7.250	41.605	2.254
S-802	210B – HTR H201	482.838	4418.290	7.250	60.817	2.896
S-803	210C – HTR 13H1	482.910	4418.269	7.470	66.396	3.232
S-804	UNIT 859 1H-1 Stack				36.347	1.778
S-807	MAGNAFORMER 860 - HTRS 2H1, 2H2 & 2H4, STACK A common	482.868	4418.026	5.790	35.636	1.905
S-808	MAGNAFORMER 860 - 2H1, 2H2 & 2H4 STACK B common	482.875	4418.022	5.790	35.636	1.905
S-809	MAGNAFORMER 860 - HTR 2H3 AND 2H5 STACK A common	482.865	4418.014	5.790	33.528	2.045
S-810	MAGNAFORMER 860 - HTRS 2H3 & 2H5 – STACK B common	482.872	4418.010	5.790	33.528	2.045
S-811	MAGNAFORMER 860 - HTR 2H6	482.882	4418.052	5.760	33.528	1.270
S-812	MAGNAFORMER 860 - HTR 2H7	482.885	4418.058	5.760	33.528	1.372
S-813	MAGNAFORMER 860 HTR 2H8	482.888	4418.063	5.760	33.528	1.372
S-818	MAGNAFORMER 864 - HTR PH1	483.132	4418.262	7.890	39.091	1.486
S-819	MAGNAFORMER 864 - HTR PH2 & HTR PH4	483.111	4418.263	7.890	33.528	2.122
S-820	MAGNAFORMER 864 - HTR PH3	483.101	4418.255	7.890	33.528	2.046
S-822	MAGNAFORMER 864 - HTR PH5	483.101	4418.269	7.890	33.528	2.046
S-822	MAGNAFORMER 864 - HTR PH7	483.142	4418.269	7.890	33.528	1.372
S-823	MAGNAFORMER 864 - HTR PH11	483.151	4418.268	7.890	33.528	1.486
S-824	MAGNAFORMER 864 - HTR PH12	483.163	4418.272	7.890	36.576	1.626
S-825	DISTILLATE HDS 865 - HTR 11H1	483.106	4418.379	7.800	42.680	1.830
S-826	DISTILLATE HDS 865 - HTR 11H2	483.119	4418.379	7.800	55.169	1.880
S-827	GAS OIL HDS 866 - HTR 12H1	483.145	4418.382	7.830	38.100	1.524
S-828	FCCU 868 8H-101	483.210	4418.154	6.710	35.947	1.308
S-8701	LSD HDS UNIT 870 – HTR H1	483.166	4418.139	3.962	54.864	1.575

S-8702	LSD HDS UNIT 870 – HTR H2	483.316	4418.152	3.962	54.864	1.016
S-8703	LSD HDS UNIT 870 – HTR H3	483.219	4418.184	3.962	45.720	1.829
S-976	NORTH FLARE - SOUTH YARD	482.807	4417.911	5.300	90.500	2.930
S-977	SOUTH FLARE - SOUTH YARD	482.719	4417.582	3.320	90.130	2.930
S-985	FCCU RETURN STACK 868 8H-103	483.214	4418.253	6.710	60.960	2.700
S-983	UNIT 867 SRU COMBUSTION	482.648	4418.010	5.670	70.100	1.070

(ii) The Permittee shall remodel to demonstrate compliance with the National Ambient Air Quality Standard (NAAQS) for SO_2 if AMS has cause to believe that the attainment or maintenance of the standard is in jeopardy.

(2) Process unit turnarounds. Purging of volatile organic compounds during depressurization of reactors, fractionating columns, pipes, or vessels during unit shut-down, repair, inspection, or startup shall be performed in such a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the internal pressure in such equipment reaches 19.7 psia (136 kilopascals). [AMS letter dated 4/14/94; 25 PA Code §129.55(d)]

(3) The Permittee may burn non-commercial fuels in accordance with Air Management Code Section 3-207(2), AMR III, Section 1.A and 25 PA Code §123.22(e)(3).

(4) All Processes must vent to control devices specified in the process flow diagrams included in Section A. of this permit unless changes to the facility's configuration are made pursuant a valid plan approval or installation permit.

(5) Each boiler and heater shall only burn fuel types as listed in Table A-1.

(6) Greenhouse gas (GHG) emissions shall be derived as required by the Mandatory Greenhouse Gas Reporting rule codified as 40 CFR Part 98. The GHG emission factors used for sources in this section were derived from the methods described in 40 CFR 98 Subpart C for General Stationary Fuel Combustion Sources, which includes an analysis of the composition of the refinery fuel gas being combusted for each heater. The GHG emission factor for each heater was derived from the emission factors in Subpart C and the higher heating value of the refinery fuel gas being used. All CO2e emissions limitations in this permit were calculated using the future projected annual firing duty of each heater or boiler and the specific CO2e emission factor. This method is at least as accurate as the EPA AP-42 emission factor for CO2 as this factor only reflects the combustion of natural gas.

(b) Testing Requirements

[25 PA Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Method 7E shall be used for nitrogen oxides.

(ii) U.S.E.P.A. Reference Method 5 and 202 shall be used for particulate matter.

(iii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iv) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(v) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(vi) U.S.E.P.A Reference Method 25A shall be used for volatile organic compounds.

(vii) Performance Specification 7, Method 11 shall be used for hydrogen sulfide.

(3) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5, 7E, and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 PA Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(4) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3 and the Permittee shall only use test methods authorized in accordance with 25 Pa. Code §139.

(5) SO2 Sources

(i) The Permittee shall test for sulfur content of the refinery fuel gas burned on a daily basis.

(ii) The Permittee shall test for sulfur content of the fuel upon receipt of each fuel oil delivery.

(iii) ASTM 4294 for sulfur in fuel can be used when the Permittee supports the data with a quality control plan and demonstrates the ability to accurately perform this test.

(iv) ASTM D5453 shall be used to determine hydrogen sulfide content of the fuel gas streams. The Permittee shall dedicate separate test equipment for liquid streams and gaseous streams. The Permittee shall calibrate the Antek equipment before each use. ASTM 5504 may be used when the Antek equipment is out of service or unavailable.

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following :

(1) visible and fugitive emissions during operation daily.

(2) All CEMs shall meet the requirements of 25 PA Code Chapter 139.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5, 139, and SO2 Operating Permit No. SO2-95-039]

The Permittee shall keep the following records:

(1) Records of the daily inspection for visible and fugitive emissions and any corrective actions taken.

(2) Baseline operating records, sampling data concurrent with any emission tests, and any supporting calculations used to determine emissions;

(3) Records of the occurrence or duration of each startup, shutdown, and malfunction of operation of a combustion unit;

(4) Records of the occurrence, duration, and cause (if known) of each malfunction of air pollution equipment or monitoring equipment used to comply with the restrictions or monitoring provisions of this permit;

(5) For monitoring equipment used to comply with the monitoring requirements of this permit, records documenting the completion of installation, calibration checks, and maintenance.

(e) Reporting Requirements

[25 Pa Code §127.511(c) & AMR I Section II]

(1) The Permittee shall quarterly submit to AMS reports of each CEMs in accordance to Chapter 139 and PA Continuous Source Monitoring Manual.

(2) SO2 Sources

(i) The Permittee shall submit to AMS the CEM report for SO2 in accordance to Chapter 139 procedure quarterly. The report shall contain, at the minimum, the following information:

(A) The date, time duration, and magnitude of excess emissions.

(B) The reason for any excessive emissions.

(C) Corrective action taken.

(D) For each day, the number of valid monitoring hours, the causes for any invalid monitoring hours contained in daily average and corrective actions taken.

(ii) The results of all quality control and quality assurance actions taken. The Permittee shall submit to AMS quarterly reports of the performance of the facility using the City of Philadelphia Monitoring Report Form as required in Section C.11 of this permit. These reports shall be submitted on or before January 31, April 30, July 31, and October 31 for the previous quarter. These reports shall consist of the following:

(A) A description of any deviations from permit requirements that occurred during the three-month reporting period, the probable cause of such deviations, and corrective actions or preventive measures taken;

(B) A description of any malfunction of processes, air pollution control equipment, or monitoring equipment that occurred during the three-month reporting period, the date and duration of the incidents, the probable cause of the incidents, and actions taken to remediate such incidents;

(C) A description of any sources which have not operated in more than one year.

(3) Annual compliance certification in accordance with Section C.16.

(4) General Provisions Applicability to 40 CFR 63 Subparts F, G, and H

(i) Table 3 of 40 CFR 63 Subpart F specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subparts F, G, and H. [40 CFR 63.103(a)]

(ii) Table 6 of 40 CFR 63 Subpart CC specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subpart CC. [40 CFR 63.642(c)]

(iii) Table 1 of 40 CFR 63 Subpart Q specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subpart Q. [40 CFR 63.400(b)]

(iv) Owners and operators of sources subject to 40 CFR Subpart Y must comply with the requirements of 40 CFR Subpart A in accordance with the provisions for applicability of 40 CFR subpart A to 40 CFR Subpart Y Table 1. [40 CFR 63.560(c)]

(5) Semi-Annual Progress Report in accordance with Consent Decree Order 05-CV-2866. Each report shall contain the following:

(i) Progess report on the implementation of the requirement s of “Affirmative Relief/Environmental Projects”.

(ii) A summary of the emission data

(iii) Description of any problems anticipated with respect to meeting the requirements of Section V of the Consent Decree.

(iv) Any additional matter that the Permittee believes should be brought to the attention of EPA and AMS.

(6) The above Semi-Annual Progess Report shall be certified by the person responsible for the environmental management at the facility or by person responsible for overseeing the implementation of the Decree as follows: [Decree Order 05-CV-2866]

“I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.”

2. Group 01 – Boilers

(A) Girard Point equipment numbered CU018, CU020, CU021, and CU022.

(a) Emission Limitations

(1) Carbon Monoxide (CO) emissions

(i) Each unit may not exceed 1% by volume of exhaust gases. [AMR VIII, Section II]

(ii) CO emissions from Boiler #45 (CU-022) shall not exceed 3.9 ppmvd @ 7% O2 [25 PA Code 127.1] per Plan Approval 15247.

(2) Emission from the No. 3 Boilerhouse (CU-018, CU-020, CU-021, CU-022) shall not exceed the following in any rolling 12-month period. [AMS Plan Approval 08080, 11/2/10]

(i) 970.5 tons of NOx on rolling 12-month period [AMS Plan Approval 15271, dated 4/25/2017]

(ii) 152.5 tons of SO2 on rolling 12-month period

(iii) 416.8 tons of CO on rolling 12-month period

(iv) 50.6 tons of PM/PM10 on rolling 12-month period

(v) 34.0 tons of VOC on rolling 12-month period

(3) NOx emissions from Boiler #45 (CU-022) during periods of startup, shutdown, and maintenance shall not exceed 10.0 lbs/hr. [AMS Plan Approval No. 15247, 5/19/2016]

(4) Boiler #45 (CU-022) shall be limited to the following emissions on a rolling 12-month average. [AMS Plan Approval 14149, 5/16/2014]

(i) Sufuric Acid (H_2SO_4) emissions shall be limited to 2.32 tons per year.

(ii) Lead (Pb) emissions shall be limited to 7.61E-04 tons per year.

(iii) Ammonia (NH_3) emissions shall be limited to 3.44 tons per year.

(iv) GHG emissions shall be limited to 182,774 tons per year as CO_2e.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(5) The Permittee shall ensure that the sources listed below do not exceed the following emission limitations:

Source ID	CO	VOC	Particulate[a]	PM-10	NOx	SO_2[d]	Rolling 365 Day Average SO_2 Emission Rate[d]
Lbs Pollutant/MMBTU							
CU018 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU020 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU021 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU022 (GP)	---[c]	0.00094[e]	0.0040[e]	---	0.012[e]	---	---
Tons Pollutant/Year							
CU018 (GP)	---	1.0[a]	---	---	---	---	---
CU020 (GP)	---	1.0[a]	---	---	---	---	---
CU021 (GP)	---	2.7[a]	---	---	---	---	---
CU022 (GP)	5.69[e]	1.44[e]	6.13[e]	---	5.06[e]	15.15[e]	---

[a] - Consent Decree, AMS Plan Approval 08080 dated 11/2/10. The emission are based on rolling 365-day basis. NOx emissions are limited to 0.25 lb/MMBTU on rolling 30-operating-day average using the hourly CEM data for each boiler in accordance with RACT 2 Plan Approval IP16-000264 dated 12/30/16.

[b] - Complies with 25 PA Code 123.11. This streamlined permit condition assures compliance with AMS Regulation II, Section V.

[c] - This source shall comply with the permit condition in 2.(a)(1) of this section.

[d] - SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA code 123.22, AMS Permit 98001 and AMS approval letter dated March 18, 1998, and AMS Plan Approval 08080 dated 11/2/10

[e] - AMS Plan Approval No. 14149 dated 9/2/14, establishes limits for CU022 based on 3-hour average stack tests for VOC and PM and hourly average CEMs data for NOx to

comply with applicable BAT limits. Amended by AMS Plan Approval No. 15247, dated 5/19/16. Annual emissions for other pollutants are limited to the following: 2.32 TPY H_2SO_4, 7.61E-04 TPY Pb, 3.44 TPY Ammonia[f], 182,774 TPY GHG as CO_2e

[f] - Ammonia slip from Boiler #45 shall not exceed 5.0 ppmvd @ 3% 02 [25 Pa Code 127.1] per AMS Plan Approval No. 15247.

GP - Girard Point

(b) Work Practice Standards

(1) NOx Affected Sources

(i) The Permittee of each NO_x budget source and each NO_x budget unit at the source shall hold NO_x allowances available for compliance deductions under 25 Pa Code 145.54 (relating to compliance), as of the NO_x allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NO_x emissions for the control period from the unit, as determined in accordance with 25 Pa Code 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under 25 Pa Code 145.42(e) (relating to NO_x allowance allocation) for the control period or to account for excess emissions for a prior control period under 25 Pa Code 145.54(d) or to account for withdrawal from the NO_x budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under 25 Pa Code 145.86 and 145.87 (relating to withdrawal from NO_x Budget Trading Program; and opt-in source change in regulatory status). [25 Pa Code § 145.6(b)(1)]

(ii) Each ton of NOx emitted in excess of the NOx budget emissions limitation shall constitute a separate violation. [25 Pa Code §145.6(b)(2)]

(iii) The Permittee of a NO_x budget unit that has excess emissions in any control period shall do the following: [25 Pa Code § 145.6(c)]

(A) Surrender the NOx allowances required for deduction under 25 Pa Code §145.54(d)(1)

(B) Pay any fine penalty or assessment or comply with other remedy imposed under 25 Pa Code § 145.54(d)(3) of the act.

(iv) Except as provided under 25 Pa Code 145.11 (relating to alternate NOx authorized account representative), each NOx budget source, including all NOx budget units at the source, shall have only one, NOx authorized account representative, with regard to all matters under the NOx Budget Trading Program concerning the source or any NOx budget unit at the source. [25 Pa Code §145.10(a)]

(v) Each submission under the NOx Budget Trading Program shall be submitted, signed and certified by the NOx authorized account representative for each NOx budget source on behalf of which the submission is made. [25 Pa Code 145.10(e)]

(vi) For more information on NOx affected sources, see condition (e)(4) of this section.

(2) Each No. 3 Boilerhouse boiler (CU018, CU020, & CU021, & CU022) shall burn only refinery fuel gas. [AMS Plan Approval 08080, 11/2/10, AMS Plan

Approval 06050A dated 3/20/2015, AMS Plan Approval 15247 dated 5/19/2016]

(3) Total combustion of acid soluble oil (ASO) at the No. 3 Boiler House shall not exceed 8.92 barrels per day on a rolling 365-day basis. Total combustion of ASO system line wash material at the No. 3 Boiler House shall not exceed 35.7 barrels per day on a rolling 365-day basis. [AMS Plan Approval 08080, 11/2/10]

(4) Total heat input to the No. 3 Boilerhouse (CU-018, CU-020, CU-021, CU-022) shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis. [AMS Plan Approval 08080, 11/2/10, AMS Plan Approval 15247 dated 5/19/2016]

(5) The hourly heat input to Boiler Nos. 37 (CU-018) and 39 (CU-020) shall be capped at 495 MMBTU/hr for each boiler. The hourly heat input to Boiler No. 40 (CU-021) shall be capped at 660 MMBTU/hr. The hourly heat input to Boiler No. 45 (CU-022) shall be capped at 350 MMBTU/hr. [Case-by-case RACT, 25 PA Code Sections 129.91-95, AMS Plan Approval 08080, 11/2/10, AMS Plan Approval 14149, dated 9/2/14, AMS Plan Approval 15247 dated 5/19/2016]

(6) The No. 3 Boilerhouse (CU-018, CU-020, CU-021, CU-022) shall be equipped with continuous monitors and recorders for NOx and O2. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139.

(7) An annual adjustment or tune-up shall be performed on the combustion process for each boiler by December 31st of each year not to exceed 12 months between tunings. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2G and 3, 25 PA Code §129.93(b)(2)-(5)] The actual test may be performed anywhere between October 1 and December 31 for any source.

(8) The hydrogen sulfide content of the refinery fuel gas burned in the boilers is limited to 0.1 gr/dscf. [AMS Permit 94329 dated December 27, 1994, paragraph 3, AMS Permit 94145 to 94150 dated September 26, 1994, paragraph 3]

(9) The hydrogen sulfide content of refinery fuel gas burned in boiler 45 is limited to 162 ppmv (determined hourly on a 3-hour rolling average basis) and 60 ppmv (determined daily on a 365 successive calendar day rolling average basis. [40 CFR 60.102a(g)(1)(ii), AMS Plan Approval 14149, dated 9/2/14, AMS Plan Approval 15247 dated 5/19/2016]

(10) The Permittee shall operate Low NOx burners on CU018, CU020, CU021, and CU022 (Girard Point). [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2A, AMS Plan Approval 15247 dated 5/19/2016]

(11) CU018, CU020, CU021, and CU022 shall be operated with Flue Gas Recirculation (FGR). [Case by case RACT, 25 Pa Code §§129.91-95, Section 2A, AMS Plan Approval No. 15247, dated 5/19/16]

(i) Annual checks of CO level in the #3 Boilerhouse stack shall be conducted using a handheld instrument to assure performance of the CO oxidation catalyst.

(12) CU022 shall be equipped with CO oxidation catalyst, Selective Catalytic Reduction (SCR), and wet electrostatic precipitator (WESP) [AMS Plan Approval No. 15247, dated 5/19/16]

(13) The Permittee shall ensure that all fuel burning sources are capped at the heat input specified in the table below:

Source ID	Hourly Heat Input Cap (MMBTU/hr)	Rolling 12-month Heat Input Cap (MMBTU/yr)
CU018 (GP)	495[a]	---
CU020 (GP)	495[a]	---
CU021 (GP)	660[a]	---
CU022 (GP)	350	---

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2C.

(14) Beginning January 31, 2016, the Permittee shall conduct tune-up for each boiler to demonstrate compliance with 40 CFR 63 Subpart DDDDD

(i) Tune-ups shall be conduction every 5 years on boiler with continuous oxygen trim system. [40 CFR 63.7540(a)(12)]

(ii) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(A) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(B) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(C) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(D) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(E) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments

are made). Measurements may be taken using a portable CO analyzer;

(iii) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Section D.2(b)(12)(ii)(A) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(iv) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

(15) Periods of startup, shutdown, and maintenance shall not exceed 200 hours per rolling 12 month period for Boiler #45 [AMS Plan Approval No. 15247, 5/19/2016]

(c) Testing Requirements

[25 PA Code §139]

(1) NOx Affected Sources

(i) The Permittee shall comply with the initial certification and recertification procedures in accordance with 25 Pa Code §145.71. [25 Pa Code §145.71(b)]

(ii) The NOx authorized account representative shall submit an application to the Department within 45 days after completing all initial certification or recertification tests required under 25 Pa Code 145.71 (relating to initial certification and recertification procedures) including the information required under 40 CFR Part 75, Subpart H. [25 Pa Code §145.74(c)]

(2) Compliance with CO, PM/PM10/PM2.5 and Ammonia emission shall be demonstrated every five years from the previous stack test. [AMS Plan Approval No. 14149, 9/2/2014 AMS Plan Approval No. 15247, dated 5/19/16]

(i) The operating parameter (maximum voltage, maximum ammonia injection, and minimum inlet temperature) may be modified through subsequent AMS approved stack tests.

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance.

(2) Compliance with the NOx emission limitations listed in Section D.2(a)(3) shall be calculated on a 30-day rolling average based on hourly averages of CEM data. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 4B]

(3) The fuel type and fuel usage for each boiler.

(4) NOx emissions from Boilerhouse No. 3 shall be monitored using a continuous emission monitoring system (CEMS) and will measure O2 and NOx concentrations. [AMS Plan Approval 16000264, 12/30/2016]

(5) The Permittee shall monitor all fuel input to boilers with BTU limitations in Section D.2(b)(4),(5), & (11) on a daily basis to ensure capacity limits are not

exceeded or install fuel limiting devices on the boilers to keep capacities below the allowable limits. The compliance method must be in place by June 30th 2000. [Case-by-case RACT, 25 Pa Code §§129.91-95]

(6) The Permittee shall demonstrate compliance with the SO2 emission limitations by monitoring the sulfur content of the fuel burned. [SO2 Operating Permit No. SO2-95-039, and Permits 94145 to 94150 dated September 26, 1994, paragraph 6]

(7) NOx Affected Sources

(i) 25 Pa Code 145.6(a) - Standard requirements – Monitoring Requirements.

(A) The Permittee and the NOx authorized account representative of each NOx budget source and each NOx budget unit at the source shall comply with the monitoring requirements of 25 Pa Code 145.70-145.76 (relating to recordkeeping and recording requirements).

(B) The emissions measurements recorded and reported in accordance with 25 Pa Code 145.70-145.76 shall be used to determine compliance by the unit with the NOx budget emissions limitation under 25 Pa Code 145.6(c).

(ii) 25 Pa Code 145.6(b) - Standard requirements – NOx Requirements.

(A) The Permittee of each NOx budget source and each NOx budget unit at the source shall hold NOx allowances available for compliance deductions under 25 Pa Code 145.54 (relating to compliance), as of the NOx allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with 25 Pa Code 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under 25 Pa Code 145.42(e) (relating to NOx allowance allocation) for the control period or to account for excess emissions for a prior control period under 25 Pa Code 145.54(d) or to account for withdrawal from the NOx budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under 25 Pa Code 145.86 and 145.87 (relating to withdrawal from NOx Budget Trading Program; and opt-in source change in regulatory status).

(B) A NOx budget unit shall be subject to the above requirements in Section D.2.(d)(7) (ii)(A) starting on May 1, 2003, or the date on which the unit commences operation, whichever is later.

(v) The Permittee of a unit that is not subject to an acid rain emissions limitation shall comply with requirements of 40 CFR 75.62, except that the monitoring plan is only required to include the information required by 40 CFR Part 75, Subpart H. [25 Pa Code §145.74(b)(2)]

(8) The Permittee shall daily monitor the fuel type and fuel usage on a daily basis of the No 3 Boilerhouse to ensure the heat inputs limits are not exceeded. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 02184 dated 5/13/04, AMS Plan Approval 08080, 11/2/10, AMS Plan Approval 15271 dated 4/25/17]

(9) The Permittee shall demonstrate compliance with SO2 limits of the No. 3 Boilerhouse boilers by monitoring the sulfur content of fuel burned. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO2 Operating Permit No. SO2-95-039, [AMS Plan Approval 08080, 11/2/10]

(9) The Permittee shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas to No. 3 Boilerhouse with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 25 PA Code Chapter 139 and 40 CFR 60.105(a)(4). [AMS Plan Approval 08080, 11/2/10]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Fuel type and fuel usage of the fuel burned on a daily basis.

(2) Records of annual adjustments or tuneups. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5; 25 PA Code §129.93(b)(3)(i)-(v)]

(3) CEM recorder records.

(4) NOx Affected Sources [NOx Operating Permit]

(i) The Permittee shall monitor and report NOx emissions in accordance with 40 CFR Part 96, Subpart HHHH (relating to monitoring and reporting), and establish a CAIR-authorized account representative and general account, in accordance with 40 CFR Part 96, Subparts BBBB and FFFF (relating to CAIR designated representative for CAIR NOx Ozone Season sources; and CAIR NOx Ozone Season Allowance Tracking System), incorporated into Subchapter D by reference, for the purposes of ensuring continued compliance with the non-EGU NOx Trading Program budget limitation 25 Pa Code 145.8(d)(1) and of retiring CAIR NOx Ozone Season allowances. [25 Pa Code 145.8(d)(2)]

(ii) A CAIR-authorized account representative and general account shall be established in accordance with 40 CFR Part 96, Subparts BB and FF (relating to CAIR designated representative for CAIR NOx sources; and CAIR NOx allowance tracking system), incorporated into 25 Pa Code 145 Subchapter D by reference, for the purpose of retiring CAIR NOx allowances. [25 Pa Code 145.8(d)(3)]

(iii) If the combined NOx emissions from all units subject to 25 Pa Code 145 (in the state of Pennsylvania) exceed 3,438 tons in an ozone season, then a unit whose actual emissions exceed the unit's allowable emissions for that ozone season, as determined under 25 Pa Code 145.8(d)(5), shall surrender to the Pa DEP by April 30 of the year following the ozone season one CAIR NOx Ozone Season allowance and one CAIR NOx allowance for each ton of excess emissions. A unit whose excess emissions are 0.5 ton or greater of the next excess ton shall surrender 1 full ton of CAIR NOx allowances (banked or current) for that excess emission. Units under common ownership may include the allowable and actual emissions from multiple units to determine whether a unit must surrender allowances. [25 Pa Code 145.8(d)(6)]

(iv) If a facility's allowable emissions exceed the facility's actual emissions for an ozone season, the owner or operator may deduct the difference or any portion of the difference from the actual emissions of units under the facility's common control that are subject to § § 129.201—129.203 (relating to boilers; stationary combustion turbines; and stationary internal combustion engines). [25 Pa Code 145.8(d)(11)]

(5) The Permittee shall keep the following records for the No 3 Boilerhouse boilers: [AMS Plan Approval 08080, 11/2/10]

(i) Daily fuel type, fuel usage, and refinery fuel gas heating value for each boiler.

(ii) No. 3 Boilerhouse rolling 12-month emissions on a monthly basis to demonstrate compliance with the emission limits. NOx emissions shall be determined based on CEM data. Other emissions shall be determined based on AMS-approved stack test data, AP-42 emissions factors, or other AMS-approved emission factors. When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used. [AMS Plan Approval No. 15271, dated 4/25/17]

(iii) Total heat input to the No. 3 Boilerhouse in MMBTU per year (HHV) on a rolling 365-day basis.

(iv) Annual stack CO check using handheld instruments.

(6) Maintain on-site and submit, if requested by the Administrator, an annual report containing the following information to demonstrate compliance with 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)(10)(vi)]

(i) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the process heater;

(ii) A description of any corrective actions taken as a part of the tune-up; and

(iii) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(f) Reporting Requirements

(1) NOx Affected Sources

(i) To surrender allowances under 25 Pa Code 145.8(d)(6), the Permittee shall surrender the required CAIR NOx Ozone Season allowances and CAIR NOx allowances to the Pa DEP designated NOx allowance tracking system account and provide to the PA DEP, in writing, the following: [25 Pa Code 145.8(d)(7)]

(A) The serial number of each allowance surrendered.

(B) The calculations used to determine the quantity of allowances required to be surrendered.

(ii) If the Permittee fails to comply with 25 Pa Code 145.8(d)(6), Permittee shall by June 30 surrender three CAIR NOx Ozone Season allowances and three CAIR NOx allowances of the current or later year vintage for each ton of

excess emissions as calculated under 25 Pa Code 145.8(d)(6). [25 Pa Code 145.8(d)(8)]

(iii) The surrender of CAIR NOx ozone season allowances and CAIR NOx allowances under 25 Pa Code 145.8(d)(6) does not affect the liability of the owner or operator of the unit for any fine, penalty or assessment, or an obligation to comply with any other remedy for the same violation, under the CAA or the act. [25 Pa Code 145.8(d)(9)]

(A) For purposes of determining the number of days of violation, if a facility has excess emissions for the period May 1 through September 30, each day in that period (153 days) constitutes a day in violation unless the owner or operator of the unit demonstrates that a lesser number of days should be considered.

(B) Each ton of excess emissions is a separate violation.

(2) For each boiler, the Permittee shall submit the following:

(i) Submit all notifications required by 40 CFR 63.7545;

(ii) Submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD;

(iii) Submit immediate startup, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

(iv) Submit a signed statement in the Notification of Compliance Status report that indicates that the Permittee conducted a tune-up of the unit. [40 CFR 63.7530(d)]

(v) The Notification of Compliance Status shall include a signed certification that the energy assessment was completed according to 40 CFR 63 Subpart DDDDD Table and is an accurate depiction of your facility at the time of the assessment. [40 CFR 63.7530(e)]

(B) Point Breeze equipment numbered CU-025 (Boiler No. 1).

(a) Emission Limitations

(1) Particulate matter from Boiler No. 1 may not exceed 0.10 lbs/MMBtu.

(2) Carbon Monoxide (CO) emissions from Boiler No. 1 may not exceed 1% by volume of exhaust gases. [AMR VIII]

(b) Work Practice Standards

(1) Boiler No. 1 shall be operated and maintained in accordance with both the manufacturer’s specifications and the specifications as approved by AMS Installation Permit No. 11276.

(2) Boiler No. 1 shall only burn No. 2 fuel oil or natural gas.

(3) The maximum sulfur content of No. 2 fuel oil shall be 15 ppm by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

(4) If visible emissions are detected, adjustments shall be made to the unit to eliminate the visible emissions or a certified smoke reader shall be used to determine the opacity of the emissions.

(c) Monitoring Requirements

(1) Visible emissions from Boiler No. 1 shall be monitored daily. The visual check does not need to meet the requirements of U.S.E.P.A Reference Method 9.

(2) PES shall monitor monthly fuel usage to Boiler No. 1.

(d) Recordkeeping Requirements

(1) PES shall record monthly fuel usage and document the sulfur content of fuel oil used in Boiler No. 1.

(2) PES shall keep records of the daily visual checks for Boiler No. 1.

(3) All records shall be kept for a period of five (5) years and produced upon request.

3. Group 02 – Process Heaters

Girard Point equipment numbered CU004, CU005, CU006, CU007, CU008, CU009, CU010, CU011, CU012, CU013, CU014, CU015, CU016, and CU017. Point Breeze equipment numbered CU101, CU102, CU103, CU108, CU109, CU110, CU111, CU112, CU113, CU114, CU115, CU118, CU123, CU124, CU125, CU126, CU127, CU128, CU129, CU-137, CU-138, CU-139, and CU-140.

(a) Emission Limitations

(1) Each unit shall not burn any fuel gas that contains hydrogen sulfide (H2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104(a)(1), Consent Decree Order 05-CV-2866]

(2) Carbon Monoxide emissions from each heater shall not exceed 1% of the exhaust gases [AMR VIII]

(3) Emission from the 1332 CRU H-2 Heater (CU-009) shall not exceed as follows:

(i) Carbon Monoxide emissions shall not exceed 400 ppmdv at 3% oxygen, [40 CFR 63 Subpart DDDDD, Table 1, 25 Pa Code §§127.1, AMS Plan Approval 05124 dated 10/4/05]

(ii) Nitrogen Oxide emission shall not exceed 0.04 lbs/MMBTU at 3% O2 (3-run average) and 10.51 tons per rolling 12 month period upon completion of the Tier 3 project. [25 Pa Code 127.1, AMS Plan Approval 05124 dated 10/4/05, AMS Plan Approval No. 15253, 9/22/16]

(iii) VOC Emissions shall not exceed 1.00 ton per rolling 12 month period [AMS Plan Approval IP16-000264, 12/30/16]

(iv) PM emissions from the heater shall not exceed 0.10 lbs/MMBtu gross heat input. [AMS Approved IP16000142, 10/17/16]

(v) SO2 emissions from the heater shall not exceed 0.53 lbs/MMBtu at any time or 0.33 lbs/MMBtu on a rolling 365-day average. [AMS Approved IP16000142, 10/17/16]

(4) Emissions from the 1332 CRU H-3 Heater (CU-012) shall not exceed as follows [AMS Plan Approval No. 15253, 9/22/16]:

(i) Nitrogen Oxide (NOx) emissions shall not exceed 17.67 tons per rolling 12-month period upon completion of the Tier 3 project.

(ii) VOC emissions shall not exceed 0.97 tons per rolling 12-month period upon completion of the Tier 3 project.

(5) Emission from the 1332 H-401 and H-400 Heaters (CU-010 and CU-011) shall not exceed as follows:

(i) The combined Nitrogen Oxide (NOx) emissions from the heaters shall not exceed 62.7 tons per year on a rolling 12-month basis [AMS Plan Approval 09040, dated 2/1/10]

(ii) Nitrogen Oxides (NOx) emissions into the atmosphere from the shared exit stack of the process heaters after the SCR system shall not exceed 0.06 lb/MMBTU on a 365 rolling operating day basis, calculated daily [AMS Plan Approval 09040, dated 2/1/10]

(A) During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU, as defined in the RACT Plan Approval (8/1/2000). All emissions during the natural draft duration shall be counted toward the annual limitation in Section D.3(a)(5)(ii).

(B) The daily average NOx emissions from CU-010 and CU-011 shall not exceed 0.15 lbs NOx/MMBtu for either heater. On a rolling 30 operating day average, NOx emissions from these heaters shall not exceed 0.25 lbs/MMBtu. [AMS Ract Plan Approval dated 2/9/16, AMS IP16-000264 dated 12/30/16]

(iii) Ammonia (NH3) emission from the shared exit stack S-117 of process heaters after the SCR system shall not exceed 1.16 lbs/hr. [25 Pa Code 127.1, AMS Plan Approval 09040, dated 2/1/10]

(iv) Particulate matter emissions from the Heater 1332 H-401 (CU-010) shall not exceed 0.17 lb/MMBTU and 1332 H-400 (CU-011) shall not exceed 0.19 lb/MMBTU [25 PA Code 123.11(a)(2) and AMS Reg. II, Sec. V, AMS Plan Approval 09040, dated 2/1/10]

(6) Emission from the 210 13H-1 Heater (CU-103) shall not exceed as follows:

(i) Sulfur dioxide (SO2) emissions shall not exceed 11.01 tons in any rolling 12-month period. [AMS Plan Approval 02184 dated 8/12/04]

(7) Emission from the 870 H1 and H2 Heaters (CU-137 and CU-138) shall not exceed as follows: [AMS Plan Approval No. 15271, 4/25/17]

(i) Nitrogen Oxide (NOx) emissions from the heaters shall not exceed 0.035 lb/MMBTU. [AMS Plan Approval 02184, dated 8/12/04]

(ii) NOx emissions

(A) 870 H1 shall not exceed 3.40 lbs/hr and 12.32 tpy on a 12 month rolling average upon completion of the Tier 3 project for the annual limit. [AMS Plan Approval No. 15253, 09/22/16 & AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 1.86 lbs/hr and 6.50 tpy on a rolling 12 month average upon completion of the Tier 3 project for the annual limit. [AMS Plan Approval No. 15253, 09/22/16 & AMS Plan Approval No. 15271, 4/25/17]

(iii) CO emissions

(A) 870 H1 shall not exceed 14.04 lbs/hr and 61.50 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 4.37 lbs/hr and 19.13 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(iv) VOC emissions

(A) 870 H1 shall not exceed 0.52 lbs/hr and 0.17 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 0.29 lbs/hr and 0.21 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(v) SO_2 emissions

(A) 870 H1 shall not exceed 3.88 lbs/hr and 16.99 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 2.12 lbs/hr and 9.29 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(vi) PM/PM10 emissions

(A) 870 H1 shall not exceed 0.18 lbs/hr and 0.79 tpy on a 12 month rolling average. [AMS Plan Approval No. 15271, 4/25/17]

(B) 870 H2 shall not exceed 0.1 lbs/hr and 0.43 tpy on a rolling 12 month average. [AMS Plan Approval No. 15271, 4/25/17]

(vii) Carbon monoxide emissions from the heaters shall not exceed 400 ppmdv at 3% oxygen [25PA Code 127.1 (BAT), AMS Plan Approval 02184, dated 8/12/04]

(8) Emission from the Unit 433 Isostripper H-1 Heater (CU-017) shall not exceed as follows: [AMS Plan Approval 06050, dated 12/4/06, PM, CO, and SO2 limits assure compliance with 25 PA Code 123.11 & 123.22, AMR II Sec VII, AMR VIII Sec II]

(i) NOx emissions shall not exceed 39.9 ton per year on a rolling 365-day basis and 0.25 lbs/MMBtu on a rolling 30 operating day average [AMS IP16-000264, 12/30/16]

(ii) NOx emissions shall not exceed 0.035 lbs/MMBTU on an hourly basis using CEMs

(A) During periods of start-up and shutdown, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. Start up shall be defined as that period of time from initiation of the heater operation until the unit reaches steady state. Shutdown shall be defined as the cessation of the heater operation. Each period shall not exceed 8 hours. Shutdown and startup periods are limited to 40 hours per 12 month rolling period combined. [AMS Plan Approval No. 06050A, 3/20/15]

(B) During periods of chemical washing of the 433 Unit, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. The total chemical washing and dryout periods shall not exceed 144 hours per rolling 24 month period. The air dry out period time is defined as the time required to operate the Heater at very low firing rates when compressed air or nitrogen is injected into the unit and the temperature increased to evaporate free water in the system. Free water must be removed prior to

re-introducing acid into the unit, and is evidenced by no longer finding any water at low point bleeders.

(iii) Particulate matter (total PM/PM10) emissions shall not exceed 8.5 ton per year on a rolling 365-day basis.

(iv) Particulate matter (total PM/PM10) emissions shall not exceed 0.00745 lbs/MMBTU gross heat input.

(v) Carbon monoxide emissions shall not exceed 112.2 ton per year on a rolling 365-day basis.

(vi) Carbon monoxide emissions shall not exceed 0.0985 lbs/MMBTU gross heat input.

(vii) Sulfur dioxide emissions shall not exceed 37.6 ton per year on a rolling 365-day basis.

(viii) Sulfur dioxide emissions shall not exceed 0.033 lbs/MMBTU gross heat input.

(ix) VOC emissions shall not exceed 7.4 tons per year on a rolling 365-day basis. [AMS Plan Approval 06050A, dated 3/20/2015]

(x) VOC emissions shall not exceed 0.0065 lbs/MMBtu gross heat input. [AMS Plan Approval 06050A, dated 3/20/2015]

(9) Emission from the Unit 859 1H-1 Heater (CU-139) shall not exceed as follows: [AMS Plan Approval 06144, dated 1/29/08, PM, CO, and SO2 limits assure compliance with 25 PA Code 123.11 & 123.22, AMR II Sec VII, AMR VIII Sec II, and 40 CFR Subpart DDDDD Table 1]]

(i) NOx emissions shall not exceed 8.6 ton per year on a rolling 365-day basis

(ii) NOx emissions shall not exceed 0.02 lbs/MMBTU on an hourly based on 3-one-hour stack test

(iii) Particulate matter (total PM/PM10) emissions shall not exceed 3.2 ton per year on a rolling 365-day basis.

(iv) Particulate matter (total PM/PM10) emissions shall not exceed 0.00745 lbs/MMBTU gross heat input.

(v) Carbon monoxide emissions shall not exceed 35.4 ton per year on a rolling 365-day basis.

(vi) Carbon monoxide emissions shall not exceed 0.0825 lbs/MMBTU gross heat input.

(vii) Sulfur dioxide emissions shall not exceed 5.2 ton per year on a rolling 365-day basis.

(viii) Sulfur dioxide emissions shall not exceed 0.033 lbs/MMBTU gross heat input.

(10) The Unit 868 8H-101 Heater (CU-129) is limited as follows: [25 PA Code 127.1, AMS Plan Approval 12195, 2/19/14]

(i) Carbon Monoxide emissions shall not exceed 400 ppmdv at 3% oxygen.

(ii) Nitrogen Oxides (NOx) emissions shall not exceed 0.113 lbs/MMBtu on a 30-day rolling average and 27.1 tons per rolling 12-month period.

(iii) Carbon Monoxide (CO) emissions shall not exceed 4.9 lbs/hour and 18.9 tons per rolling 12-month period.

(iv) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.6 tons per rolling 12-month period.

(v) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 1.7 tons per rolling 12-month period.

(vi) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vii) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 27,054 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(viii) Heat input shall not exceed 480,000 MMBTU on a rolling 365-day basis.

(11) The Unit 231 B-101 Heater (CU-016) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.03 lbs/MMBtu on a 30-day rolling average and 12.8 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 8.6 lbs/hour and 34.4 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.8 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.20 lbs/MMBtu and 3.1 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 49,243 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 856,000 MMBTU on a rolling 365-day basis.

(12) The Unit 210 H-101 Heater (CU-101) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.089 lbs/MMBtu on a 30-day rolling average and 73.1 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 15.7 lbs/hour and 66.9 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 2.7 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.19 lbs/MMBtu and 6.1 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 95,847 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 1,643,000 MMBTU on a rolling 365-day basis.

(13) The Unit 210 H-201 Heater (CU-102) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.030 lbs/MMBtu on a 30-day rolling average, 0.25 lbs/MMBtu on a 30 operating day average, and 32.6 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 20.8 lbs/hour and 88.5 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 3.2 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 8.0 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 126,707 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 2,172,000 MMBTU on a rolling 365-day basis.

(14) The Unit 864 PH-1 Heater (CU-118) is limited as follows: [AMS Plan Approval 15253, 9/22/16]

(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 18.40 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 25.04 tons per rolling 12 month period upon completion of the Tier 3 project.

(iv) Firing duty shall not exceed 80.0 MMBtu/hr on a daily average basis.

(v) Firing duty shall not exceed 613,200 MMBtu per rolling 365-day period.

(15) The Unit 864 PH-7 Heater (CU-123) is limited as follows: [AMS Plan Approval 15253, 9/22/16]

(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 9.99 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 13.59 tons per rolling 12 month period upon completion of the Tier 3 project.

(iv) Firing duty shall not exceed 45.5 MMBtu/hr on a daily average basis.

(v) Firing duty shall not exceed 332,880 MMBtu per rolling 365-day period.

(16) The Unit 864 PH-11 Heater (CU-124) is limited as follows: [AMS Plan Approval 15253, 9/22/16]

(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 15.24 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 20.75 tons per rolling 12 month period upon completion of the Tier 3 project.

(iv) Firing duty shall not exceed 74.0 MMBtu/hr on a daily average basis.

(v) Firing duty shall not exceed 508,080 MMBtu per rolling 365-day period.

(17) The Unit 864 PH-12 Heater (CU-125) is limited as follows: [AMS Plan Approval 15253, 9/22/16]

(i) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 16.56 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 22.54 tons per rolling 12 month period upon completion of the Tier 3 project.

(iv) Firing duty shall not exceed 85.1 MMBtu/hr on a daily average basis.

(v) Firing duty shall not exceed 551,880 MMBtu per rolling 365-day period.

(18) The Unit 865 11H-1 Heater (CU-126) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.030 lbs/MMBtu on a 30-day rolling average and 10.5 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 7.2 lbs/hour and 28.5 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.7 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 2.6 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 40,777 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

Heat input shall not exceed 699,000 MMBTU on a rolling 365-day basis.

(19) The Unit 865 11H-2 Heater (CU-127) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.113 lbs/MMBtu on a 30-day rolling average and 28.3 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 5.3 lbs/hour and 20.4 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.5 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 1.8 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 29,168 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 500,000 MMBTU on a rolling 365-day basis.

(20) The Unit 866 12H-1 Heater (CU-128) is limited as follows: [AMS Plan Approval 12195, 2/19/14]

(i) Nitrogen Oxides (NOx) emissions shall not exceed 0.113 lbs/MMBtu on a 30-day rolling average and 25.8 tons per rolling 12-month period.

(ii) Carbon Monoxide (CO) emissions shall not exceed 5.0 lbs/hour and 18.6 tons per rolling 12-month period.

(iii) Sulfur Dioxide (SO2) emissions from the heater shall not exceed 500 ppmvd and 0.5 tons per rolling 12-month period.

(iv) Total Particulate Matter (PM10, PM2.5, filterable, and condensable) emissions shall not exceed 0.10 lbs/MMBtu and 1.7 tons per rolling 12-month period.

(v) VOC emissions shall not exceed 1.0 tons per rolling 12-month period. Compliance shall be monitored on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual. [AMS Permit 16000264, 12/30/16]

(vi) GHG emissions (Expressed as CO2 Equivalent) shall not exceed 26,601 tons per rolling 12-month period.

(A) Emission factors are 53.02 kg CO_2/MMbu, 0.001 kg CH_4/MMBtu, and 0.0001 kg N_2O/MMbtu. GWP for CH_4=25 and N_2O=298.

(vii) Heat input shall not exceed 456,000 MMBTU on a rolling 365-day basis.

(21) The Unit 870 H3 Heater (CU-140) is limited as follows: [AMS Plan Approval 15253 9/22/16]

(i) NOx emissions shall not exceed 0.03 lb/MMBtu based on the average of three stack test runs upon completion of the Tier 3 project.

(ii) NOx emissions shall not exceed 11.96 tons per rolling 12 month period upon completion of the Tier 3 project.

(iii) CO emissions shall not exceed 11.96 tons per rolling 12 month period upon completion of the Tier 3 project.

(iv) Firing duty shall not exceed 91.0 MMBtu/hr on a daily average basis.

(v) Firing duty shall not exceed 797,160 MMBtu per rolling 365-day period.

(22) The Permittee shall ensure that the heaters listed below do not exceed the following particulate, NOx emission, and SO2 limitations: [Case-by-case RACT, 25 Pa Code §§129.91-95, SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 05124 dated Oct. 4, 2005]

Table D.3.a.1

Source ID	Particulate Limitation (lbs PM/MMBTU)	NOx Limitation (lbs NO_x/ MMBTU/)[a]	SO_2 Limitation[b] (lbs SO_2/MMBTU)	Rolling 365 Day Average Emission Rate[b] (lbs SO_2/MMBTU)
CU-004 GP	0.2[d]	0.177 [a]	0.53	0.33
CU-005 GP	0.2[d]	---	0.53	0.33
CU-006 GP	0.2[d]	---	0.53	0.33
CU-007 GP	0.2[d]	---	0.53	0.33
CU-008 GP	0.2[d]	---	0.53	0.33
CU-009 GP	0.10[h]	0.04 [h]	0.53	0.33
CU-012 GP	0.2[d]	---	0.53	0.33
CU-014 GP	0.2[d]	0.257 [a,n,p]	0.53	0.33
CU-015 GP	0.1[d]	0.060 [i]	0.53	0.53
CU-016 GP	0.2[d,j]	0.03 [a,j]	0.53 [j]	0.33[j]
CU-017 GP	0.00745[m]	0.035 [m]	0.033[m]	0.33
CU-101 PB	0.19 [c]	0.089 [a]	0.53	0.33
CU-103 PB	0.1[d]	0.104 [a]	0.53	0.33
CU-109 PB	0.2[d]	0.250 [a,p]	0.53	0.33
CU-110 PB	0.2	0.163 [a]	0.53	0.33
CU-111 PB	0.2[d]	0.250 [a,p]	0.53	0.33
CU-112 PB	0.2[d]	0.163 [a]	0.53	0.33
CU-113 PB	0.2[d]	---	0.53	0.33
CU-114 PB	0.2[d]	0.157 [a]	0.53	0.33
CU-115 PB	0.2[d]	---	0.53	0.33
CU-118 PB	0.1[d]	0.06 [a,q]	0.53	0.33
CU-123 PB	0.1[d]	0.06 [q]	0.53	0.33
CU-124 PB	0.1[d]	0.06 [a,q]	0.53	0.33
CU-125 PB	0.1[d]	0.06 [a,q]	0.53	0.33
CU-126 PB	0.1[d]	0.03[a,j]	0.53	0.33
CU-127 PB	0.1[d]	---	0.53	0.33

Source ID	Particulate Limitation (lbs PM/MMBTU)	NOx Limitation (lbs NO_x/ MMBTU/)[a]	SO_2 Limitation[b] (lbs SO_2/MMBTU)	Rolling 365 Day Average Emission Rate[b] (lbs SO_2/MMBTU)
CU-128 PB	0.1[d]	---	0.53	0.33
CU-129 PB	0.1[d]	---	---	0.33
Quarterly NOx compliance not required for the following sources[n]				
CU-010 GP	0.17[g]	0.06[a,g]	0.53	0.33
CU-011 GP	0.19[g]	0.06[a,g]	0.53	0.33
CU-013 GP	0.12[c]	0.230[a]	0.53	0.33
CU-102 PB	0.10[d,k]	0.030[k]	0.53	0.33
CU-137 PB	0.1[d]	0.035[f]		
CU-138 PB	0.1[d]	0.035[f]	---	---
CU-139 PB (859 1H-1)	0.00745[l]	0.02[l]	0.033[l]	
CU-140 PB (870 H-3)	---	0.03[q]	---	---

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95.

[b] - SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA code 123.22.

[c] - Complies with 25 PA Code 123.11. This streamlined permit condition assures compliance with AMS Regulation II, Section V.

[d] - Complies with AMS Regulation II, Section V. This streamlined permit condition assures compliance with 25 PA Code 123.11.

[e] - Complies with Best Available Technology, 25 PA Code 127.1

[f] - AMS Plan Approval 02184 dated May 12, 2004

[g] - AMS Plan Approval 09040 dated February 1, 2010, the NOx emission are 365 rolling operating day basis, calculated daily. During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU RACT Plan Approval (8/1/2000).

[h] - AMS Plan Approval 05124 dated October 4, 2005, Complies with AMS Regulation II, Section V. This streamlined permit condition assures compliance with 25 PA Code 123.11.

[i] - AMS Plan Approval 07163 dated February 5, 2008

[j] - AMS Plan Approval 12195 dated February 19, 2014

[k] - AMS Plan Approval 10180 dated February 3, 2011

[l] - AMS Plan Approval 06050 dated December 4, 2006. This streamlined permit condition assures compliance with AMS Regulation II, Section V and 25 PA Code 123.11

[m] - AMS Plan Approval 06144 dated January 29, 2008. This streamlined permit condition assures compliance with AMS Regulation II, Section V and 25 PA Code 123.11

[n] - NOx emission are based on the 30-day rolling average.

[o] - AMS RACT Plan Approval dated February 9, 2016

[p] - AMS IP16-000264, dated December 30, 2016. Sets 30 operating day average emission limit to 0.25 lb NOx/MMBtu

[q] - AMS Plan Approval 15253 dated September 22, 2016

GP - Girard Point

PB - Point Breeze

(b) Work Practice Standards

(1) The Permittee shall perform an annual adjustment or tune-up for the specified sources listed in the Table D.3.b.1 below. This adjustment shall include, at a minimum, the following: [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2E; 25 PA Code §129.93(b)(2) and (5)]

(i) Sources shall complete annual combustion tuning by December 31st of each year not to exceed 12 months between tunings and shall at a minimum meet the requirements set forth in 25 Pa. 129.93 (b)(2) through (5). [AMS RACT Plan Approval, 2/9/16]

(ii) Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.

(iii) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx, and to the extent practicable minimize emissions of CO.

(iv) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

(v) For oil and gas and combination oil/gas fired units requiring an annual adjustment or tune-up on the combustion process, the Permittee shall make the annual adjustment in accordance with the EPA document "Combustion Efficiency Optimization Manual for Operators of Oil and Gas-fired Boilers," September 1983 (EPA-340/1-83-023) or equivalent procedures approved in writing by the AMS.

(2) The Permittee shall ensure that the specified fuel burning sources listed in Table D.3.b.1 shall be operated within the specifications in the table.

Table D.3.b.1

Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-004	70 [a]	Annual Tuneup or Adjustment [a]	Ultra Low NOx Burner
CU-005	45	Annual Tuneup or Adjustment [a]	
CU-006	49	Annual Tune-up or Adjustment [a]	
CU-007	48	Annual Tune-up or Adjustment [a]	
CU-009	60 [b]	Annual Tune-up or Adjustment [a]	Ultra Low Nox Burners[b] Fuel flow monitor[b]
CU-010	233 [a]	Annual Tune-up or Adjustment [a]	
CU-011	186 [a]	Annual Tuneup or Adjustment [a]	

Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-013	415 [a]	Annual Tune-up or Adjustment [a]	
CU-014	155 [a]	Annual Tune-up or Adjustment [a]	
CU-015	60	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner Fuel Flow Monitor
CU-016	91 [a]	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[l]
CU-017	260 k	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[m]
CU-101	183	Annual Tune-up or Adjustment [a]	
CU-102	242 [a]	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[n]
CU-103	235.4	Annual Tune-up or Adjustment [a]	
CU-109	69.78	Annual Tune-up or Adjustment [a]	
CU-110	174.67	Annual Tune-up or Adjustment [a]	
CU-111	99.44	Annual Tune-up or Adjustment [a]	
CU-112	155	Annual Tune-up or Adjustment [a]	
CU-114	59	Annual Tune-up or Adjustment [a]	
CU-115	49.6	Annual Tune-up or Adjustment [a]	
CU-118	80	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-123	45.5	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-124	74	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-125	85.1	Annual Tune-up or Adjustment [a]	Low Nox Burner[o]
CU-126	87.3[g]	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner[l]
CU-127	64.2 [l]	Annual Tune-up or Adjustment [a]	
CU-128	61.2 [l]	Annual Tune-up or Adjustment [a]	

Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-129	60.0 [l]	Annual Tune-up or Adjustment [a]	Low NOx Burner [d]
CU-137	97 [e,d]	Annual Tune-up or Adjustment [a, o]	Ultra Low NOx Burners with flue gas Recirculation [d,e]
CU-138	53 [e,d]	Annual Tune-up or Adjustment [a, o]	Ultra Low NOx Burners with flue gas Recirculation [d,e]
CU-139	98		Ultra Low NOx Burners
CU-140	110 [o]		Ultra Low NOx Burners [o]

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95. Dated December 6, 2002
[b] - AMS Plan approval 05124 dated October 4, 2005
[c] - AMS Installation Permit 03054 dated July 29, 2003
[d] - 25 Pa Code §§127.1, 25 Pa Code §§127.12(a)(5) complies with Best Available Technology.
[e] - AMS Plan Approval 02184 dated May 12, 2004
[f] - AMS Plan Approval 09040 dated February 1, 2010
[g] - Case-by-case RACT, 25 Pa Code §§129.91-95, AMS Plan Approval 04237 dated August 12, 2005
[k] - AMS Plan Approval 06050 dated December 4, 2006
[l] - AMS Plan Approval 12195 dated February 19, 2014
[m] - AMS Plan Approval 06050A dated March 20, 2015
[n] - AMS RACT Plan Approval dated February 9, 2016
[o] - AMS Plan Approval 15253 dated September 22, 2016

(3) The Permittee shall operate the SCR system while operating the 1332 H-400/401 (CU-010 & CU-011) heaters except during times required to replace SCR catalyst or to do maintenance to the SCR/air pre-heater system or to operate the heaters at low firing rate during reformer catalyst regenerations. [AMS Plan Approval 09040, dated 2/1/10]

(i) The Permittee shall take a daily NOx sample during these maintenance periods when it is necessary to by-pass the SCR/air pre-heater system and the NOx CEM, and the heaters are operated in natural draft mode. During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU, as defined in the RACT Plan Approval (8/1/2000).

(ii) All emissions during the natural draft duration shall be counted toward the annual limitation in Section D.3(a)(5).

(4) Each process heater shall only burn refinery fuel gas or natural gas as listed in Table A-1.

(i) The Permittee shall not burn any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104 (a) (1)]

(5) During 1332 H-400/401 (CU-010 & CU-011) heater start-up the SCR system shall be brought into operation as soon as the flue gas temperature has stabilized in the range of 650 to 780 degrees Fahrenheit (F), the temperature range necessary to satisfy the catalyst system [AMS Plan Approval 09040, dated 2/1/10].

(6) The 868 8H-101 (CU-129) shall only fire refinery fuel gas and shall be equipped with low NOx burners. The firing rate shall not exceed 49.5 MMBTU/hr. [AMS Plan Approval 03054 dated 7/2/03]

(7) The fuel throughput of the 859 ULSD Hydrotreater shall be limited to 60,000 barrels per day calculated on a rolling 365 day average [AMS Plan Approval 06144, dated 1/29/08]

(8) The CU-010, CU-011, CU-013, CU-014, CU-017, CU-102 heaters shall be equipped with continuous monitors and recorders for NOx and O_2. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139. [Consent Decree Order 05-CV-2866]

(9) Beginning January 31, 2016, the Permittee shall conduct tune-up for each process heater to demonstrate compliance with 40 CFR 63 Subpart DDDDD

(i) Annual tune-up shall be conducted on each process heater that do not have continuous oxygen trim system [40 CFR 63.7540(a)(10)]

(ii) Tune-ups shall be conduction every 5 years on process heaters with continuous oxygen trim system. [40 CFR 63.7540(a)(12)]

(iii) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(A) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(B) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(C) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(D) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(E) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments

are made). Measurements may be taken using a portable CO analyzer;

(vi) The Permittee may delay the burner inspection for process heaters with continuous oxygen trim system specified in Section D.3(b)(9)(iii)(A) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(vii) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

(10) The 870 H-1 (CU-137) heater shall be limited to a firing duty of 97.0 MMBtu/hr on a daily average basis and 849,720 MMBtu per rolling 365-day period. [AMS Plan Approval 15271, 4/25/2017]

(11) The 870 H-2 (CU-138) heater shall be limited to a firing duty of 53.0 MMBtu/hr on a daily average basis and 464,280 MMBtu per rolling 365-day period. [AMS Plan Approval 15271, 4/25/2017]

(12) The 870 H-3 (CU-140) heater shall be limited to a firing duty of 91.0 MMBtu/hr on a daily average basis and 797,160 MMBtu per rolling 365-day period. [AMS Plan Approval No. 15253, 9/22/16]

(13) The 1332 H-2 (CU-009) heater shall be limited to a firing duty of 60.0 MMBtu/hr on a daily average basis and 525,600 MMBtu per rolling 365-day period. [AMS Plan Approval No. 15253, 9/22/16]

(14) The 1332 H-3 (CU-012) heater shall be limited to a firing duty of 43.0 MMBtu/hr on a daily average basis and 376,680 MMBtu per rolling 365-day period. [AMS Plan Approval No. 15253, 9/22/16]

(15) Heaters CU-016, CU-101, CU-102, CU-126, CU-127, CU-128, and CU-129 shall monitor and record the MMBTU heat input hourly on a rolling 365-day basis, calculated daily. Fuel gas BTU content shall be continuously monitored at the 862 Unit or tested and recorded daily. The 862 Unit continuous heat input monitor shall meet the requirements of 25 Pa. Code Chapter 139 [AMS Plan Approval 12195, 2/19/14]

(c) Testing Requirements

[25 PA Code §139]

(1) Compliance with the emission limits for the combustion sources listed in Section D.3(a)(22) -Table D.3.a.1shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year of sampling, the Permittee may petition AMS for semiannual monitoring. AMS may, at any time, require three one-hour stack tests per fuel type for each unit where fuels can be fired separately. AMS may, at any time, require three one-hour stack tests for dual-fuel type combustion sources where both fuels must be fired at the same time and compliance with emission limits shall be through the use of one set of three one-hour stack tests. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 4C]

(2) The Permittee shall conduct performance test at the exhaust stack to establish emission factors and demonstrate compliance with NH3 emissions of the 1332 H400/401 (CU-010 & CU-011) heaters. NH3 emissions shall be determined

using the average of 3 one-hour tests per the EPA Reference Method CTM 027. [AMS Plan Approval 09040, dated 2/1/10].

(i) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, the Permittee must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher rate.

(ii) The NH3 performance test shall be conducted within 5 years of the last performance test.

(3) The Permittee shall conduct a CO performance test on the 1332 CRU H-2 (CU-009) heater on an annual basis in accordance with 40 CFR 63.7515.

(4) The Permittee shall submit a stack test protocol to Air Management Services (AMS) at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing. If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, the Permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates.

(5) Within 60 days of achieving max production rate, but no later than 180 days after re-starting the 1332 CRU H-2 (CU-009) heater, PES shall conduct performance tests to demonstrate compliance with the NOx emission limit specified in Condition D.3.(a)(4). The NOx and CO stack tests must be conducted simultaneously. The stack test protocol shall be submitted to AMS for approval at least 30 days before the test date and the test results shall be submitted within 60 days after the test. [AMS IP16000142, 10/17/16]

(6) For 870 Heaters 1 and 2 (CU-137 an CU-138), the Permittee shall conduct a stack test for CO every five (5) years or upon request from AMS. [AMS Plan Approval 15271, 4/25/2017]

(7) For all heaters, (except for CU-005, CU-006, CU-007, CU-012, CU-115, and CU-123) PES shall conduct a stack test in accordance with Chapter 139, Subchapter A every five (5) calendar years to demonstrate ongoing compliance with RACT II NOx emission limitations. [25 Pa. 129.100(a)(4)]

(8) For Unit 870 H-3 Heater (CU-140), within 60 days of achieving maximum capacity, but no longer than 180 days after start-up, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emission limits from Condition D.3.(a)(21). The NOx and CO tests must be conducted simultaneously [AMS Plan Approval 15271, 4/25/2017].

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall utilize an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device. [40 CFR 60.105(a)(4)]

(i) The span value for this instrument is 425 mg/dscm H_2S. 40 CFR

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.

(iii) The performance evaluations for the H_2S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations.

(iv) H2S shall be monitored at following locations:

H2S CEMs location	**SourceID**	**Source Name**
GP Fuel Gas Mix Drum (V-10001)	CU-004	1232-B104
	CU-005	1332-H1
	CU-006	1332-H602
	CU-007	1332-H601
	CU-009	1332-H2[a]
	CU-010	1332-H401
	CU-011	1332-H400
	CU-012	1332-H3
	CU-013	137-F1
	CU-014	137-F2
	CU-015	137-F3
	CU-016	231 B-101
	CU-017	433 H-1
	CU-018	3BH-37
	CU-020	3BH-39
	CU-021	3BH-40
PB Fuel gas Mix Drum (1V148)	CU-101	210 H-101
	CU102	210-H-201
	CU-103	210-13H1
	CU-109	860-2H2
	CU-110	860-2H3
	CU-111	860-2H4
	CU-112	860-2H5
	CU-114	860 2H-7
	CU-115	860 2H-8
	CU-118	864 PH-1
	CU-123	864-PH7
	CU-124	864-PH11
	CU-125	864-PH12
	CU-126	865-11H1
	CU-127	865-11H2
	CU-128	866-12H1
	CU-137	870 H-1
	CU-138	870 H-2

H2S CEMs location	SourceID	Source Name
	CU-139	859 1H-1
H2S CEM at 868 H-101 Heater	CU-129	868 8H-101
H2S CEM at Unit 870 Heaters	CU-137	870 H-1
	CU-138	870 H-2
	CU-140	870 H-3

a – Allow H2S monitoring of the fuel gas supplied to the 1332 H2 Heater at the Girard Point Mix Drum (V-10001) in lieu of the original H2S CEM installed at the 1332 H-2 Heater under Plan Approval No. 05214. [AMS Plan Approval No. 16013 Condition 11, 7/11/17]

b – [AMS Plan Approval No. 15253, 9/22/16

(2) The Permittee shall monitor the refinery fuel gas heating value and consumption daily, when the heater is in operation

(3) The Permittee shall install a parametric emissions monitoring system (PEMS) on the 868 8H 101 heater (CU-129) for Carbon Monoxide. The chosen parameters and software CEM shall accurately predict the emissions. Accuracy of the system shall be demonstrated during a stack test. PES and AMS have agreed to a system by which oxygen is monitored and maintained at 0.5% or greater to achieve the following Carbon Monoxide emission restriction. The parameters and predicted emissions shall be monitored and recorded continuously to ensure compliance with the Carbon Monoxide emission limitation of 400ppmdv at 3% oxygen. [AMS Installation Permit. 03054 dated July 29, 2003]

(4) The Permittee shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis, 0 percent excess air) of NO_X emissions into the atmosphere, on the exit stack after the 1332 H-400/401 heaters (CU-010 & 011) SCR system. The monitor must include an O_2 monitor for correcting the data for excess air. The NOx and O2 CEMS must comply with PA CSMM Revision 7 and 25 PA Code Chapter 139. [AMS Plan Approval 09040, dated 2/1/10].

(5) For 1332 H-400/401 heaters (CU-010 & 011)

(i) The Permittee shall monitor for NOx, PM, NH3 emissions from the heaters. [AMS Plan Approval 09040, dated 2/1/10].

(ii) The Permittee shall daily monitor the fuel type and fuel usage of the heaters to ensure the capacity limits are not exceeded. [AMS Plan Approval 09040, dated 2/1/10].

(iii) The Permittee shall monitor and record ammonia injection of the heaters SCR system on an hourly basis to ensure compliance. [AMS Plan Approval 09040, dated 2/1/10].

(iv) The Permittee shall continuously monitor flue gas temperature at the inlet of the SCR to ensure good operating practice. [AMS Plan Approval 09040, dated 2/1/10].

(6) The Permittee shall monitor NOx concentration of Unit 231 B 101 (CU-016) process heater using a portable NOx analyzer semi-annually [AMS Plan Approval 04140 dated 9/14/04, AMS Plan Approval 06069 dated 6/13/06]

(7) The Permittee shall monitor all fuel input and heating values to heaters to assure compliance with Section D.3(b)(2) on a daily basis to ensure capacity limits are not exceeded or install fuel limiting devices on the heaters to keep capacities below the allowable limits. [Case-by-case RACT, 25 Pa Code §§129.91-95]

(8) The fuel type and fuel usage for each process heater. [SO2 Operating Permit No. SO2-95-039]

(9) For heaters CU-009, CU-012, CU-118, CU-123, CU-124, CU-125, and CU-140, the permittee shall monitor and record NOx and CO emissions calculated monthly to demonstrate compliance with the 12 month rolling period emission limits for NOx and CO. Compliance determination shall be based on AMS-approved stack tests. [AMS Plan Approval 15253, 9/22/16]

(10) Heaters CU-010, CU-011, CU-013, CU-014, CU-017, and CU-102 CEMS shall use an AMS-approved Continuous Emissions Monitoring System (CEMS) to comply with NOx emissions limits and must meet the requirements of 25 Pa Code Chapter 139, the Pennsylvania Continuous Source Monitoring Manual (Revision 7), and 25 Pa Code §129.100(a)(1) [AMS Permit 12195, 2/19/14, AMS RACT Plan Approval, 2/9/16, and AMS Permit 16000264, 12/30/16]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 129.91 – 129.94, 129.100(d), 135.21, 135.5 & 139, AMS RACT Plan Approval, dated 2/9/2016, AMS RACT II Plan Approval No. 16000264, dated 12/30/2016]

The Permittee shall keep the following records:

(1) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5C]

(2) For combustion units required to perform an annual adjustment or tune-up, the Permittee of the adjusted equipment shall record each adjustment procedure in a permanently bound log book or other method approved by the AMS. This log shall contain, at a minimum, the following information: [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5; 25 PA Code §129.93(b)(3)(I)-(v)]

(i) The date of the tuning procedure.

(ii) The name of the service company and technicians.

(iii) The final operating rate or load.

(iv) The final CO and NOx emission rates.

(v) The final excess oxygen rate.

(3) Records of periods of excess emissions shall be determined semiannually for all rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system exceeds 230 mg/dscm (0.10 gr/dscf). [40 CFR 60.105(e)(3)(ii)]

(4) The Permitee shall keep records of the following for each heater:

(i) Continuous Hydrogen Sulfide monitoring system records

(ii) Daily refinery gas consumptions, heating value, and sulfur content

(A) Heating value in MMBTU/hr shall be recorded hourly, calulated on a 24-hour (calendar day) average.

(iii) Stack test results

(iv) Continuous PEMS records for Carbon Monoxide for the 868 8H101 (CU1-129) heater.

(v) Maintenance records

(5) For 1332 H-400/401 heaters (CU-010 & 011)

(i) The Permittee shall keep records for NOx, PM, NH3 emissions from the heaters. [AMS Plan Approval 09040, dated 2/1/10].

(A) NOx emissions shall be determined daily based on CEM data. The NOx emission shall be converted to lbs/MMBTU at 0% O_2 using the equation below to ensure compliance.

Lb/MMBTU = (ppmdv)*(1.194x10^{-7})*(F-factor)*(20.9 / (20.9 - % O_2))
where the F factor = scf flue gas per MMBTU calculated daily from daily fuel gas samples.

(B) NH3 emissions shall be determined based on AMS approved stack data and the PM emissions shall be determined based on AP-42 emission factor or other AMS-approved emission factor.

(ii) The Permittee shall daily record the fuel type and fuel usage of the heater to ensure the capacity limits are not exceeded. [AMS Plan Approval 09040, dated 2/1/10].

(iii) The Permittee shall record ammonia injection of heater SCR system on an hourly basis to ensure compliance. [AMS Plan Approval 09040, dated 2/1/10].

(iv) The Permittee shall continuously record flue gas temperature at the inlet of the SCR to ensure good operating practice.. [AMS Plan Approval 09040, dated 2/1/10].

(6) The Permittee shall record the following for Unit 231 B 101 (CU-016): [AMS Plan Approval 04140 dated 9/13/04, AMS Plan Approval 06069 dated 6/13/08]

(i) SO2 emission shall be calculated using fuel sulfur content

(ii) PM, NOx, and CO shall be calculated using AP-42 emission factors or other AMS approved emission factors

(A) If at any time AMS has cause to believe that air containment emission is in excess of the limits specified, the Permittee shall be required to conduct whatever tests deemed necessary by AMS to determine the actual emission rate.

(7) Maintain on-site and submit, if requested by the Administrator, an annual report containing the following information to demonstrate compliance with 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)(10)(vi)]

(iv) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the process heater;

(v) A description of any corrective actions taken as a part of the tune-up; and

(vi) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(8) PES shall maintain a filecontaining all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements of 25 PA Code §129.91 – §129.94 [AMS RACT Plan Approval, dated 2/9/2016]

(i) The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91 - §129.94 are met.

(ii) Records shall be retained for at least two years and shall be made available to the Department on request.

(9) PES shall keep records demonstrating compliance with the requirements of AMS Permit IP16-000264 as per 25 Pa Code §129.100(d).

(f) Reporting Requirements

(1) The Permittee shall submit CEM and production reports to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

(2) For 868 8H-101 (CU-129), written quarterly reports of excess emissions shall include the following information:

(i) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period. [40 CFR 60.7(c)(1)]

(ii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted. [40 CFR 60.7(c)(2)]

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. [40 CFR 60.7(c)(3)]

(iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report. [40 CFR 60.7(c)(4)]

(v) The summary report form shall contain the information and be in the format shown in Figure 1 below unless otherwise specified by the AMS. One summary report form shall be submitted for each pollutant monitored at each affected facility. [40 CFR 60.7(d)]

(A) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form

shall be submitted and the excess emission report need not be submitted unless requested by the AMS. [40 CFR 60.7(d)(1)]

(B) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report shall both be submitted. [40 CFR 60.7(d)(2)]

FIGURE 1—SUMMARY REPORT— GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

Pollutant (Circle One—SO_2/NOx/ TRS/H_2S/CO/Opacity)
Reporting period dates:
From to:
Company:
Emission Limitation:
Address:
Monitor Manufacturer and Model No.:
Date of Latest CMS Certification or Audit:
Process Unit(s) Description:
Total source operating time in reporting period[1]:

Emission data summary[1]	CMS performance summary[1]
1.Duration of excess emissions in reporting period due to:	1. CMS downtime in reporting period due to:
a. Startup/shutdown	a. Monitor equipment malfunctions
b. Control equipment problems	b. Non-Monitor equipment malfunctions
c. Process problems	c. Quality assurance calibration
d. Other known causes	d. Other known causes
e. Unknown causes	e. Unknown causes
2. Total duration of excess emission	2. Total CMS Downtime
3. Total duration of excess emissions X (100) [Total source operating time] %[2]	3. [Total CMS Downtime] X (100) [Total source operating time] %[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

(C) On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name

Signature

Title

Date

(vi) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the Region III Office, and the AMS [40 CFR 60.4(a)(b)]:

(vii) The Permittee shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 60.107(f)]

(3) The Permittee shall report excess emission from the process heaters defined as follows: [40 CFR 60.105(e), AMS Plan Approval 09040, dated 2/1/10]

(i) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system 230 mg/dscm (0.10 gr/dscf).

(4) For each process heater, the Permittee shall submit the following:

(i) Submit all notifications required by 40 CFR 63.7545;

(ii) Submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD;

(iii) Submit immediate startup, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

(iv) Submit a signed statement in the Notification of Compliance Status report that indicates that the Permittee conducted a tune-up of the unit. [40 CFR 63.7530(d)]

(v) The Notification of Compliance Status shall include a signed certification that the energy assessment was completed according to 40 CFR 63 Subpart DDDDD Table and is an accurate depiction of your facility at the time of the assessment. [40 CFR 63.7530(e)]

4. Group 03 – Flare

Girard Point equipment numbered P-117, P-118, and P-119. Point Breeze equipment numbered P-642, P-643, and CD-104. P-646 (two (2) Sulfur Plant emergency flares) are to be removed according to IP19-000260 & IP18-000263, but will remain in operation until at least 9/26/2019.

(a) Emission Limitations

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

(1) For each flare, emissions of sulfur oxides shall not exceed 0.05 percent by volume. [AMR III, Section II.B]

(2) Hydrogen Sulfide (H_2S) content of the fuel gas burned in each flare shall not exceed 230 mg/dscm (0.1 grains per dry standard cubic foot). [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1), AMS Plan Approval 15271

dated 4/25/17, AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The combustion of gases generated by the Startup, Shutdown, or Malfunction of the refinery process unit or releases to flare as a result of relief valve leakage or other emergency malfunction are exempt from the above requirement.

Point Breeze LPG Flare (CD-104)

(3) The volatile organic compound emission from the operation of the LPG shall not exceed 24 tons per 12-month rolling period. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 2). Potential VOC emissions are less than 24 tons per year and are mostly fugitives. Compliance with this requirement is assured by the LDAR program.]

(b) Work Practice Standards

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

(1) The flares shall be designed for and operated with no visible emissions as determined by the methods specified in Section D.4(c)(2)-(5), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]

(2) The flares shall be operated and maintained in conformance with manufacturer's specifications and good engineering and air pollution control practices. [40 CFR 60.18(d), 40 CFR 63.11(b)(1), AMS Plan Approval 15271 dated 4/25/17]

(3) The flares shall be operated at all times when gases may be vented to them. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

(4) The flares shall be operated with a pilot flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]

(5) Flares shall be operated with a pilot flame present at all times, as determined by the methods specified in paragraphs D.4(c)(2)-(5). [40 CFR 60.18(c)(2)]

(6) The Permittee has the choice of adhering to either the heat content specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or adhering to the requirements in 40 CFR 60.18(c)(3)(i). [40 CFR 60.18(c)(3)]

(7) Steam-assisted flares shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]

(8) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided below: [40 CFR 60.18(c)(4)]

(i) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c)(4)(ii)]

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c)(4)(iii)]

(9) The Permittee shall investigate the cause of Hydrocarbon Flaring, Acid Gas Flaring and Tail Gas incidents, take reasonable steps to correct and minimize the conditions that have caused or contributed to Hydorcarbon Flaring, Acid Gas Flaring and Tail Gas incidents [Consent Decree Order 05-CV-2866]

(10) The permittee shall not burn any fuel gas containing H_2S in excess of 162 ppmv in the flare. The H_2S content in the fuel gas shall be determined hourly on a 3-hour rolling average basis. The combustion in the flare of process upset gases or fuel gas that is released to the flare as the result of relief valve leakage or other emergency malfunctions is exempt from the above limit. [40 CFR 60.103a(h) and 40 CFR 60.103a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(11) On or before January 30, 2019, the owner or operator of a flare used as a control device for an emission point subject to §63.670 shall meet the applicable requirements for flares as specified in paragraphs (a) through (q) of 40 CFR §63.670 and the applicable requirements in §63.671. The owner or operator may elect to comply with the requirements of paragraph §63.670(r) in lieu of the requirements in paragraphs (d) through (i), as applicable. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(12) Pilot flame presence: The owner or operator shall operate each flare with a pilot flame present at all times when regulated material is routed to the flare. Each 15-minute block during which there is at least one minute where no pilot flame is present when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The owner or operator shall monitor for the presence of a pilot flame as specified in paragraph (g) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(13) Visible emissions: The owner or operator shall specify the smokeless design capacity of each flare and operate with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare. The owner or operator shall monitor for visible emissions from the flare as specified in paragraph (h) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(14) Flare tip velocity: For each flare, the owner or operator shall comply with either paragraph (d)(1) or (2) of §63.670, provided the appropriate monitoring systems are in-place, whenever regulated material is routed to the flare for at least 15-minutes and the flare vent gas flow rate is less than the smokeless design capacity of the flare. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as provided in paragraph (d)(2) of §63.670, the actual flare tip velocity (Vtip) must be less than 60 feet per second. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670.

(ii) Vtip must be less than 400 feet per second and also less than the maximum allowed flare tip velocity (Vmax) as calculated according to the following equation. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670 and monitor gas composition and determine NHVvg using the procedures specified in paragraphs (j) and (l) of §63.670.

$$Log_{10}(V_{max}) = \frac{NHV_{vg} + 1{,}212}{850}$$

Where:

V_{max} = Maximum allowed flare tip velocity, ft/sec.

NHV_{vg} = Net heating value of flare vent gas, as determined by paragraph (l)(4) of §63.670 , Btu/scf.

1,212 = Constant.

850 = Constant.

(15) Combustion zone operating limits: For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVcz as specified in paragraph (m) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(16) Dilution operating limits for flares with perimeter assist air. For each flare actively receiving perimeter assist air, the owner or operator shall operate the flare to maintain the net heating value dilution parameter (NHVdil) at or above 22 British thermal units per square foot (Btu/ft 2) determined on a 15-minute block period basis when regulated material is being routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVdil as specified in paragraph (n) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(17) Calculation methods for cumulative flow rates and determining compliance with Vtip operating limits. The owner or operator shall determine Vtip on a 15-minute block average basis according to the following requirements. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall use design and engineering principles to determine the unobstructed cross sectional area of the flare tip. The unobstructed cross sectional area of the flare tip is the total tip area that vent gas can pass through. This area does not include any stability tabs, stability rings, and upper steam or air tubes because flare vent gas does not exit through them.

(ii) The owner or operator shall determine the cumulative volumetric flow of flare vent gas for each 15-minute block average period using the data from the continuous flow monitoring system required in paragraph (i) of §63.670 according to the following requirements, as applicable. If desired, the cumulative flow rate for a 15-minute block period only needs to include flow during those periods when regulated material is sent to the flare, but owners or operators may elect to calculate the cumulative flow rates across the entire 15-minute block period for any 15-minute block period where there is regulated material flow to the flare.

(A) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block average flow volumes.

(B) If continuous pressure/temperature monitoring system(s) and engineering calculations are used as allowed under paragraph (i)(4) of §63.670 , the owner or operator shall, at a minimum, determine the 15-minute block average temperature and pressure from the monitoring system and use those values to perform the engineering calculations to determine the cumulative flow over the 15-minute block average period. Alternatively, the owner or operator may divide the 15-minute block average period into equal duration subperiods (e.g., three 5-minute periods) and determine the average temperature and pressure for each subperiod, perform engineering calculations to determine the flow for each subperiod, then add the volumetric flows for the subperiods to determine the cumulative volumetric flow of vent gas for the 15-minute block average period.

(iii) The 15-minute block average Vtip shall be calculated using the following equation.

$$V_{tip} = \frac{Q_{cum}}{Area \times 900}$$

Where:

V_{tip} =	Flare tip velocity, feet per second.
Q_{cum} =	Cumulative volumetric flow over 15-minute block average period, actual cubic feet.
Area =	Unobstructed area of the flare tip, square feet.
900 =	Conversion factor, seconds per 15-minute block average.

(iv) If the owner or operator chooses to comply with paragraph (d)(2) of §63.670 , the owner or operator shall also determine the net heating value of the flare vent gas following the requirements in paragraphs (j) and (l) of §63.670 and calculate Vmax using the equation in paragraph (d)(2) of §63.670 in order to compare Vtip to Vmax on a 15-minute block average basis.

(18) Calculation methods for determining flare vent gas net heating value. The owner or operator shall determine the net heating value of the flare vent gas (NHVvg) based on the composition monitoring data on a 15-minute block average basis according to the following requirements. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) If compositional analysis data are collected as provided in paragraph (j)(1) or (2) of §63.670 , the owner or operator shall determine NHVvg of a specific sample by using the following equation.

$$NHV_{vg} = \sum_{i=1}^{n} x_i NHV_i$$

Where:

NHV_{vg} = Net heating value of flare vent gas, Btu/scf.

i = Individual component in flare vent gas.

n = Number of components in flare vent gas.

x_i = Concentration of component i in flare vent gas, volume fraction.

NHV_i = Net heating value of component i according to table 12 of this subpart, Btu/scf. If the component is not specified in table 12 of this subpart, the heats of combustion may be determined using any published values where the net enthalpy per mole of offgas is based on combustion at 25 °C and 1 atmosphere (or constant pressure) with offgas water in the gaseous state, but the standard temperature for determining the volume corresponding to one mole of vent gas is 20 °C.

(ii) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 but a hydrogen concentration monitor is not used, the owner or operator shall use the direct output of the monitoring system(s) (in Btu/scf) to determine the NHVvg for the sample.

(iii) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 and hydrogen concentration monitoring data are collected as provided in paragraph (j)(4) of §63.670 , the owner or operator shall use the following equation to determine NHVvg for each sample measured via the net heating value monitoring system.

$$NHV_{vg} = NHV_{measured}\ 938xH2$$

Where:

NHVvg =	Net heating value of flare vent gas, Btu/scf.
NHVmeasured =	Net heating value of flare vent gas stream as measured by the continuous net heating value monitoring system, Btu/scf.
xH2 =	Concentration of hydrogen in flare vent gas at the time the sample was input into the net heating value monitoring system, volume fraction.
938 =	Net correction for the measured heating value of hydrogen (1,212 − 274), Btu/scf.

(iv) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block averages.

(v) When a continuous monitoring system is used as provided in paragraph (j)(1) or (3) of §63.670 and, if applicable, paragraph (j)(4) of §63.670, the owner or operator may elect to determine the 15-minute block average NHVvg using either the calculation methods in paragraph (l)(5)(i) of §63.670 or the calculation methods in paragraph (l)(5)(ii) of §63.670. The owner or operator may choose to comply using the calculation methods in paragraph (l)(5)(i) of §63.670 for some flares at the petroleum refinery and comply using the calculation methods (l)(5)(ii) of §63.670 for other flares. However, for each flare, the owner or operator must elect one calculation method that will apply at all times, and use that method for all continuously monitored flare vent streams associated with that flare. If the owner or operator intends to change the calculation method that applies to a flare, the owner or operator must notify AMS and EPA 30 days in advance of such a change.

(A) Feed-forward calculation method. When calculating NHVvg for a specific 15-minute block:

(1) Use the results from the first sample collected during an event, (for periodic flare vent gas flow events) for the first 15-minute block associated with that event.

(2) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the second 15-minute block associated with that event.

(3) For all other cases, use the results that are available from the most recent sample prior to the 15-minute block period for that 15-minute block period for all flare vent gas steams. For the

purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:45 a.m. to 1:00 a.m.

(B) Direct calculation method. When calculating NHVvg for a specific 15-minute block:

(1) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the first 15-minute block associated with that event.

(2) For all other cases, use the arithmetic average of all NHVvg measurement data results that become available during a 15-minute block to calculate the 15-minute block average for that period. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:30 a.m. to 12:45 a.m.

(vi) When grab samples are used to determine flare vent gas composition:

(A) Use the analytical results from the first grab sample collected for an event for all 15-minute periods from the start of the event through the 15-minute block prior to the 15-minute block in which a subsequent grab sample is collected.

(B) Use the results from subsequent grab sampling events for all 15 minute periods starting with the 15-minute block in which the sample was collected and ending with the 15-minute block prior to the 15-minute block in which the next grab sample is collected. For the purpose of this requirement, use the time the sample was collected rather than the time the analytical results become available.

(vii) If the owner or operator monitors separate gas streams that combine to comprise the total flare vent gas flow, the 15-minute block average net heating value shall be determined separately for each measurement location according to the methods in paragraphs (l)(1) through (6) of §63.670 and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

(19) Calculation methods for determining combustion zone net heating value. The owner or operator shall determine the net heating value of the combustion

zone gas (NHVcz) as specified in paragraph (m)(1) or (2) of §63.670, as applicable. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as specified in paragraph (m)(2) of §63.670 , determine the 15-minute block average NHVcz based on the 15-minute block average vent gas and assist gas flow rates using the following equation. For periods when there is no assist steam flow or premix assist air flow, NHVcz = NHVvg.

$$NHV_{cz} = \frac{Q_{vg} \times NHV_{vg}}{(Q_{vg} + Q_s + Q_{a,premix})}$$

Where:

NHV_{cz} =	Net heating value of combustion zone gas, Btu/scf.
NHV_{vg} =	Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Q_{vg} =	Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.
Q_s =	Cumulative volumetric flow of total steam during the 15-minute block period, scf.
$Q_{a,premix}$ =	Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

(ii) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVcz using the following equation.

$$NHV_{cz} = \frac{(Q_{vg} - Q_{NG2} + Q_{NG1}) \times NHV_{vg} + (Q_{NG2} - Q_{NG1}) \times NHV_{NG}}{(Q_{vg} + Q_s + Q_{a,premix})}$$

Where:

NHV_{cz} =	Net heating value of combustion zone gas, Btu/scf.
NHV_{vg} =	Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Q_{vg} =	Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Q_{NG2} = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.

Q_{NG1} = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1=QNG2.

NHV_{NG} = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Q_s = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

$Q_{a,premix}$ = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

(20) Calculation methods for determining the net heating value dilution parameter. The owner or operator shall determine the net heating value dilution parameter (NHVdil) as specified in paragraph (n)(1) or (2) of §63.670, as applicable. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as specified in paragraph (n)(2) of §63.670 , determine the 15-minute block average NHVdil based on the 15-minute block average vent gas and perimeter assist air flow rates using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{Q_{vg} \times Diam \times NHV_{vg}}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHV_{dil} = Net heating value dilution parameter, Btu/ft 2.

NHV_{vg} = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Q_{vg} = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as $Diam = 2 \times \sqrt{\frac{Area}{\pi}}$.

Q_s = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

$Q_{a,premix}$ = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

$Q_{a,perimeter}$ = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

(ii) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVdil using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{[(Q_{vg} - Q_{NG2} + Q_{NG1}) \times NHV_{vg} + (Q_{NG2} - Q_{NG1}) \times NHV_{NG}] \times Diam}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHV_{dil} = Net heating value dilution parameter, Btu/ft 2.

NHV_{vg} = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Q_{vg} = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Q_{NG2} = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.

Q_{NG1} = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1 =QNG2.

NHV_{NG} = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as $Diam = 2 \times \sqrt{\frac{Area}{\pi}}$.

Q_s = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

$Q_{a,premix}$ = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

$Q_{a,perimeter}$ = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

(21) Emergency flaring provisions. The owner or operator of a flare that has the potential to operate above its smokeless capacity under any circumstance shall comply with the provisions in paragraphs (o)(1) through (8) of §63.670. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Develop a flare management plan to minimize flaring during periods of startup, shutdown, or emergency releases. The flare management plan must include the information described in paragraphs (o)(1)(i) through (vii) of §63.670 .

(A) A listing of all refinery process units, ancillary equipment, and fuel gas systems connected to the flare for each affected flare.

(B) An assessment of whether discharges to affected flares from these process units, ancillary equipment and fuel gas systems can be minimized or prevented during periods of startup, shutdown, or emergency releases. The flare minimization assessment must (at a minimum) consider the items in paragraphs (o)(1)(ii)(A) through (C) of §63.670 . The assessment must provide clear rationale in terms of costs (capital and annual operating), natural gas offset credits (if applicable), technical feasibility, secondary environmental impacts and safety considerations for the selected minimization alternative(s) or a statement, with justifications, that flow reduction could not be achieved. Based upon the assessment, each owner or operator of an affected flare shall identify the minimization alternatives that it has implemented by the due date of the flare management plan and shall include a schedule for the prompt implementation of any selected measures that cannot reasonably be completed as of that date.

(1) Modification in startup and shutdown procedures to reduce the quantity of process gas discharge to the flare.

(2) Implementation of prevention measures listed for pressure relief devices in § 63.648(j)(5) for each pressure relief device that can discharge to the flare.

(3) Installation of a flare gas recovery system or, for facilities that are fuel gas rich, a flare gas recovery system and a co-generation unit or combined heat and power unit.

(C) A description of each affected flare containing the information in paragraphs (o)(1)(iii)(A) through (G) of §63.670.

(1) A general description of the flare, including whether it is a ground flare or elevated (including height), the type of assist system (e.g., air, steam, pressure, non-assisted), whether the flare is used on a routine basis or if it is only used during periods of startup, shutdown or emergency release, and whether the flare is equipped with a flare gas recovery system.

(2) The smokeless capacity of the flare based on design conditions. Note: A single value must be provided for the smokeless capacity of the flare.

(3) The maximum vent gas flow rate (hydraulic load capacity).

(4) The maximum supplemental gas flow rate.

(5) For flares that receive assist steam, the minimum total steam rate and the maximum total steam rate.

(6) For flares that receive assist air, an indication of whether the fan/blower is single speed, multi-fixed speed (e.g., high, medium, and low speeds), or variable speeds. For fans/blowers with fixed speeds, provide the estimated assist air flow rate at each fixed speed. For variable speeds, provide the design fan curve (e.g., air flow rate as a function of power input).

(7) Simple process flow diagram showing the locations of the flare following components of the flare: Flare tip (date installed, manufacturer, nominal and effective tip diameter, tip drawing); knockout or surge drum(s) or pot(s) (including dimensions and design capacities); flare header(s) and subheader(s); assist system; and ignition system.

(D) Description and simple process flow diagram showing all gas lines (including flare waste gas, purge or sweep gas (as applicable), supplemental gas) that are associated with the flare. For purge, sweep, supplemental gas, identify the type of gas used. Designate which lines are exempt from composition or net heating value monitoring and why (e.g., natural gas, gas streams that have been demonstrated to have consistent composition, pilot gas). Designate which lines are monitored and identify on the process flow diagram the location and type of each monitor. Designate the pressure relief devices that are vented to the flare.

(E) For each flow rate, gas composition, net heating value or hydrogen concentration monitor identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of the manufacturer's specifications, including, but not limited to, make, model, type, range, precision, accuracy, calibration, maintenance and quality assurance procedures.

(F) For each pressure relief device vented to the flare identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of each pressure release device, including type of relief device (rupture disc, valve type) diameter of the relief device opening, set pressure of the relief device and listing of the prevention measures implemented. This information may be maintained in an electronic database on-site and does not need to be submitted as part of the flare management plan unless requested to do so by AMS and EPA.

(G) Procedures to minimize or eliminate discharges to the flare during the planned startup and shutdown of the refinery process units and

ancillary equipment that are connected to the affected flare, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(ii) Each owner or operator required to develop and implement a written flare management plan as described in paragraph (o)(1) of §63.670 must submit the plan to AMS and EPA as described in paragraphs (o)(2)(i) through (iii) of §63.670 .

(A) The owner or operator must develop and implement the flare management plan no later than January 30, 2019 or at startup for a new flare that commenced construction on or after February 1, 2016.

(B) The owner or operator must comply with the plan as submitted by the date specified in paragraph (o)(2)(i) of §63.670 . The plan should be updated periodically to account for changes in the operation of the flare, such as new connections to the flare or the installation of a flare gas recovery system, but the plan need be re-submitted to AMS and EPA only if the owner or operator alters the design smokeless capacity of the flare. The owner or operator must comply with the updated plan as submitted.

(C) All versions of the plan submitted to AMS and EPA shall also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to refineryRTR@epa.gov.

(iii) The owner or operator of a flare subject to this subpart shall conduct a root cause analysis and a corrective action analysis for each flow event that contains regulated material and that meets either the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(A) The vent gas flow rate exceeds the smokeless capacity of the flare and visible emissions are present from the flare for more than 5 minutes during any 2 consecutive hours during the release event.

(B) The vent gas flow rate exceeds the smokeless capacity of the flare and the 15-minute block average flare tip velocity exceeds the maximum flare tip velocity determined using the methods in paragraph (d)(2) of §63.670 .

(iv) A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a flare flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (o)(4)(i) through (v) of §63.670 .

(A) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event that meets both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 .

(B) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event regardless of the number of 15-minute block periods in which the flare tip velocity was exceeded or the number of 2 hour periods that contain more the 5 minutes of visible emissions.

(C) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares that are operated in series (i.e., cascaded flare systems) to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(D) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670, regardless of the configuration of the flares, if the root cause is reasonably expected to be a force majeure event, as defined in this subpart.

(E) Except as provided in paragraphs (o)(4)(iii) and (iv) of §63.670 , if more than one flare has a flow event that meets the criteria in paragraph (o)(3)(i) or (ii) of §63.670 during the same time period, an initial root cause analysis shall be conducted separately for each flare that has a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . If the initial root cause analysis indicates that the flow events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(v) Each owner or operator of a flare required to conduct a root cause analysis and corrective action analysis as specified in paragraphs (o)(3) and (4) of §63.670 shall implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (o)(5)(i) through (iii) of §63.670 .

(A) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that no corrective action should be implemented, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the event.

(B) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(C) No later than 45 days following the event for which a root cause and corrective action analyses were required, the owner or operator shall

record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(vi) The owner or operator shall determine the total number of events for which a root cause and corrective action analyses was required during the calendar year for each affected flare separately for events meeting the criteria in paragraph (o)(3)(i) of §63.670 and those meeting the criteria in paragraph (o)(3)(ii) of §63.670 . For the purpose of this requirement, a single root cause analysis conducted for an event that met both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 would be counted as an event under each of the separate criteria counts for that flare. Additionally, if a single root cause analysis was conducted for an event that caused multiple flares to meet the criteria in paragraph (o)(3)(i) or (ii) of §63.670 , that event would count as an event for each of the flares for each criteria in paragraph (o)(3) of §63.670 that was met during that event. The owner or operator shall also determine the total number of events for which a root cause and correct action analyses was required and the analyses concluded that the root cause was a force majeure event, as defined in this subpart.

(vii) The following events would be a violation of this emergency flaring work practice standard.

(A) Any flow event for which a root cause analysis was required and the root cause was determined to be operator error or poor maintenance.

(B) Two visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(C) Two flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(D) Three visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for any reason.

(E) Three flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for any reason.

Point Breeze South Yard South Flare (P-643)

(22) The flare shall be operated with a minimum of a 98% Combustion Efficiency at all times when waste gases are vented to it. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e), AMS Plan Approval 15271 dated 4/25/17]

(23) PES shall operate and maintain a flare gas recovery system to prevent continuous or routine combustion in the flare. [Consent Decree, Use of the flare gas recovery system obviates the need to continuously monitor emissions as otherwise required by 40 CFR 60.105(a)(4), AMS Plan Approval 15271 dated 4/25/17]

(i) Periodic maintenance shall be conducted for flare gas recovery systems.

(ii) All reasonable measures shall be taken to minimize emissions during the periodic maintenance on a flare gas recovery system is being performed.

(iii) The flare gas recovery system may be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes.

(24) The Permittee shall develop and implement a written flare management plan no later than the November 11, 2015 in accordance with 40 CFR 60.103a [AMS Plan Approval 15271 dated 4/25/17].

(i) The Permittee shall conduct a root cause analysis and a corrective action analysis for each of the following [Consent Decree and 40 CFR 103a(c)]

(A) Any time the SO_2 emission exceeds 227 kilograms (kg) (500 lbs) in any 24-hour period; or

(B) Any discharge to the flare in excess of 14,160 standard cubic meter (m3) (500,000 standard cubic feet (scf)) above the baseline, determined in 40 CFR 60.103a(a)(4).

(25) The Permittee shall complete a root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified Condition D.4(b)(24)(i) above. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are as follows: [40 CFR 60.103a(d)]

(i) If a single continuous discharge meets any of the conditions specified in Condition D.4(b)(24)(i) for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.

(ii) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions in Condition D.4(b)(24)(i), a single root cause analysis and corrective action analysis may be conducted.

(iii) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in 40 CFR 60.103a(a)(5) were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in §60.108a(c)(6) and reported as described in §60.108a(d)(5).

(iv) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in 40 CFR 60.103a(c)(1)(i)-(iii) in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted.

(v) Except as provided above in Condition D.4(b)(25), if discharges occur that meet any of the conditions specified in Condition D.4(b)(24)(i) above for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(26) The Permittee shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to Condition D.4(b)(25) above in accordance with the following applicable requirements: [40 CFR 60.103a(e)]

(i) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the Permittee concludes that corrective action should not be conducted, the Permittee shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 CFR §60.108a(c)(6)(ix).

(ii) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(iii) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the Permittee shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 CFR §60.108a(c)(6)(x).

Point Breeze LPG Flare (CD-104)

(27) The permittee shall not burn any fuel gas that contains H2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis in the LPG Flare. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit. [40 CFR §60.103a(h)] [AMS Installation Permit No. IP18-00260 & IP18-000263 Issued September 9, 2018]

(28) All bypass vent streams shall be equipped with flow indicators and recorders. As an alternative, the Permittee may secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4), 40 CFR 63.645(c)]

(c) Testing Requirements

[25 PA Code §139]

(1) Test methods and procedures for SO_2 from combustion sources shall be equivalent to or modified to produce results equivalent to those which would be obtained by employing procedures specified in PADER Source Testing Manual. Details for sampling equipment are contained in either Appendix A of 40 CFR 60 or the PADER Source Testing Manual [25 PA Code §139.13(1)].

(2) Test Method 22 in Appendix A of 40 CFR 60 shall be used to determine the compliance of flares with the visible emission limitations. The observation period is 2 hours and shall be used according to Method 22. [40 CFR 63.11(b)(4), 40 CFR 60.18(f)(1)]

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation [40 CFR 60.18(f)(3)]:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i=Concentration of sample component “i” in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

(5) The maximum permitted velocity, V_{max}, for flares complying with Section D.3(b)(9)(i) shall be determined by the following equation: [40 CFR 60.18(f)(5)]

$$\text{Log10}\ (V_{max}) = (HT + 28.8)/31.7$$

where:

V_{max}=Maximum permitted velocity, M/sec

28.8=Constant

31.7=Constant

H_T=The net heating value as determined in 40 CFR 60.18 (f)(3).

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

The Permittee shall monitor the following:

(1) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2), AMS Plan Approval 15271 dated 4/25/17]

(2) The Permittee shall monitor the fuel type and fuels usage and sulfur content of the fuel burned for each flare pilot on a daily basis. [AMS Plan Approval 15271 dated 4/25/17]

(3) The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO_2 emissions using the same analysis and calculations used in the modeling demonstration. [AMS Plan Approval 15271 dated 4/25/17]

(4) The Permittee shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.18(d)]

(5) The flares 1231,1232, and 433 flares shall operate as a fuel gas combustion device, monitoring the fuel gases put into the flare header.

(6) SO_2 Emission Calculations for the Acid Gas (AG) Flaring [Consent Decree Order 05-CV-2866]

(i) The quantity of SO_2 emissions resulting from AG Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR] [TD] [ConcH_2S] [8.44×10^{-5}].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Acid Gas was first flared.

(ii) The rate of SO_2 emissions from AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

ER = [FR] [ConcH_2S] [0.169].

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

where

ER = Emission Rate in pounds of SO_2 per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour

TD = Total Duration of Flaring Incident in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment.

(7) The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The Permittee shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H_2S.

(ii) The Permittee shall conduct performance evaluations for each H_2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.

(iii) The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(iv) Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned in the flares.

(v) The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H_2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph §§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument

required in paragraph (e)(1) is used to demonstrate compliance with the H_2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).

(8) The Permittee is not required to comply with Condition D.4(d)(9)(i)-(vi) for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the following requirements shall be considered inherently low in sulfur content. [40 CFR §60.107a(3), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Pilot gas for heaters and flares.

(ii) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.

(iii) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.

(iv) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in Condition D.4(d)(11).

(A) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in Condition D.4(d)(11)(iii). [40 CFR §60.107a(b)(3)]

(9) Exemption from H_2S monitoring requirements for low-sulfur fuel gas streams. The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H_2S monitoring requirements in Condition D.4(b)(10) for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs in 40 CFR 60§ 107a (a)(1) and (2) until there are changes in operating conditions or stream composition. [40 CFR §60.107a(b), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(A) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;

(B) A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);

(C) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;

(D) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv H_2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. The owner or operator shall use detector tubes ("length-of-stain tube" type measurement) following the "Gas Processors Association Standard 2377-86 (incorporated by reference - see §60.17), using tubes with a maximum span between 10 and 40 ppmv inclusive when $1 \leq N \leq 10$, where N = number of pump strokes, to test the applicant fuel gas stream for H_2S; and

(E) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H_2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H_2S content in the fuel gas stream going to the loading rack flare).

(ii) The effective date of the exemption is the date of submission of the information required in Condition D.4(d)(11)(i). [40 CFR 60§ 107a (b)(1)]

(iii) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in Conditions D.4(d)(11)(iii)(A), D.4(d)(11)(iii)(B), or D.4(d)(11)(iii)(C). [40 CFR §60.107a (b)(3)(i), (b)(3)(ii), or (b)(3)(iii)]

(A) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H_2S test on a grab sample and record the results as proof that the concentration is still within the range.

(B) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of Condition D.4(d)(11)(i) within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(C) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H_2S monitoring using daily stain sampling to demonstrate compliance using length-of-stain tubes with a maximum span between 200 and 400 ppmv inclusive when 1≤N≤5, where N = number of pump strokes. The owner or operator must begin monitoring according to the requirements in paragraphs §60.107a(a)(1) or (a)(2) as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H_2S concentration limit. The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H_2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

(10) Sulfur monitoring for assessing root cause analysis threshold for affected flares. Except as described in Condition D.4(d)(12)(iv), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii). Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii), the owner or operator of a modified flare must comply with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii) upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii), the owner or operator of a modified flare must comply with the requirements related to either Conditions D.4(d)(12)(i), D.4(d)(12)(ii) or D.4(d)(12)(iii) of no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(e), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Total reduced sulfur monitoring requirements. The owner or operator shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(A) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this

paragraph and paragraph (a)(2) of §60 107a provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to this part. The owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each total reduced sulfur monitor.

(ii) H_2S monitoring requirements. The owner or operator shall install, operate, calibrate, and maintain an instrument or instruments for continuously monitoring and recording the concentration of H_2S in gas discharged to the flare according to the requirements in Condition D.4(d)(12)(ii)(A)-(C) and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in Conditions D.4(d)(12)(ii)(D)-(I).

(A) The owner or operator shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H_2S monitor may be used to comply with the requirements of this paragraph and Condition D.4(d)(9) provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each H_2S monitor according to the requirements in §60.13(c) and Performance Specification 7 of appendix B to this part. The owner or operator shall use EPA Method 11, 15 or 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference - see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not

necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(D) In the first 10 operating days after the date the flare must begin to comply with §60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in Condition D.4(d)(12)(ii)(I).

(E) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of appendix A-5 to part 60, EPA Method 16A of appendix A-6 to part 60, ASTM Method D4468-85 (Reapproved 2006) (incorporated by reference - see §60.17) or ASTM Method D5504-08 (incorporated by reference - see §60.17).

(F) The owner or operator shall develop a 10-day average total sulfur-to-H_2S ratio and 95-percent confidence interval as follows:

(1) Calculate the ratio of the total sulfur concentration to the H_2S concentration for each day during which samples are collected.

(2) Determine the 10-day average total sulfur-to-H_2S ratio as the arithmetic average of the daily ratios calculated in Condition D.4(d)(12)(ii)(F)(1).

(3) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios based on the 10 individual daily ratios using Equation 14 of §60.107a.

$$AR = Ratio_{avg} \pm 2.262 \times SDev$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

$Ratio_{Avg}$ = 10-day average total sulfur-to-H_2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H_2S concentration ratios used to develop the 10-day average total sulfur-to-H_2S concentration ratio, unitless.

(G) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the

total sulfur concentration using the measured total sulfur concentration measured for that day.

(H) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H_2S ratio by the daily average H_2S concentrations obtained using the monitor as required by paragraph Condition D.4(d)(12)(ii)(A) through (C) to estimate total sulfur concentrations.

(I) If the total sulfur-to-H_2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(iii) SO_2 monitoring requirements. The owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of SO_2 from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of 60 §107a, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of 60 §107a, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of 60 §107a, and calculate the total sulfur content (as SO_2) in the fuel gas using Equation 15 of 60 §107a.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG}$$

Where:

TS_{FG}= Total sulfur concentration, as SO_2, in the fuel gas, ppmv.

C_{SO_2} = Concentration of SO_2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

F_d = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHV_{FG} = Higher heating value of the fuel gas, MMBtu/scf.

(iv) Exemptions from sulfur monitoring requirements. Flares identified in Conditions D.4(d)(12)(iv)(A) through (D) are exempt from the requirements in Conditions D.4(d)(12)(i) through (iii). For each such flare, except as provided in Condition D.4(d)(12)(iv)(D), engineering calculations shall be used to calculate the SO_2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(A) Flares that can only receive:

(1) Fuel gas streams that are inherently low in sulfur content as described in Conditions D.4(d)(10)(i) through (iv); and/or

(2) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H_2S monitoring requirements as described in Condition D.4(d)(11).

(B) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(14).

(C) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(14).

(D) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO_2 emissions, regardless of whether or not the monitoring alternative in Condition D.4(d)(14) is selected for the secondary flare.

(11) Flow monitoring for flares. The owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition D.4(d)(13)(i), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.

(A) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.

(B) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.

(C) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.

(D) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.

(E) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

(12) Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(13) Excess emissions. For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions D.4(d)(15)(i) and (ii). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(i) H_2S concentration limits for flares.

(A) Each rolling 3-hour period during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under Condition D.4(d)(9) exceeds 162 ppmv.

(ii) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition D.4(d)(11)(iii)(C), each day during which the daily concentration of H_2S exceeds 162 ppmv.

(14) Pilot flame monitoring. The owner or operator shall continuously monitor the presence of the pilot flame(s) using a device (including, but not limited to, a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of detecting that the pilot flame(s) is present. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(15) Visible emissions monitoring. The owner or operator shall monitor visible emissions while regulated materials are vented to the flare. An initial visible emissions demonstration must be conducted using an observation period of 2 hours using Method 22 at 40 CFR part 60, appendix A-7. Subsequent visible emissions observations must be conducted using either the methods in paragraph (h)(1) of §63.670 or, alternatively, the methods in paragraph (h)(2) of §63.670 . The owner or operator must record and report any instances where visible emissions are observed for more than 5 minutes during any 2 consecutive hours as specified in § 63.655(g)(11)(ii). [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) At least once per day, conduct visible emissions observations using an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If at any time the owner or operator sees visible emissions,

even if the minimum required daily visible emission monitoring has already been performed, the owner or operator shall immediately begin an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If visible emissions are observed for more than one continuous minute during any 5-minute observation period, the observation period using Method 22 at 40 CFR part 60, appendix A-7 must be extended to 2 hours or until 5-minutes of visible emissions are observed.

(ii) Use a video surveillance camera to continuously record (at least one frame every 15 seconds with time and date stamps) images of the flare flame and a reasonable distance above the flare flame at an angle suitable for visual emissions observations. The owner or operator must provide real-time video surveillance camera output to the control room or other continuously manned location where the camera images may be viewed at any time.

(16) Flare vent gas, steam assist and air assist flow rate monitoring. The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare header or headers that feed the flare as well as any supplemental natural gas used. Different flow monitoring methods may be used to measure different gaseous streams that make up the flare vent gas provided that the flow rates of all gas streams that contribute to the flare vent gas are determined. If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare. If pre-mix assist air and perimeter assist are both used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The flow rate monitoring systems must be able to correct for the temperature and pressure of the system and output parameters in standard conditions (i.e., a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere).

(ii) Mass flow monitors may be used for determining volumetric flow rate of flare vent gas provided the molecular weight of the flare vent gas is determined using compositional analysis as specified in paragraph (j) of §63.670 so that the mass flow rate can be converted to volumetric flow at standard conditions using the following equation.

$$Q_{vol} = \frac{Q_{mass} \times 385.3}{MWt}$$

Where:

Qvol = Volumetric flow rate, standard cubic feet per second.
Qmass = Mass flow rate, pounds per second.
385.3 = Conversion factor, standard cubic feet per pound-mole.
MWt = Molecular weight of the gas at the flow monitoring location, pounds per pound-mole.

(iii) Mass flow monitors may be used for determining volumetric flow rate of assist air or assist steam. Use equation in paragraph (i)(2) of §63.670 to convert mass flow rates to volumetric flow rates. Use a molecular weight of 18 pounds per pound-mole for assist steam and use a molecular weight of 29 pounds per pound-mole for assist air.

(iv) Continuous pressure/temperature monitoring system(s) and appropriate engineering calculations may be used in lieu of a continuous volumetric flow monitoring systems provided the molecular weight of the gas is known. For assist steam, use a molecular weight of 18 pounds per pound-mole. For assist air, use a molecular weight of 29 pounds per pound-mole. For flare vent gas, molecular weight must be determined using compositional analysis as specified in paragraph (j) of §63.670.

(17) Flare vent gas composition monitoring. The owner or operator shall determine the concentration of individual components in the flare vent gas using either the methods provided in paragraph (j)(1) or (2) of §63.670, to assess compliance with the operating limits in paragraph (e) of §63.670 and, if applicable, paragraphs (d) and (f) of §63.670 . Alternatively, the owner or operator may elect to directly monitor the net heating value of the flare vent gas following the methods provided in paragraphs (j)(3) of §63.670 and, if desired, may directly measure the hydrogen concentration in the flare vent gas following the methods provided in paragraphs (j)(4) of §63.670 . The owner or operator may elect to use different monitoring methods for different gaseous streams that make up the flare vent gas using different methods provided the composition or net heating value of all gas streams that contribute to the flare vent gas are determined. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring (i.e., at least once every 15-minutes), calculating, and recording the individual component concentrations present in the flare vent gas.

(ii) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, and maintain a grab sampling system capable of collecting an evacuated canister sample for subsequent compositional analysis at least once every eight hours while there is flow of regulated material to the flare. Subsequent compositional analysis of the samples must be performed according to Method 18 of 40 CFR part 60, appendix A-6, ASTM D6420-99 (Reapproved 2010), ASTM D1945-03

(Reapproved 2010), ASTM D1945-14 or ASTM UOP539-12 (all incorporated by reference - see § 63.14).

(iii) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a calorimeter capable of continuously measuring, calculating, and recording NHVvg at standard conditions.

(iv) If the owner or operator uses a continuous net heating value monitor according to paragraph (j)(3) of §63.670 , the owner or operator may, at their discretion, install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the hydrogen concentration in the flare vent gas.

(v) Direct compositional or net heating value monitoring is not required for purchased (“pipeline quality”) natural gas streams. The net heating value of purchased natural gas streams may be determined using annual or more frequent grab sampling at any one representative location. Alternatively, the net heating value of any purchased natural gas stream can be assumed to be 920 Btu/scf.

(vi) Direct compositional or net heating value monitoring is not required for gas streams that have been demonstrated to have consistent composition (or a fixed minimum net heating value) according to the methods in paragraphs (j)(6)(i) through (v) of §63.670 .

(A) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(1) A description of the flare gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the flare gas stream/system and the affected flare(s) to be considered;

(2) A statement that there are no crossover or entry points to be introduced into the flare gas stream/system (this should be shown in the piping diagrams) prior to the point where the flow rate of the gas streams is measured;

(3) An explanation of the conditions that ensure that the flare gas net heating value is consistent and, if flare gas net heating value is expected to vary (e.g., due to product loading of different material), the conditions expected to produce the flare gas with the lowest net heating value;

(4) The supporting test results from sampling the requested flare gas stream/system for the net heating value. Sampling data must include, at minimum, 2 weeks of daily measurement values (14 grab samples) for frequently operated flare gas streams/systems; for infrequently operated flare gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. If the flare gas stream composition can vary, samples must be

taken during those conditions expected to result in lowest net heating value identified in paragraph (j)(6)(i)(C) of §63.670 . The owner or operator shall determine net heating value for the gas stream using either gas composition analysis or net heating value monitor (with optional hydrogen concentration analyzer) according to the method provided in paragraph (l) of §63.670 ; and

(5) A description of how the 2 weeks (or seven samples for infrequently operated flare gas streams/systems) of monitoring results compares to the typical range of net heating values expected for the flare gas stream/system going to the affected flare (e.g., “the samples are representative of typical operating conditions of the flare gas stream going to the loading rack flare” or “the samples are representative of conditions expected to yield the lowest net heating value of the flare gas stream going to the loading rack flare”).

(6) The net heating value to be used for all flows of the flare vent gas from the flare gas stream/system covered in the application. A single net heating value must be assigned to the flare vent gas either by selecting the lowest net heating value measured in the sampling program or by determining the 95th percent confidence interval on the mean value of all samples collected using the t-distribution statistic (which is 1.943 for 7 grab samples or 1.771 for 14 grab samples).

(B) The effective date of the exemption is the date of submission of the information required in paragraph (j)(6)(i) of §63.670 .

(C) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in paragraph (j)(6)(iii)(A), (B), or (C) of §63.670 .

(1) If the operation change results in a flare vent gas net heating value that is still within the range of net heating values included in the original application, the owner or operator shall determine the net heating value on a grab sample and record the results as proof that the net heating value assigned to the vent gas stream in the original application is still appropriate.

(2) If the operation change results in a flare vent gas net heating value that is lower than the net heating value assigned to the vent gas stream in the original application, the owner or operator may submit new information following the procedures of paragraph (j)(6)(i) of §63.670 within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(3) If the operation change results in a flare vent gas net heating value has greater variability in the flare gas stream/system such the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin monitoring the composition or net heat content of the flare vent gas stream using the methods in §63.670 (i.e., grab samples every 8 hours until such time a continuous monitor, if elected, is installed).

(18) Operation of CPMS. For each CPMS installed to comply with applicable provisions in § 63.670, the owner or operator shall install, operate, calibrate, and maintain the CPMS as specified in paragraphs (a)(1) through (8) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Except for CPMS installed for pilot flame monitoring, all monitoring equipment must meet the applicable minimum accuracy, calibration and quality control requirements specified in table 13 of this subpart.

(ii) The owner or operator shall ensure the readout (that portion of the CPMS that provides a visual display or record) or other indication of the monitored operating parameter from any CPMS required for compliance is readily accessible onsite for operational control or inspection by the operator of the source.

(iii) All CPMS must complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.

(iv) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall operate all CPMS and collect data continuously at all times when regulated emissions are routed to the flare.

(v) The owner or operator shall operate, maintain, and calibrate each CPMS according to the CPMS monitoring plan specified in paragraph (b) of §63.671 .

(vi) For each CPMS except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraph (c) of §63.671 .

(vii) The owner or operator shall reduce data from a CPMS as specified in paragraph (d) of §63.671.

(viii) The CPMS must be capable of measuring the appropriate parameter over the range of values expected for that measurement location. The data recording system associated with each CPMS must have a resolution that is equal to or better than the required system accuracy.

(19) CPMS monitoring plan. The owner or operator shall develop and implement a CPMS quality control program documented in a CPMS monitoring plan that covers each flare subject to the provisions in §63.670 and each CPMS installed to comply with applicable provisions in §63.670. The owner or

operator shall have the CPMS monitoring plan readily available on-site at all times and shall submit a copy of the CPMS monitoring plan to AMS and EPA upon request by AMS and EPA. The CPMS monitoring plan must contain the information listed in paragraphs (b)(1) through (5) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Identification of the specific flare being monitored and the flare type (air-assisted only, steam-assisted only, air- and steam-assisted, pressure-assisted, or non-assisted).

(ii) Identification of the parameter to be monitored by the CPMS and the expected parameter range, including worst case and normal operation.

(iii) Description of the monitoring equipment, including the information specified in paragraphs (b)(3)(i) through (vii) of §63.670 .

(A) Manufacturer and model number for all monitoring equipment components installed to comply with applicable provisions in § 63.670.

(B) Performance specifications, as provided by the manufacturer and any differences expected for this installation and operation.

(C) The location of the CPMS sampling probe or other interface and a justification of how the location meets the requirements of paragraph (a)(1) of §63.670 .

(D) Placement of the CPMS readout, or other indication of parameter values, indicating how the location meets the requirements of paragraph (a)(2) of §63.670 .

(E) Span of the CPMS. The span of the CPMS sensor and analyzer must encompass the full range of all expected values.

(F) How data outside of the span of the CPMS will be handled and the corrective action that will be taken to reduce and eliminate such occurrences in the future.

(G) Identification of the parameter detected by the parametric signal analyzer and the algorithm used to convert these values into the operating parameter monitored to demonstrate compliance, if the parameter detected is different from the operating parameter monitored.

(iv) Description of the data collection and reduction systems, including the information specified in paragraphs (b)(4)(i) through (iii) of §63.670 .

(A) A copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard and to calculate the applicable averages.

(B) Identification of whether the algorithm excludes data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments.

(C) If the data acquisition algorithm does not exclude data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments, a description of the procedure for excluding this data when the averages calculated as specified in paragraph (e) of §63.670 are determined.

(v) Routine quality control and assurance procedures, including descriptions of the procedures listed in paragraphs (b)(5)(i) through (vi) of this section and a schedule for conducting these procedures. The routine procedures must provide an assessment of CPMS performance.

(A) Initial and subsequent calibration of the CPMS and acceptance criteria.

(B) Determination and adjustment of the calibration drift of the CPMS.

(C) Daily checks for indications that the system is responding. If the CPMS system includes an internal system check, the owner or operator may use the results to verify the system is responding, as long as the system provides an alarm to the owner or operator or the owner or operator checks the internal system results daily for proper operation and the results are recorded.

(D) Preventive maintenance of the CPMS, including spare parts inventory.

(E) Data recording, calculations and reporting.

(F) Program of corrective action for a CPMS that is not operating properly.

(20) Out-of-control periods. For each CPMS installed to comply with applicable provisions in § 63.670 except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraphs (c)(1) and (2) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) A CPMS is out-of-control if the zero (low-level), mid-level (if applicable) or high-level calibration drift exceeds two times the accuracy requirement of table 13 of this subpart.

(ii) When the CPMS is out of control, the owner or operator shall take the necessary corrective action and repeat all necessary tests that indicate the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established in this section is conducted. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. The owner or operator shall not use data recorded during periods the CPMS is out of control in data averages

and calculations, used to report emissions or operating levels, as specified in paragraph (d)(3) of this section.

(21) CPMS data reduction. The owner or operator shall reduce data from a CPMS installed to comply with applicable provisions in § 63.670 as specified in paragraphs (d)(1) through (3) of §63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator may round the data to the same number of significant digits used in that operating limit.

(ii) Periods of non-operation of the process unit (or portion thereof) resulting in cessation of the emissions to which the monitoring applies must not be included in the 15-minute block averages.

(iii) Periods when the CPMS is out of control must not be included in the 15-minute block averages.

(22) Additional requirements for gas chromatographs. For monitors used to determine compositional analysis for net heating value per § 63.670(j)(1), the gas chromatograph must also meet the requirements of paragraphs (e)(1) through (3) of § 63.671. [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The quality assurance requirements are in table 13 of this subpart.

(ii) The calibration gases must meet one of the following options:

(A) The owner or operator must use a calibration gas or multiple gases that include all of compounds listed in paragraphs (e)(2)(i)(A) through (K) of this section that may be reasonably expected to exist in the flare gas stream and optionally include any of the compounds listed in paragraphs (e)(2)(i)(L) through (O) of this section. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.

(1) Hydrogen.

(2) Methane.

(3) Ethane.

(4) Ethylene.

(5) Propane.

(6) Propylene.

(7) n-Butane.

(8) iso-Butane.

(9) Butene (general). It is not necessary to separately speciate butene isomers, but the net heating value of trans-butene must be used for co-eluting butene isomers.

(10) 1,3-Butadiene. It is not necessary to separately speciate butadiene isomers, but you must use the response factor and net heating value of 1,3-butadiene for co-eluting butadiene isomers.

(11) n-Pentane. Use the response factor for n-pentane to quantify all C5 hydrocarbons.
(12) Acetylene (optional).
(13) Carbon monoxide (optional).
(14) Propadiene (optional).
(15) Hydrogen sulfide (optional).

(B) The owner or operator must use a surrogate calibration gas consisting of hydrogen and C1 through C5 normal hydrocarbons. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.

(iii) If the owner or operator chooses to use a surrogate calibration gas under paragraph (e)(2)(ii) of §63.671, the owner or operator must comply with paragraphs (e)(3)(i) and (ii) of §63.671.

(A) Use the response factor for the nearest normal hydrocarbon (i.e., n-alkane) in the calibration mixture to quantify unknown components detected in the analysis.

(B) Use the response factor for n-pentane to quantify unknown components detected in the analysis that elute after n-pentane.

Point Breeze South Yard South Flare (P-643)

The Permittee shall monitor the following:

(23) The quantity and heating value of the refinery fuel gas that is combusted in the flare daily. [AMS Plan Approval 15271 dated 4/25/17]

Point Breeze LPG Flare (CD-104)

In accordance with Condition D.4.(d)(26)(ii) below, The Permittee is exempt from monitoring requirements listed in Conditions D.4.(d)(25), D.4.(d)(28)(i)-(iii), according to the EPA approved Alternative Monitoring Procedure (AMP), detailed in a letter from USEPA dated 15 April 2010. The Permittee must comply with the terms of the Alternative Monitoring Procedure (as described in D.4.(d)(32), and D.4.(f)(9)). If the gas stream composition ever changes or if the gas stream is no longer required to meet pipeline or product specifications, then the gas stream must be resubmitted to EPA for approval under the AMP. Conditions D.4.(d)(25) – (31) describe 40 CFR Subpart Ja requirements, and should be complied with unless the Permittee is otherwise exempt.

The Permittee shall monitor the following:

(24) The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The Permittee shall install, operate and maintain each H2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H2S.

(ii) The Permittee shall conduct performance evaluations for each H2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.

(iii) The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.

(iv) Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in the flares.

(v) The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph§§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument required in paragraph (e)(1) is used to demonstrate compliance with the H2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).

(vi) The owner or operator of modified flare that meets the following all three criteria shall comply with the requirements of Condition D.4(d)(25)(i)-(v) no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans pursuant to §60.13(i) until the flare is in compliance with requirements of Condition D.4(d)(25)(i)-(v).

(A) The flare was an affected facility subject to subpart J of this part prior to becoming an affected facility under §60.100a.

(B) The owner or operator had an approved alternative monitoring plan or plans pursuant to §60.13(i) for all fuel gases combusted in the flare.

(C) The flare did not have in place on or before September 12, 2012 an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases that is capable of complying with the requirements of Condition D.4(d)(25)(i)-(v).

(25) The Permittee is not required to comply with Condition D.4(d)(25)(i)-(vi) for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the following requirements shall be considered

inherently low in sulfur content. [40 CFR §60.107a(3), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Pilot gas for heaters and flares.

(ii) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.

(iii) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.

(iv) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in Condition D.4(d)(27).

(A) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in Condition D.4(d)(27)(iii). [40 CFR §60.107a(b)(3)]

(26) Exemption from H2S monitoring requirements for low-sulfur fuel gas streams. The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H2S monitoring requirements in Condition D.4(b)(27) for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs in 40 CFR 60§ 107a (a)(1) and (2) until there are changes in operating conditions or stream composition. [40 CFR §60.107a(b), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(A) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;

(B) A statement that there are no crossover or entry points for sour gas (high H2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);

(C) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;

(D) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv H2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless

other additional information would support reduced sampling. The owner or operator shall use detector tubes ("length-of-stain tube" type measurement) following the "Gas Processors Association Standard 2377-86 (incorporated by reference - see §60.17), using tubes with a maximum span between 10 and 40 ppmv inclusive when 1≤N≤10, where N = number of pump strokes, to test the applicant fuel gas stream for H2S; and

(E) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H2S content in the fuel gas stream going to the loading rack flare).

(ii) The effective date of the exemption is the date of submission of the information required in Condition D.4(d)(27)(i). [40 CFR 60§ 107a (b)(1)]

(iii) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in Conditions D.4(d)(27)(iii)(A), D.4(d)(27)(iii)(B), or D.4(d)(27)(iii)(C). [40 CFR §60.107a (b)(3)(i), (b)(3)(ii), or (b)(3)(iii)]

(A) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H2S test on a grab sample and record the results as proof that the concentration is still within the range.

(B) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of Condition D.4(d)(27)(i) within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(C) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H2S monitoring using daily stain sampling to demonstrate compliance using length-of-stain tubes with a maximum span between 200 and 400 ppmv inclusive when 1≤N≤5, where N = number of pump strokes. The owner or operator must begin monitoring according to the requirements in paragraphs §60.107a(a)(1) or (a)(2) as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H2S concentration limit.

The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

(27) Sulfur monitoring for assessing root cause analysis threshold for affected flares. Except as described in Condition D.4(d)(28)(iv), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii). Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii), the owner or operator of a modified flare must comply with the requirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii) upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii), the owner or operator of a modified flare must comply with therequirements related to either Conditions D.4(d)(28)(i), D.4(d)(28)(ii) or D.4(d)(28)(iii) of no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(e), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) Total reduced sulfur monitoring requirements. The owner or operator shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(A) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this paragraph and paragraph (a)(2) of §60 107a provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to this part. The owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not

necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each total reduced sulfur monitor.

(ii) H2S monitoring requirements. The owner or operator shall install, operate, calibrate, and maintain an instrument or instruments for continuously monitoring and recording the concentration of H2S in gas discharged to the flare according to the requirements in Condition D.4(d)(28)(ii)(A)-(C) and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in Conditions D.4(d)(28)(ii)(D)-(I).

(A) The owner or operator shall install, operate and maintain each H2S monitor according to Performance Specification 7 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H2S monitor may be used to comply with the requirements of this paragraph and Condition D.4(d)(25) provided the applicable span specifications are met.

(B) The owner or operator shall conduct performance evaluations of each H2S monitor according to the requirements in§60.13(c) and Performance Specification 7 of appendix B to this part. The owner or operator shall use EPA Method 11, 15 or 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference - see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(C) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.

(D) In the first 10 operating days after the date the flare must begin to comply with §60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in Condition D.4(d)(28)(ii)(I).

(E) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of appendix A-5 to part 60,

EPA Method 16A of appendix A-6 to part 60, ASTM Method D4468-85 (Reapproved 2006) (incorporated by reference - see §60.17) or ASTM Method D5504-08 (incorporated by reference - see §60.17).

(F) The owner or operator shall develop a 10-day average total sulfur-to-H2S ratio and 95-percent confidence interval as follows:

(1) Calculate the ratio of the total sulfur concentration to the H2S concentration for each day during which samples are collected.

(2) Determine the 10-day average total sulfur-to-H2S ratio as the arithmetic average of the daily ratios calculated in Condition D.4(d)(28)(ii)(F)(1).

(3) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios based on the 10 individual daily ratios using Equation 14 of §60.107a.

$$AR = \quad Ratio_{avg} \pm 2.262 \times SDev$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

$Ratio_{Avg}$ = 10-day average total sulfur-to-H2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H2S concentration ratios used to develop the 10-day average total sulfur-to-H2S concentration ratio, unitless.

(G) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the total sulfur concentration using the measured total sulfur concentration measured for that day.

(H) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H2S ratio by the daily average H2S concentrations obtained using the monitor as required by paragraph Condition D.4(d)(28)(ii)(A) through (C) to estimate total sulfur concentrations.

(I) If the total sulfur-to-H2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average

ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(iii) SO2 monitoring requirements. The owner or operator shall install, operate operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of SO2 from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of 60 §107a, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of 60 §107a, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of 60 §107a, and calculate the total sulfur content (as SO2) in the fuel gas using Equation 15 of 60 §107a.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG}$$

Where:

TS_{FG}= Total sulfur concentration, as SO2, in the fuel gas, ppmv.

C_{SO_2} = Concentration of SO2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

F_d = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHV_{FG} = Higher heating value of the fuel gas, MMBtu/scf.

(iv) Exemptions from sulfur monitoring requirements. Flares identified in Conditions D.4(d)(28)(iv)(A) through (D) are exempt from the requirements in Conditions D.4(d)(28)(i) through (iii). For each such flare, except as provided in Condition D.4(d)(28)(iv)(D), engineering calculations shall be used to calculate the SO2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(A) Flares that can only receive:

(1) Fuel gas streams that are inherently low in sulfur content as described in Conditions D.4(d)(26)(i) through (iv); and/or

(2) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H2S monitoring requirements as described in Condition D.4(d)(27).

(B) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(30).

(C) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from

startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition D.4(d)(30).

(D) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO2 emissions, regardless of whether or not the monitoring alternative in Condition D.4(d)(30) is selected for the secondary flare

(28) Flow monitoring for flares. The owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition D.4(d)(29)(i), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f), AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

(i) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.

(A) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.

(B) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.

(C) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.

(D) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.

(E) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

(29) Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(30) Excess emissions. For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions D.4(d)(31)(i) and (ii). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages) [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018].

(i) H2S concentration limits for flares.

(A) Each rolling 3-hour period during which the average concentration of H2S as measured by the H2S continuous monitoring system required under Condition D.4(d)(25) exceeds 162 ppmv.

(ii) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition D.4(d)(27)(iii)(C), each day during which the daily concentration of H2S exceeds 162 ppmv.

(31) The Permittee will sample and analyze propane products produced at the Point Breeze Propane Terminal for hydrogen sulfide content on a daily basis, at a minimum, and report to EPA any analysis showing a hydrogen sulfide content of 20 ppm or greater along with a description of the investigation conducted by the Permittee to determine the cause of the high sulfur condition and the investigation results [Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010].

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

The Permittee shall keep the following records:

(1) For all flares, continuous records of presence of pilot flame.

(2) For all flares record the following:

(i) Fuel types, fuel usage, and sulfur analysis of the fuel burned in the pilots on a daily basis. [SO_2 Operating Permit No. SO2-95-039]

(A) The sulfur content of the natural gas burnt in the flare pilot may be based on AP-42 factors for combustion sources.

(ii) Occurrences when the feed to the flare has exceeded the worst case analysis for SO_2 in the modeling demonstration including the date, time, duration and calculated emissions of the exceedance. [SO_2 Operating Permit No. SO2-95-039]

(iii) Date, time, duration, and calculated emissions of any exceedance per Section D.4(d)(3).

(3) SO_2 emission for each Acid Gas or Tail Gas Flaring incident. Calculations shall be in accordances with Section D.4(d)(6) [Consent Decree Order 05-CV-2866]

(4) SO_2 emission for each Hydrocarbon Flaring Incident. SO_2 emission calculations for each Hydrocarbon flaring Incident shall use AG Flaring Incident formulas accordances with Section D.4(d)(6) [Consent Decree Order 05-CV-2866]

(5) Flare monitoring records. The owner or operator shall keep the records specified in § 63.655(i)(9). [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

Point Breeze South Yard South Flare (P-643)

The Permittee shall keep the following records:

(6) If the monitoring option in 40 CFR 60.107a(e)(2) is used, the Permittee shall keep records of the H_2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H_2S ratios, the calculated 10-day average total sulfur-to-H_2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H_2S ratio. [40 CFR 60.108a(c)(7), AMS Plan Approval 15271 dated 4/25/17]

(A) Root cause analysis

(B) Stack tests conducted on the flare.

(7) The date, time, and duration of each flaring incident, the cause of the flaring incident, the flow rate of gases being sent to the flare during each flaring incident, and the amount of each pollutant emitted during each incident. [AMS Plan Approval 15271 dated 4/25/17]

(8) Discharges greater than 500 lb SO_2 in any 24-hour period from the flare. Records shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds. The records shall include information as required in 40 CFR 60.108a(c)(6). [Consent Decree and 40 CFR 60.108a(c)(6), AMS Plan Approval 15271 dated 4/25/17]

(9) A copy of the Flare Management Plan.[40 CFR 60.108a(c)(1), AMS Plan Approval 15271 dated 4/25/17]

(f) Reporting Requirements

For Sources P-117, P-118, P-119, P-642, P-643, and P-646:

(1) Submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

(2) No later than 45 days following the end of an Acid Gas Flaring Incident occurring after Date of Entry, the Permittee shall submit to AMS and EPA a report with following: [Consent Decree Order 05-CV-2866]

(i) The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, the Permittee shall set forth the starting and ending dates and times of each release;

(ii) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

(ii) The steps, if any, that the Permittee took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

(iii) A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;

(iv) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If the Permittee concludes that corrective action(s) is (are) required the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If the Permittee concludes that corrective action is not required, the report shall explain the basis for that conclusion;

(v) A statement that: (a) specifically identifies each of the grounds for stipulated penalties as specified in Paragraphs 56 and 57 of the Consent Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds;

(vi) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 53.d and 53.e of the Consent Decree shall be submitted; provided, however, that if the Permittee has not submitted a report or a series of reports containing the information required to be submitted within the 45-day time period set forth (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section XI of the Consent Decree shall apply, but the Permittee shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Philadelphia Energy Solution's failure to submit the report required under this Paragraph within the time frame set forth.

(vii) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), the Permittee shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

(3) For each Tail Gas Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) [Consent Decree Order 05-CV-2866]

(4) For each Hydrocarbon Flaring Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) and shall: [Consent Decree Order 05-CV-2866]

(i) Submit the Hydrocarbon Flaring Incident reports as part of the Semi-Annual Progess Reports in accordance with Section D.1(e)(6)

(5) Reporting. The owner or operator shall comply with the reporting requirements specified in § 63.655(g)(11). [AMS Plan Approval IP18-000260 & IP18-000263, dated 26 September 2018]

Point Breeze South Yard South Flare (P-643)

(6) The permittee shall report semiannually all rolling 3-hour periods during which the average concentration of H_2S in fuel gas exceeded 0.1 grains per dscf or all rolling 3-hour periods during which the average concentration of S02 in the stack exceeded 20 ppmv (dry basis, zero percent excess air). [AMS Plan Approval 15271 dated 4/25/17

(7) All notifications required in 40 CFR 60 Subpart Ja shall be submitted to the following address: [40 CFR60.103a(b)(3), AMS Plan Approval 15271 dated 4/25/17]

U.S. Environmental Protection Agency,
Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01),
Attention: Refinery Sector Lead,
109 T.W. Alexander Drive,
Research Triangle Park, NC 27711.

Electronic copies in lieu of hard copies may also be submitted to refinerynsps@epa.gov

(8) The Permittee shall submit CEM report for the H_2S to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM. [AMS Plan Approval 15271 dated 4/25/17]

Point Breeze LPG Flare (CD-104)

(9) The investigation into propane product hydrogen sulfide content (as described in Condition D.4.(d)(32)) must be conducted immediately upon the Permittee's knowledge of the high sulfur condition in the propane products. All reports to EPA Region III must be sent to the address below [Flare Alternative Monitoring Procedure (AMP), Approval dated 15 April 2010]:

James W. Hagedorn

Environmental Scientist
EPA Region III Office of Air Enforcement and Compliance Assistance
Mail Code 3AP20
1650 Arch Street
Philadelphia, Pennsylvania 19103

5. Group 04 - Loading Facilities and Control Equipment

Girard Point equipment numbered P-129, P-183 and P-637. Point Breeze equipment numbered P-638 and P-644.

(a) Emission Limitations

(1) Volatile Organic Compounds (VOC) emissions from the railcar butane loading/unloading operation (P-637) shall be less than 2.7 tons on rolling 12-month period [Plan Approval Exemption, AMS Installation Permit No. 14045, dated 8 April 2014]

(2) Fugitive VOC emissions from each crude rail car unloading facility (P-644) shall not exceed 500 lbs per rolling 12-month period [AMS Installation Permit No. 13020B, dated 20 March 2015]

(b) Work Practice Standards

(1) The Permittee shall utilize an LDAR program as described for Group 06, Section D.7.(a). [25 PA Code §129.58]

(2) The Permittee shall utilize a carbon adsorber at the benzene railcar unloading station to control benzene vapors from a manual vent on the nitrogen pressurization system. The adsorber should be operated by keeping the outlet below 20 ppm by volume benzene. In the event that the vent is activated, the outlet shall be monitored at the start and the end of the vent period with a portable chromatograph. If a portable chromatograph is not available, a drager tube may be used as a substitute. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(3) The Permittee shall only process butane/isobutane/n-butane/butylene streams at butane railcar loading/unloading stations [AMS Installation Permit No. 14045, dated 8 April 2014].

(4) The loading/unloading hoses and pipes associated with butane loading/unloading (P-637) shall be vented to the 1231/1232 flare and depressurized to 5-7 psig prior to disconnecting from the station [AMS Installation Permit No. 14045, dated 8 April 2014].

(5) All connections shall be equipped with fittings which shall be vapor tight and will automatically and immediately close upon disconnection so as to prevent organic material emissions [AMS Installation Permit No. 14045, dated 8 April 2014].

(6) No person shall cause, suffer. allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking

valves, pumps. compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V Sec XIII]

(i) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the AMS;

(A) Leak definition for valves and pumps shall comply with Global Consent Decree issued as part of Civil Action No. 05-02866.

(ii) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.

(7) The butane railcar loading/unloading stations shall be installed, operated and maintained in accordance with both the manufacturer's specification and the specifications in the installation permit [AMS Installation Permit No.: 14045]

(8) All pumps handling organic materials having a vapor pressure of 1.5 pounds per square inch absolute or greater at ambient conditions shall have mechanical seals, or other components of equal or greater efficiency approved by AMS [AMS Installation Permit No. 13020B, dated 20 March 2015].

(9) The Permittee shall only unload using vapor tight connections and when vapor recovery system is in operation [AMS Installation Permit No. 13020B, dated 20 March 2015].

(10) The Permittee shall incorporate all components of fugitive source into the Refinery's current Leak Detection and Repair Program. The leak inspection program shall be in accordance with 25 PA Code 129.58, AMR V. A visual check for leaks shall be performed at the beginning of each transfer, and PES shall continue to visually monitor for leaks during the transfer [AMS Installation Permit No. 13020B, dated 20 March 2015].

(c) Testing Requirements

[25 PA Code §139]

(1) For determining the magnitude of VOC leaks, use EPA Method 21 as described for Group 06, Section D.7.(b).

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) For equipment leaks, utilize the same monitoring techniques and frequencies as used for Group 06, Section D.7.(c).

(2) The Permittee shall monitor and keep records of any emissions that bypass any control devices associated with the benzene unloading operation. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(3) Monthly product unloaded from benzene rail cars.

(4) For Butane Railcar Loading/Unloading (P-637), the Permittee shall monitor and keep records of VOC emissions on monthly and rolling 12-month basis. VOC emission shall be based on number of loading/unloading operations per day, number of venting to atmosphere, and the following emission factors or other AMS approved factors [AMS Installation Permit No. 14045, dated 8 April 2014].

(i) Stinger: 0.008 lb/hose (all loading/unloading events)

(ii) Vapor hose: 0.1 lb/hose (only when opening hose to atmosphere)

(iii) Product hose: 0.2 lb/hose (only when opening hose to atmosphere)

(5) For Butane Railcar Loading/Unloading (P-637), The fugitive emission shall be monitored and recorded on quarterly basis in accordance with the LDAR program for all valves, flanges, and connectors in VOC service [AMS Installation Permit No. 14045, dated 8 April 2014].

(6) The Permittee shall monitor and record the following for crude oil transfer operations in a format that is acceptable to AMS [AMS Installation Permit No. 13020B, dated 20 March 2015]:

(i) On monthly basis monitor and record crude throughput at the 137 Crude Unit and the 210 Crude Unit.

(ii) Calculate monthly fugitive VOC emission from all valves, pumps compressors, safety pressure relief devices or other process equipment components to demonstrate compliance with Condition 2.

(A) Verification shall be based on EPA 1995 Protocol for Equipment Leak Emission Estimates, Table 2-12, or subsequent AMS approved factors.

(iii) On a monthly basis, record the following:

(A) The true vapor pressure and Reid Vapor Pressure of the crude oil loaded.

(B) Any daily malfunctions that occur during the transfer operation.

(C) Quantity of crude oil loaded during malfunctions

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall retain a schematic diagram of the affected vent stream, collection system, fuel system, combustion devices and any bypass system that is associated with the LPG on site. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4)]

(2) Maintain a monitoring log similar to that shown for Group 06, Section D.7.(c)(5).

(3) Records of any emissions that bypass any control devices associated with the benzene unloading operation. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(4) Monthly product unloaded from benzene railcars.

(5) For each Group 2 transfer rack, the Permittee shall maintain records in 40 CFR 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack. [40 CFR 63.126(c)]

(i) The Permittee of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in 40 CFR 63.130(f)(1) – (3) in a readily accessible location on site: [40 CFR 63.130(f)]

(A) An analysis demonstrating the design and actual annual throughput of the transfer rack; [40 CFR 63.130(f)(1)]

(B) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations. [40 CFR 63.130(f)(2)]

(C) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack. [40 CFR 63.130(f)(3)]

(1) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressure less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated. [40 CFR 63.130(f)(3)(i)]

(2) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred. [40 CFR 63.130(f)(3)(ii)]

(f) Reporting Requirements

(1) Submit quarterly reports as described for Group 06, Section D.7.(d).

(2) The Permittee shall submit semi-annual reports for the Crude Loading Facility (P-644) as required by the Global Consent Decree issued as part of Civil Action No. 05-02866 [AMS Installation Permit No. 13020B, dated 20 March 2015].

6. Group 05 – Sulfur recovery units

Point Breeze equipment numbered P659, P660, CD108 (Amine Tail Gas Scrubber), CD109 (Tail Gas Incinerator – TGU-1), and CD114 (Tail Gas Incinerator – TGU-2)

(a) Emission Limitations

(1) Emissions of SO_2 shall not exceed a concentration of 250 ppm SO_2 by volume on a dry basis at zero percent excess air on a rolling 12-hour average; or operate the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis), except during startup or shutdown conditions. [40 CFR § 60.104(a)(2)(i), 40

CFR § 63.1568(a)(2), Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91 for P659, AMS Plan Approval 01162 dated 10/8/02, AMS Plan Approval 04322, dated 2/28/06 and AMS Plan Approval 06144, dated 1/29/08]

(2) During periods of startup and shutdown, shall comply with 63.1568(a)(4)(i) by meeting emission limitations in 63.1568(a)(1)(i); comply with 63.1568(a)(4)(ii) by sending any shutdown purge gases to the flare; or comply with 63.1568(4)(iii) by sending any startup or shutdown purge gases to the thermal oxidizer or incinerator at a minimum hourly average temperature of 1,200 degrees Fahrenheit in the firebox and a minimum hourly average outlet oxygen (O2) concentration of 2 volume percent (dry basis).

(3) The combined SO_2 emission rate from P659 and P660 shall not exceed 31.72 lbs/hr. [SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA Code §129.13, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(4) When operating only one Claus unit (P659 or P660), the SO_2 emission rate from Sulfur Recovery units, shall not exceed 15.36 lbs/hr or 67 tons per rolling 12-month period. [Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91, AMS Plan Approval 01162 dated 10/8/02]

(b) Work Practice

(1) The 867 SRU combined (North and South) sulfur production rate shall be limited to 80 Long ton per day averaged over a rolling 12-month period [Plan Approval 06144, issued 1/29/08].

(c) Testing Requirements

[25 PA Code §139]

(1) The performance evaluations for the SO_2 monitor shall use Performance Specification 2. Methods 6C and 3A, in accordance with 40 CFR 60.106(f)(1) and 40 CFR 60.106(f)(3) respectively, shall be used for conducting the relative accuracy evaluations. [40 CFR 60.105(a)(5)(ii), 40 CFR 60.106(f)(1) and 40 CFR 60.106(f)(3)]

(2) The Permittee shall conduct CEMS performance evaluations at such times as may be required by the EPA Administrator and AMS under section 114 of the Act. The frequency shall be in accordance with 25 Pa Code §139 and the "Source Testing Manual." [40 CFR 60.13(c), 25 Pa Code §139]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall demonstrate compliance with the SO2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 40 CFR Part 60, Subpart J and Appendix B, 40 CFR Part 63, Subpart UUU and 25 PA Code Chapter 139. .[Plan Approval 04322, dated 2/28/06 and Plan Approval 06144, dated 1/29/08]

(2) Continuously monitor and record the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include

an oxygen monitor for correcting the data for excess air. [40 CFR 60.105(a)(5)]

(i) The span values for CD-109 (TGU-1) monitor is 500 ppm SO_2 and 12.5 percent O_2. [Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91 for P659]

(ii) The span values for CD-110 (TGU-2) monitor is 500 ppm SO2 and 25 percent O2. [40 CFR 60.105(a)(5), Plan Approval 06144 dated 1/29/08].

(3) The Permittee shall record the SRU sulfur recovery rate daily for each unit and averaged over a rolling 12-month period on a monthly basis for the combined units [SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(4) SO2 Emission Calculations for the Tail Gas Incidents. [Consent Decree Order 05-CV-2866]

(i) For Tail Gas Incidents, the Permittee shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as those set forth in Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including unscheduled shutdowns of a Claus Sulfur Recovery Plant. Notwithstanding the foregoing, stipulated penalties shall not apply to emissions resulting from the scheduled Start-up or Shutdown of a Sulfur Recovery Plant.

(ii) The quantity of SO_2 emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event:

(A) If Tail Gas is combusted in a flare, the SO_2 emissions are calculated using the methods outlined in Section D.4.(c)(6); or

(B) If Tail Gas exceeding the 250 ppmvd (NSPS J limit) is emitted from a monitored SRP incinerator, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [FR_{Inc.}]_i [Conc.\ SO_2 - 250]_i [0.169 \times 10^{-6}] [(20.9 - \%\ O_2)/20.9]_i$$

where:

ER_{TGI} = Emissions in excess of the 250 ppm limit from the Tail Gas Unit at the SRP incinerator, pounds of SO_2 over a 24-hour period

TD_{TGI} = Hours when the incinerator CEM was exceeding 250 ppmvd SO_2 on a rolling twelve hour average, corrected to 0% O2, in each 24-hour period of the Incident

i = Each hour within TD_{TGI}

$FR_{Inc.}$ = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident

Conc. SO_2 = The average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O_2, for each hour of the Incident

$\%\ O_2$ = O_2 concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident

0.169×10^{-6} = [lb mole of SO_2 / 379 SO_2] [64 lbs SO_2 / lb mole SO_2] [1×10^{-6}]

Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then the Permittee shall estimate emissions based on best engineering judgment.

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Record periods of excess emissions when all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under Section D.6(c)(2) exceeds 250 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(4)(i)]

NOTE: All averages shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 12-hour average shall be determined as the arithmetic average of 12 contiguous 1-hour averages.

(2) Source shall be periodically observed for process and log data, strip chart, or electronic monitoring media. [SO2 Operating Permit No. SO2-95-039]

(3) The Permittee shall keep continuous emission records. [SO2 Operating Permit No. SO2-95-039, 25 PA Code §139.101(5)]

(4) The Permittee shall record the SRU sulfur recovery rate daily for each unit and averaged over a rolling 12-month period on a monthly basis for the combined units [SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(5) The Permittee shall record SRU rolling 12-month SO2 emissions on a monthly basis to ensure compliance with Section D.6(a)(3) & (4). Emissions may be allocated based on total SRU emission and North SRU and South SRU sulfur recovery rate.

(6) SO2 emission for each Tail Gas Flaring incident. Calculations shall be in accordances with Section D.6(d)(4) [Consent Decree Order 05-CV-2866]

(f) Reporting Requirements

(1) Report periods of excess emissions when all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under Section D.6(c)(2) exceeds 250 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(4)(i)]

(2) Submit excess emissions and monitoring systems performance report and-or summary report form to the AMS semiannually. More frequent reporting may be required by the AMS. All reports shall be postmarked by the 30th day following the end of each six-month period. [40 CFR 60.7(c)]

7. Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV, and 40 CFR 63 Subpart CC

[40 CFR 60.480, 60.590 & 63.648; PA129.58; AMR V Section XIII A. and E., 40 CFR 61 Subpart J]

The following Summary Table is a summary of leak detection and repair regulatory applicability for individual components within each process unit of the refinery:

Summary Table

Regulatory Level:	Federal				Local	
Program Descriptor:	**40CFR60 Sub VV Applicbty & Method**	**40CFR60 Sub GGG Applicbty (VV Mthd)**	**40CFR63 Sub CC (Electing 40CFR60 Sub VV Method)**	**40CFR63 Sub H Applicbty & Method**	**PA 129.58 VOC**	**PA 129.71 SOCMI VOC**
Applicability & Source Definition Ref.:	**60.480(a)**	**60.590(a)**	**63.640(a) 63.648(a)**	**63.100 63.160(a)**	**121.1 129.58**	**121.1 129.71**
Source Definition Summary:	**VOC comp's. in SOCMI units per 60.489**	**compressor & group of all equip. within a process unit**	**all OHAP components in unit unless noted for VOC coverage**	**all OHAP components in facility CMPU's unless noted for VOC coverage**	**VOC comp's. in the unit not monitored per NSPS or NESHAP or Pa SOCMI**	**VOC comp's. in SOCMI units per 60.489 not MON. per NSPS, NESHAP or Pa VOC**
POINT BREEZE PROCESSING AREA:						
210a/b Crude, A/C Vacuum			**x (use MACT)**		**x**	
864 Unifiner			**x (use MACT)**		**x**	
865 Distillate HDS		**x**			**x**	
866 Heavy Oil HDS			**x (use MACT)**		**x**	
868 FCC		**x**	**x (use MACT)**		**x**	
869 Alkylation HPN & DIB		**x**	**x (use MACT)**		**x**	
860 Unifiner / Reformer			**x (use MACT)**		**x**	
862 Light Ends			**x (use MACT)**		**x**	
867 SRU,with SWS, Claus, MDEA/DEA, Incin.			**x (use MACT)**		**x**	
867 (includes Bio Plant and PB WWTP)			**x**		**x**	
870(LSG)		**x (use GGGa)**	**x**		**x**	
859 ULSD		**x(GGGa)**			**x**	
~~**Inter-Refy. Pipeline Eqpt. (Mar. Hook)**~~		~~**x, for 40/61/J**~~				
Girard Point Wharf including Marine Vapor Recovery System		**x (use VV)**			**x**	
Fuel Gas System (GP & PB)		**x (use VV)**			**x**	
GIRARD POINT PROCESSING AREA:						
137 Crude/Vacuum			**x (use VV)**		**x**	

Regulatory Level:	Federal				Local	
Program Descriptor:	**40CFR60 Sub VV Applicbty & Method**	**40CFR60 Sub GGG Applicbty (VV Mthd)**	**40CFR63 Sub CC (Electing 40CFR60 Sub VV Method)**	**40CFR63 Sub H Applicbty & Method**	**PA 129.58 VOC**	**PA 129.71 SOCMI VOC**
Applicability & Source Definition Ref.:	**60.480(a)**	**60.590(a)**	**63.640(a) 63.648(a)**	**63.100 63.160(a)**	**121.1 129.58**	**121.1 129.71**
Source Definition Summary:	**VOC comp's. in SOCMI units per 60.489**	**compressor & group of all equip. within a process unit**	**all OHAP components in unit unless noted for VOC coverage**	**all OHAP components in facility CMPU's unless noted for VOC coverage**	**VOC comp's. in the unit not monitored per NSPS or NESHAP or Pa SOCMI**	**VOC comp's. in SOCMI units per 60.489 not MON. per NSPS, NESHAP or Pa VOC**
1332 Hydrobon			**x (use MACT)**		**x**	
1332 Reformer			**x (use MACT)**		**x**	
231 Distillate HDS			**x**		**x**	
1232 FCC			**x (use MACT)**		**x**	**x, use MACT**
1232 CO Boiler			**x (use MACT)**		**x**	
431 C4 & C3 Distillation			**x**		**x**	**x, use MACT**
C3/C4 Compressor @ 1332		**x (use VV)**			**x**	
331 Isomerization		**x (use VV)**			**x**	
					x	
433 Alkylation (HF)		**x**	**x (use MACT)**		**x**	
1732 Benzene Recovery (including associated tankage)	**x, use HON**			**x**		**x, use HON**
1733 Cumene Production (including associated tankage)	**x, use HON**			**x**		**x, use HON**
# 3 Boilerhouse					**x**	
8832 (includes GP Waste Water Treatment Plant #2 and #4 Separator)			**x (use MACT)**			
8733 Sour Water Stripper					**x**	
531 (WGS)			**x (use MACT)**		**x**	
532 Amine Absorber			**x (use MACT)**			
Butane Line (between PB & GP)		**x (use VV)**			**x**	
North Tank Field (NTF)			**x**		**x**	
North Yard Oil Moveement (NYOM) - #3 Farm (non IRPL)			**x**		**x**	
NYOM Propane Terminal (subarea of NYOM)		**x**			**x**	
NYOM Inter Refinery Pipeline (subarea of NYOM)		**x**			**x**	
South Tank Field (except HON tanks and unloading)			**x**		**x**	
HON Tanks and unloading (subarea of STF)				**x**		**x**
South Yard Oil Movement (SYOM) - #1, #4, Farms subareas			**x**		**x**	
SYOM #5 Farm (subarea of SYOM)					**x**	
SYOM #2 Farm (subarea of SYOM)			**x**		**x**	
SYOM #2 Farm HON (subarea of SYOM)				**x**		**x**
SYOM Inter Refinery Pipeline (subarea of SYOM)		**x**			**x**	
South Yard Butane Rail Terminal (SYBRT)					**x**	
Crude Loading Facility					**x**	

(a) Work Practice Standards

(1) PUMPS IN LIGHT LIQUID SERVICE.

(i) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-2(d), 40 CFR 60.482-2(e), and 40 CFR 60.482-2(f). [40 CFR 60.482-2(a)(1)]

(ii) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. [40 CFR 60.482-2(a)(2)]

(iii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-2(b)(1)]

(A) If there are indications of liquids dripping from the pump seal, a leak is detected.

(B) If there are indications of liquids dripping from the pump seal, the Permittee shall follow the procedure specified below in Section D.7.(a)(1)(v)(A) & (B). This requirement does not apply to a pump that was monitored after a previous weekly inspection if the instrument reading for that monitoring event was less than 10,000 ppm and the pump was not repaired since that monitoring event.

(1) Monitor the pump within 5 days as specified in 40 CFR §60.485(b). If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak shall be repaired using the procedures as follows:

(i) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described below, where practicable.

- Tightening the packing gland nuts;
- Ensuring that the seal flush is operating at design pressure and temperature.

(2) Designate the visual indications of liquids dripping as a leak, and repair the leak within 15 days of detection by eliminating the visual indications of liquids dripping.

(iv) LEAKING PUMPS.

(A) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-2(c)(1)]

(B) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(c)(2)]

(v) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 60.482-2(a), Provided the following requirements are met:

(A) Each dual mechanical seal system is-

(1) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 60.482-2(d)(1)(i)]

(2) Equipment with a barrier fluid degassing reservoir that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or [40 CFR 60.482-2(d)(1)(ii)]

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-2(d)(1)(iii)]

(B) The barrier fluid system is in heavy liquid service or is not in VOC service. [40 CFR 60.482-2(d)(2)]

(C) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(3)]

(D) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals. [40 CFR 60.482-2(d)(4)]

(E) Each sensor as described in 40 CFR 60.482-2(d)(3) is checked daily or is equipped with an audible alarm, and [40 CFR 60.482-2(d)(5)(i)]

(F) The Permittee determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(5)(ii)]

(G) LIQUID LEAKS FROM PUMPS IN LIGHT LIQUID SERVICE.

(1) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in 40 CFR 60.482-2(d)(5)(ii), a leak is detected. [40 CFR 60.482-2(d)(6)(i)]

(2) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-2(d)(6)(ii)]

(3) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(d)(6)(iii)]

(vi) Any pump that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-2(a), 40 CFR 60.482-2(c), and 40 CFR 60.482-2(d) if the pump:

(A) Has no externally actuated shaft penetrating the pump housing [40 CFR 60.482-2(e)(1)],

(B) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in 40 CFR 60.485(c), and. [40 CFR 60.482-2(e)(2)]

(C) Is tested for compliance with 40 CFR 60.482-2(e)(2) initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.482-2(e)(3)]

(vii) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from 40 CFR 60.482-2(a) through 40 CFR 60.482-2(e). [40 CFR 60.482-2(f)]

(2) COMPRESSORS. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-3 (h) and 40 CFR 60.482-3(i). [40 CFR 60.482-3(a)]

(i) Each compressor seal system as required in 40 CFR 60.482-3(a) shall be:

(A) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or [40 CFR 60.482-3(b)(1)]

(B) Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or [40 CFR 60.482-3(b)(2)]

(C) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-3(b)(3)]

(ii) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service. [40 CFR 60.482-3(c)]

(iii) Each barrier fluid system as described in 40 CFR 60.482-3(a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. [40 CFR 60.482-3(d)]

(iv) Each sensor as required in 40 CFR 60.482-3(d) shall be checked daily or shall be equipped with an audible alarm. [40 CFR 60.482-3(e)(1)]

(v) The Permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-3(e)(2)]

(vi) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under 40 CFR 60.482-3(e)(2), a leak is detected. [40 CFR 60.482-3(f)]

(vii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-3(g)]

(viii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-3(g)(2)]

(ix) A compressor is exempt from the requirements of 40 CFR 60.482-3(a) and 40 CFR 60.482-3(b), if it is equipped with a closed vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of 40 CFR 60.482-10, except as provided in 40 CFR 60.482-3(i). [40 CFR 60.482-3(h)]

(x) Any compressor that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-3(a)-(h) if the compressor:

(A) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in 40 CFR 60.485(c); and [40 CFR 60.482-3(i)(1)]

(B) Is tested for compliance with 40 CFR 60.482-3(i)(1) initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.482-3(i)(2)]

(3) PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE.

(i) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-5(a) and 40 CFR 63.648(j)(1)]

(ii) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-4(b)(1) and 40 CFR 63.648(j)(2)(i)].

(iii) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(b)(2)]

(iv) Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of 40 CFR 60.482-4(a) and 40 CFR 60.482-4(b). [40 CFR 60.482-4(c)]

(4) SAMPLING CONNECTION SYSTEMS.

(i) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in 40 CFR 60.482-1(c). [40 CFR 60.482-5(a)]

(ii) Each closed-purge, closed-loop, or closed-vent as required in 40 CFR 60.482-5(a) shall comply with the requirements specified in 40 CFR 60.482-5(b)(1) through 40 CFR 60.482-5(b)(4). [40 CFR 60.482-5(b)]

(A) Return the purged process fluid directly to the process line; or [40 CFR 60.482-5(b)(4)]

(B) Collect and recycle the purged process fluid to a process; or [40 CFR 60.482-5(b)(4)]

(C) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10. [40 CFR 60.482-5(b)(4)]

(iii) In situ sampling systems and sampling systems without purges are exempt from the requirements of 40 CFR 60.482-5(a) and 40 CFR 60.482-5(b). [40 CFR 60.482-5(c)]

(5) OPEN-ENDED VALVES OR LINES.

(i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c). [40 CFR 60.482-6(a)(1)]

(ii) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. [40 CFR 60.482-6(a)(2)]

(iii) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [40 CFR 60.482-6(b)]

(iv) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with 40 CFR 60.482-6(a) at all other times. [40 CFR 60.482-6(c)]

(6) VALVES IN GAS-VAPOR SERVICE AND LIGHT LIQUID SERVICE. Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with 40 CFR 60.482-7(b) through 40 CFR 60.482-7(e), except as provided in 40 CFR 60.482-7(f), (g), and (h), 40 CFR 60.483-1,2, and 40 CFR 60.482-1(c). [40 CFR 60.482-7(a)]

(i) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-7(b)]

(ii) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. [40 CFR 60.482-7(c)(1)]

(iii) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [40 CFR 60.482-7(c)(2)]

(iv) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-7(d)(1)]

(v) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-7(d)(2)]

(vi) First attempts at repair include, but are not limited to, the following best practices where practicable: tightening of bonnet bolts; replacement of bonnet bolts; tightening of packing gland nuts; and injection of lubricant into lubricated packing. [40 CFR 60.482-7(e)]

(vii) Any valve that is designated, as described in 40 CFR 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-7(a) if the valve:

(A) Has no external actuating mechanism in contact with the process fluid, [40 CFR 60.482-7(f)(1)]

(B) Is operated with emissions less than 500 ppm above background as determined by the method specified in 40 CFR 60.485(c), and [40 CFR 60.482-7(f)(2)]

(C) Is tested for compliance with 40 CFR 60.482-7(f)(2) initially upon designation, annually, and at other times requested by EPA. [40 CFR 60.482-7(f)(3)]

(viii) Any valve that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if the Permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-7(a), and the Permittee adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [40 CFR 60.482-7(g)]

(ix) Any valve that is designated, as described in 40 CFR 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if:

(A) The Permittee of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface. [40 CFR 60.482-7(h)(1)]

(B) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the Permittee designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and [40 CFR 60.482-7(h)(2)]

(C) The Permittee of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 60.482-7(h)(3)]

(7) PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS.

(i) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. [40 CFR 60.482-8(a)]

(ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-8(b)]

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-8(c)(1)]

(iv) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-8(c)(2)]

(v) First attempts at repair include, but are not limited to, the best practices described under 40 CFR 60.482-7(e). [40 CFR 60.482-8(d)]

(8) CLOSED VENT SYSTEMS AND CONTROL DEVICES.

(i) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater or to an exit concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 60.482-10(b)]

(ii) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C. [40 CFR 60.482-10(c)]

(iii) Flares shall comply with the requirements of 40 CFR 60.18. [40 CFR 60.482-10(d)]

(iv) The Permittee of control devices shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.482-10(e)]

(v) Except as provided in 40 CFR 60.482-10(i) through 40 CFR 60.482-10(k), each closed vent system shall be inspected according to the procedures and schedule specified in 40 CFR 60.482-10(f)(1) and 40 CFR 60.482-10(f)(2). [40 CFR 60.482-10(f)]

(A) If the vapor collection system or closed vent system is constructed of hard-piping, the Permittee shall conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and conduct annual visual inspections for visible, audible, or olfactory indications of leaks. [40 CFR 60.482-10(f)(1)]

(B) If the vapor collection system or closed vent system is constructed of ductwork, the Permittee shall conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and conduct annual inspections according to the procedures in 40 CFR 60.485(b). [40 CFR 60.482-10(f)(2)]

(vi) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in 40 CFR 60.482-10(h). [40 CFR 60.482-10(g)]

(A) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 60.482-10(g)(1)]

(B) Repair shall be completed no later than 15 calendar days after the leak is detected. [40 CFR 60.482-10(g)(2)]

(vii) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the Permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [40 CFR 60.482-10(h)]

(viii) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2). [40 CFR 60.482-10(i)]

(ix) Any parts of the closed vent system that are designated as described in 40 CFR 60.482-10(l)(1), as unsafe to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2) if they comply with the requirements specified in 40 CFR 60.482-10(j)(1) and 40 CFR 60.482-10 (j)(2): [40 CFR 60.482-10(j)]

(A) The Permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with 40 CFR 60.482-10(f)(1)(i) or 40 CFR 60.482-10(f)(2); and [40 CFR 60.482-10(j)(1)]

(B) The Permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times. [40 CFR 60.482-10(j)(2)]

(x) Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(2), as difficult to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2) if they comply with the requirements specified in of 40 CFR 60.482-10(k)(1) through 40 CFR 60.482-10(k)(3): [40 CFR 60.482-10(k)]

(A) The Permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and [40 CFR 60.482-10(k)(1)]

(B) The process unit within which the closed vent system is located becomes an affected facility through 40 CFR 60.14 or 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and [40 CFR 60.482-10(k)(2)]

(C) The Permittee has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum. [40 CFR 60.482-10(k)(3)]

(xi) Closed vent systems and control devices shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)]

(9) ALTERNATIVE STANDARDS FOR VALVES

(i) The Permittee may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent. [40 CFR 60.483-1(a)]

(ii) The following requirements shall be met if the Permittee wishes to comply with an allowable percentage of valves leaking:

(A) The Permittee must notify the EPA Administrator and AMS that the Permittee has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard. [40 CFR 60.483-1(b)(1)]

(B) A performance test as specified in 40 CFR 60.483-1(c) shall be conducted initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.483-1(b)(2)]

(C) If a valve leak is detected, it shall be repaired in accordance with 40 CFR 60.482-7(d) and 40 CFR 60.482-7(e). [40 CFR 60.483-1(b)(3)]

(iii) Performance tests shall be conducted in the following manner:

(A) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in 40 CFR 60.485(b). [40 CFR 60.483-1(c)(1)]

(B) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.483-1(c)(2)]

(C) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility. [40 CFR 60.483-1(c)(3)]

(iv) The Permittee who elects to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent. [40 CFR 60.483-1(d)]

(v) ALTERNATIVE STANDARDS FOR VALVES-SKIP PERIOD LEAK DETECTION AND REPAIR.

(A)(1) The Permittee may elect to comply with one of the alternative work practices specified in 40 CFR 60.483-2(b)(2) and 40 CFR 60.483-2(b)(3). [40 CFR 60.483-2(a)]

(2) The Permittee must notify EPA before implementing one of the alternative work practices, as specified in 40 CFR 60.487(d). [40 CFR 60.483-2(a)(2)]

(B)(1) The Permittee shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in 40 CFR 60.482-7. [40 CFR 60.483-2(b)(1)]

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, a Permittee may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)(2)]

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)(3)]

(4) If the percent of valves leaking is greater than 2.0, the Permittee shall comply with the requirements as described in 40 CFR 60.482-7 but can again elect to use 40 CFR 60.483-2. [40 CFR 60.483-2(b)(4)]

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of 40 CFR 60.483-2. [40 CFR 60.483-2(b)(5)]

(6) The Permittee must keep a record of the percent of valves found leaking during each leak detection period. [40 CFR 60.483-2(b)(6)]

(10) DELAY OF REPAIR.

(i) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit. [40 CFR 60.482-9(a)]

(ii) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service. [40 CFR 60.482-9(b)]

Delay of repair for valves will be allowed if:

(A) The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and [40 CFR 60.482-9(c)(1)]

(B) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10. [40 CFR 60.482-9(c)(2)]

(iii) Delay of repair for pumps will be allowed if:

(A) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and [40 CFR 60.482-9(d)(1)]

(B) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected. [40 CFR 60.482-9(d)(2)]

(iv) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]

(11) The Permittee shall use the definitions provided in the Federal New Source Performance Standards (NSPS) to designate streams subject to monitoring in order to comply with 25 PA Code §129.58. The testing and monitoring requirements specified in 25 PA Code §129.58 are applied to sources that handle gas or “light” liquids (meeting the definition of 40 CFR 60.485(e)). Heavy liquid shall be monitored based on visual, audible, or olfactory means of detection. A source is considered to be in VOC service if it contacts or contains a gas or liquid that has at least 10% VOC by weight. [AMS Letter dated May 30, 2000, 25 PA Code §129.58(g)]

(12) The Permittee is required to comply with AMR V. Sec. XIII that prohibits the emissions of VOC in a liquid state at the point(s) of discharge into the atmosphere. [AMS Letter dated May 30, 2000 and AMR V. Sec. XIII.A.2.]

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee shall determine compliance with the standards in 40 CFR 60.482, 40 CFR 60.483, and 40 CFR 60.484 as follows: [40 CFR 60.485(b)]

(i) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: [40 CFR 60.485(b)(1)]

(A) Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 60.485(b)(1)(i)]

(B) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)(1)(ii)]

(2) The Permittee shall determine compliance with the no detectable emission standards in 40 CFR 60.482-2(e), 40 CFR 60.482-3i, 40 CFR 60.482-4, 40 CFR 60.482-7(f), and 40 CFR 60.482-10(e) as follows: [40 CFR 60.485(c)]

(i) The requirements of 40 CFR 60.485(b) shall apply. [40 CF 60.485(c)(1)]

(ii) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)(2)]

(3) The Permittee shall test each piece of equipment unless he demonstrates that a process unit is not in VOC series, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: [40 CFR 60.485(d)]

(i) Procedures that conform to the general methods in ASTM E-260, E-168, E-169 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment. [40 CFR 60.485(d)(1)]

(ii) Organic compounds that are considered by the EPA Administrator and AMS to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid. [40 CFR 60.485(d)(2)]

(iii) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the EPA Administrator and AMS disagrees with the judgment, 40 CFR 60.486(d)(1) and (2) shall be used to resolve the disagreement. [40 CFR 60.485(d)(3)]

(4) The Permittee shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(i) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20^{o} C. Standard reference texts or ASTM D-2879 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the vapor pressures. [40 CFR 60.485(e)(1)]

(ii) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20^{o} C is equal to or greater than 20 percent by weight. [40 CFR 60.485(e)(2)]

(iii) The fluid is a liquid at operating conditions. [40 CFR 60.485(e)(3)]

(5) Samples used in conjunction with 40 CFR 60.486(d), (e), and (g) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)]

(6) The Permittee shall determine compliance with the standards of flares as follows: [40 CFR 60.485(g)]

(i) Method 22 shall be used to determine visible emissions. [40 CFR 60.485(g)(1)]

(ii) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare. [40 CFR 60.485(g)(2)]

(iii) The maximum permitted velocity (V_{max}) for air-assisted flares shall be computed using the following equation: [40 CFR 60.485(g)(3)]

$V_{max} = 8.706+0.7084H_T$

Where:

V_{max} = maximum permitted velocity, m/sec

H_T = net heating value of the gas being combusted, MJ/scm.

(iv) The net heating value (H_T) of the gas being combusted in a flare shall be computed as follows: [40 CFR 60.485(g)(4)]

$H_T = K C_i H_i$

Where:

K = conversion constant, 1.740*10^7 [(g-mole)(MJ)]/[(ppm)(scm)(kcal)]

C_i = concentration of sample component “I”, ppm.

H_i = net heat of combustion of sample component “I” at 25^o C and 760 mm HG, kcal/g-mole

(v) Method 18 and ASTM D 2504-67 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the concentration of sample component “i.” [40 CFR 60.485(g)(5)]

(vi) ASTM D 2382-76 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the net heat of combustion of component “i” if published values are not available or cannot be calculated. [40 CFR 60.485(g)(6)]

(vii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used. [40 CFR 60.485(g)(7)]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of more than one affected facility may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility. [40 CFR 60.486(a)(2)]

(2) When each leak is detected, as specified in 40 CFR 60.482-2, 40 CFR 60-482-3, 40 CFR 60.482-7, 40 CFR 60.482-8, and 40 CFR 60.483-2, the following requirements apply: [40 CFR 60.486(b)]

(i) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. [40 CFR 60.486(b)(1)]

(ii) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months. [40 CFR 60.486(b)(2)]

(iii) The identification on equipment except on a valve, may be removed after it has been repaired. [40 CFR 60.486(b)(3)]

(3) When each leak is detected as specified in 40 CFR 60.482-2, 40 CFR 60-482-3, 40 CFR 60.482-7, 40 CFR 60.482-8, and 40 CFR 60.483-2, the following information shall be recorded in a log and shall be kept for 5 years in a readily accessible location: [40 CFR 60.486(c)]

(i) The instrument and operator identification numbers and the equipment identification number. [40 CFR 60.486(c)(1)]

(ii) The date the leak was detected and the dates of each attempt to repair the leak. [40 CFR 60.486(c)(2)]

(iii) Repair methods applied in each attempt to repair the leak. [40 CFR 60.486(c)(3)]

(iv) "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm. [40 CFR 60.486(c)(4)]

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [40 CFR 60.486(c)(5)]

(vi) The signature of the individual whose decision it was that repair could not be effected without a process shutdown. [40 CFR 60.486(c)(6)]

(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days. [40 CFR 60.486(c)(7)]

(viii) Dates of process unit shutdown that occur while the equipment is unrepaired. [40 CFR 60.486(c)(8)]

(ix) The date of successful repair of the leak. [40 CFR 60.486(c)(9)]

(4) The following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR 60.482-10 shall be recorded and kept in a readily accessible location: [40 CFR 60.486(d)]

(i) Detailed schematics, design specifications, and piping and instrumentation diagrams. [40 CFR 60.486(d)(1)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.486(d)(2)]

(iii) A description of the parameter or parameters monitored, as required in 40 CFR 60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 60.486(d)(3)]

(iv) Periods when the closed vent systems and control devices required in 40 CFR 60.482-2, 40 CFR 60.482-3, 40 CFR 60.482-2, 40 CFR 60.482-5 are

not operated as designed, including periods when a flare pilot light does not have a flame. [40 CFR 60.486(d)(4)]

(v) Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR 60.482-2, 40 CFR 60.482-3, 40 CFR 60.482-2, 40 CFR 60.482-5. [40 CFR 60.486(d)(5)]

(vi) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. [40 CFR 60.482-10(l)(1)]

(vii) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. [40 CFR 60.482-10(l)(2)]

(viii) For each inspection during which a leak is detected, a record of the information specified in 40 CFR 60.486(c) [40 CFR 60.482-10(l)(3)].

(ix) For each inspection conducted in accordance with 40 CFR 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)(4)]

(x) For each visual inspection during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)(5)]

(5) The following information pertaining to all equipment subject to the requirements in 40 CFR 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(e)]

(i) A list of identification numbers for subject equipment. [40 CFR 60.486(e)(1)]

(ii) A list of identification numbers for equipment that are designated for no detectable emissions. [40 CFR 60.486(e)(2)(i)]

(iii) The designation of equipment as subject to the requirements 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), and 40 CFR 60.482-7(f) shall be signed by the Permittee. [40 CFR 60.486(e)(2)(ii)]

(iv) A list of equipment identification numbers for pressure relief devices in gas/vapor service required to comply with 40 CFR 60.482-4. [40 CFR 60.486(e)(3)]

(v) The dates of each compliance test as required in 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), 40 CFR 60.482-4, and 40 CFR 60.482-7(f). [40 CFR 60.486(e)(4)(i)]

(vi) The background level measured during each compliance test. [40 CFR 60.486(e)(4)(ii)]

(vii) The maximum instrument reading measured at the equipment during each compliance test. [40 CFR 60.486(e)(4)(iii)]

(viii) A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)(5)]

(ix) The following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and 40 CFR 60.482-7(h) shall be

recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(f)]

(x) A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the valve is unsafe-to-monitor, and the plan for monitoring each valve. [40 CFR 60.486(f)(1)]

(xi) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each value. [40 CFR 60.486(f)(2)]

(6) The following information shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(h)]

(i) Design criterion required in 40 CFR 60.482-2(d)(5) and 40 CFR 60.482-3(e)(2) and explanation of the design criterion; and [40 CFR 60.486(h)(1)]

(ii) Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)(2)]

(7) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in 40 CFR 60.480(d): [40 CFR 60.486(i)]

(i) An analysis demonstrating the design capacity of the affected facility, [40 CFR 60.486(i)(1)]

(ii) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and [40 CFR 60.486(i)(2)]

(iii) An analysis demonstrating that equipment is not in VOC service. [40 CFR 60.486(i)(3)]

(8) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)]

(9) The provisions of 40 CFR 60.7(b) and 40 CFR 60.7(d) do not apply to affected facilities subject to 40 CFR 60.486. [40 CFR 60.486(k)]

(10) The signature of the Permittee (or designate) whose decision it was that a repair could not be effected without a process shutdown is not required to be recorded. Instead, the name of the person whose decision it was that a repair could not be effected without a process shutdown shall be recorded and retained for 2 years. [40 CFR 63.655(d)(1)(i)]

(d) Reporting Requirements

(1) The Permittee subject to the provisions of 40 CFR 60 Subpart VV shall submit semiannual reports to EPA and AMS beginning six months after the initial start-up date. [40 CFR 60.487(a)]

(2) The initial semiannual report to EPA shall include the following information: [40 CFR 60.487(b)]

(i) Process unit identification. [40 CFR 60.487(b)(1)]

(ii) Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f). [40 CFR 60.482-7(b)(2)]

(iii) Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f). [40 CFR 60.487(b)(3)]

(iv) Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR 60.482-3(i) and those compressors complying with 40 CFR 60.482-3(h). [40 CFR 60.487(b)(4)]

(3) All semiannual reports to EPA shall include the following information, summarized from the information in 40 CFR 60.486: [40 CFR 60.487(c)]

(i) Process unit identification. [40 CFR 60.487(c)(1)]

(ii) For each month during the semiannual reporting period:

(A) Number of valves for which leaks were detected as described in 40 CFR 60.482(7)(b) or 40 CFR 60.483-2, [40 CFR 60.487(c)(2)(i)]

(B) Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1), [40 CFR 60.487(c)(2)(ii)]

(C) Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and 40 CFR 60.482-2(d)(6)(i), [40 CFR 60.487(c)(2)(iii)]

(D) Number of pumps for which leaks were not repaired as required in 40 CFR 60.482-2(c)(1) and 40 CFR 60.482-2(d)(6)(ii), [40 CFR 60.487(c)(2)(iv)]

(E) Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f), [40 CFR 60.487(c)(2)(v)]

(F) Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1), and [40 CFR 60.487(c)(2)(vi)]

(G) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible. [40 CFR 60.487(c)(2)(vii)]

(iii) Dates of process unit shutdowns which occurred within the semiannual reporting period. [40 CFR 60.487(c)(3)]

(iv) Revisions to items reported according to 40 CFR 60.487(b) if changes have occurred since the initial report or subsequent revisions to the initial report. [40 CFR 60.487(c)(4)]

(4) The Permittee electing to comply with the provisions of 40 CFR 60.483-1 or 40 CFR 60.483-2 shall notify EPA Administrator and AMS of the alternative standard selected 90 days before implementing either of the provisions. [40 CFR 60.487(d)]

8. Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components, Subject to 40 CFR 63 Subpart H

[40 CFR 63.160-182; 25 Pa Code 129.58; AMR V Section XIII A & E, and 40 CFR 63.648(c)]

Refer to Summary Table in Section D.7. that summarizes leak detection and repair regulatory applicabilities for individual components within each process unit of the refinery.

(a) Work Practice Standards

(1) PUMPS. The Permittee shall monitor each pump (in light liquid service) monthly to detect leaks by the method specified in 40 CFR 63.180(b) and shall comply with the requirements of 40 CFR 63.180(a) through 40 CFR 63.180(d), except as provided in 40 CFR 63.162(b) and 40 CFR 63.180(e) through 40 CFR 63.180(j). [40 CFR 63.163(b)(1)]

(2) The instrument reading, as determined by the method as specified in 40 CFR 63.180(b), that defines a leak 1,000 parts per million or greater for all pumps. [40 CFR 63.163(b)(2)(iii)(C)]

(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected. [40 CFR 63.163(b)(3)]

(4) PUMP REPAIRS.

(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 63.163(c)(3) or 40 CFR 63.171. [40 CFR 63.163(c)(1)]

(ii) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable: [40 CFR 63.163(c)(2)]

(A) Tightening of packing gland nuts. [40 CFR 63.163(c)(2)(i)]

(B) Ensuring that the seal flush is operating at design pressure and temperature. [40 CFR 63.163(c)(2)(ii)]

(iii) Repair is not required unless an instrument reading of 2,000 parts per million or greater is detected. [40 CFR 63.163(c)(3)]

(5) LEAKING PUMPS.

(i) The Permittee shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the Permittee has decided, all subsequent percent calculations shall be made on the same basis. [40 CFR 63.163(d)(1)]

(ii) If the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak is calculated on a 6-month rolling average, the Permittee shall implement a quality improvement program for pumps that complies with the requirements of 40 CFR 63.176. [40 CFR 63.163(d)(2)]

(iii) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only. [40 CFR 63.163(d)(3)]

(iv) Percent leaking pumps shall be determined by the following equation [40 CFR 63.163(d)(4)]:

$$\%P_L=((P_L-P_S)/(P_T-P_S))\times 100$$

where:

$\%P_L$=Percent leaking pumps

P_L=Number of pumps found leaking as determined through monthly monitoring.

P_T=Total pumps in organic HAP service, including those meeting the criteria in 40 CFR 63.163(d)(6) and 40 CFR 63.163(d)(7).

P_S=Number of pumps leaking within 1 month of start-up during the current monitoring period.

(6) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 63.163(a) through 40 CFR 63.163(d), provided the following requirements are met: [40 CFR 63.163(e)]

(i) Each dual mechanical seal system is:

(A) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 63.163(e)(1)(i)]

(B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of 40 CFR 63.172; or [40 CFR 63.163(e)(1)(ii)]

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream. [40 CFR 63.163(e)(1)(iii)]

(ii) The barrier fluid is not in light liquid service. [40 CFR 63.163(e)(2)]

(iii) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 63.163(e)(3)]

(iv) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. [40 CFR 63.163(e)(4)]

(A) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in 40 CFR 63.180(b) to determine if there is a leak of organic HAP in the barrier fluid. [40 CFR 63.163(e)(4)(i)]

(B) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected. [40 CFR 63.163(e)(4)(ii)]

(v) Each sensor as described in 40 CFR 63.163(e)(3) is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site. [40 CFR 63.163(e)(5)]

(vi) PRESENCE OF DRIPS.

(A) The Permittee determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 63.163(e)(6)(i)]

(B) If indications of liquids dripping from the pump seal exceed the criteria established in 40 CFR 63.163(5)(6)(i), or if, based on the criteria established in 40 CFR 63.163(5)(6)(i), the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected. [40 CFR 63.163(e)(6)(ii)].

(C) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 63.171. [40 CFR 63.163(e)(6)(iii)]

(D) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.163(e)(6)(iv)]

(7) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of 40 CFR 63.163(a) through 40 CFR 63.163(c). [40 CFR 63.163(f)]

(8) Any pump equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of 40 CFR 63.172 is exempt from the requirements of 40 CFR 63.163(b) through 40 CFR 63.163(e). [40 CFR 63.163(g)]

(9) If more than 90 percent of the pumps at a process unit meet the criteria in either 40 CFR 63.163(e) or 40 CFR 63.163(f)., the process unit is exempt from the requirements of 40 CFR 63.163(d). [40 CFR 63.163(i)]

(10) Any pump that is designated, as described in 40 CFR 63.181(b)(7)(i), as an unsafe-to-monitor pump is exempt from the requirements of 40 CFR 63.163(b) through 40 CFR 63.163(e) if:

(i) The Permittee determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.163(b) through 40 CFR 63.163(d). [40 CFR 63.163(j)(1)]; and

(ii) The Permittee has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable. [40 CFR 63.163(j)(2)]

(11) PRESSURE RELIEF DEVICES. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in 40 CFR 63.165(b), as measured by the method specified in 40 CFR 63.180(c). [40 CFR 63.165(a)]

(i) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171. [40 CFR 63.165(b)(1)]

(ii) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in 40 CFR 63.180(c). [40 CFR 63.165(b)(2)]

(12) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in 40

CFR 63.172 is exempt from the requirements of 40 CFR 63.165(a) and 40 CFR 63.165(b). [40 CFR 63.165(c)]

(13) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of 40 CFR 63.165(a) and 40 CFR 63.165(b), provided the Permittee complies with the requirements in 40 CFR 63.165(d)(2). [40 CFR 63.165(d)(1)]

(14) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171. [40 CFR 63.165(d)(2)]

(15) SAMPLING CONNECTION SYSTEMS. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR 63.162(b). Gases displaced during filling of the sample container are not required to be collected or captured. [40 CFR 63.166(a)]

(16) Each closed-purge, closed-loop, or closed-vent system as required in 40 CFR 63.166(a) shall: [40 CFR 63.166(b)]

(i) Return the purged process fluid directly to the process line; or [40 CFR 63.166(b)(1)]

(ii) Collect and recycle the purged process fluid to a process; or [40 CFR 63.166(b)(2)]

(iii) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of 40 CFR 63.172; or [40 CFR 63.166(b)(3)]

(iv) Collect, store, and transport the purged process fluid to a system or facility identified in 40 CFR 63.166(b)(4)(i), 40 CFR 63.166(b)(4)(ii), or 40 CFR 63.166(b)(4)(iii)]. [40 CFR 63.166(b)(4)]

(A) A waste management unit as defined in 40 CFR 63.111 of subpart G of 40 CFR 63, if the waste management unit is subject to, and operated in compliance with the provisions of subpart G of 40 CFR 63 applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of subpart G of 40 CFR 63, the waster management unit need not be subject to, and operated in compliance with the requirements of 40 CFR 63, subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility. [40 CFR 63.166(b)(4)(i)]

(B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or [40 CFR 63.166(b)(4)(ii)]

(C) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261. [40 CFR 63.166(b)(4)(iii)]

(17) VALVES IN GAS/VAPOR SERVICE AND IN LIGHT LIQUID SERVICE. The provisions of this section apply to valves that are either in gas service or in light liquid service. The valves shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b). The instrument reading that defines a

leak is an instrument reading of 500 parts per million or greater. [40 CFR 63.168(a), 40 CFR 63.168(b)(1) and 40 CFR 63.168(b)(2)(iii)]

(18) The Permittee shall monitor valves for leaks at the intervals specified below: [40 CFR 63.168(d)]

(i) At process units with 2 percent or greater leaking valves, calculated according to 40 CFR 63.168(e), the Permittee shall monitor each valve once per month. [40 CFR 63.168(d)(1)(i)]

(ii) At process units with less than 2 percent leaking valves, the Permittee shall monitor each valve once each quarter, except as provided in 40 CFR 63.168(d)(3) and 40 CFR 63.168(d)(4). [40 CFR 63.168(d)(2)]

(iii) At process units with less than 1 percent leaking valves, the Permittee may elect to monitor each valve once every 2 quarters. [40 CFR 63.168(d)(3)]

(iv) At process units with less than 0.5 percent leaking valves, the Permittee may elect to monitor each valve once every 4 quarters. [40 CFR 63.168(d)(4)]

(19) Percent leaking valves at a process unit shall be determined by the following equation: [40 CFR 63.168(e)(1)]

$$\%V_L=(V_L/(V_T+ V_C))\times 100$$

where:

$\%V_L$=Percent leaking valves as determined through periodic monitoring required in 40 CFR 63.168(b) through 40 CFR 63.168(d).

V_L=Number of valves found leaking excluding nonrepairables as provided in 40 CFR 63.168(e)(3)(i).

V_T=Total valves monitored, in a monitoring period excluding valves monitored as required by 40 CFR 63.168(f)(3).

V_C=Optional credit for removed valves=0.67 × net number (i.e., total removed-total added) of valves in organic HAP service removed from process unit after the date set forth in 40 CFR 63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then V_C=0.

(20) For use in determining monitoring frequency, as specified 40 CFR 63.168(d), the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs. [40 CFR 63.168(e)(2)]

(21) NONREPAIRABLE VALVES.

(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with 40 CFR 63.168(e)(3)(ii). Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods. [40 CFR 63.168(e)(3)(i)]

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves [40 CFR 63.168(e)(3)(ii)].

(22) LEAKING VALVES.

(i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.171. [40 CFR 63.168(f)(1)]

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.168(f)(2)]

(iii) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. [40 CFR 63.168(f)(3)]

(A) The monitoring shall be conducted using as specified in 40 CFR 63.180(b) and 40 CFR 63.180(c), as appropriate, to determine whether the valve has resumed leaking. [40 CFR 63.168(f)(3)(i)]

(B) Periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d) may be used to satisfy the requirements of 40 CFR 63.168(f)(3), if the timing of the monitoring period coincides with the time specified in 40 CFR 63.168(f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of 40 CFR 63.168(f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in 40 CFR 63.168(f)(3). [40 CFR 63.168(f)(3)(ii)]

(C) If a leak is detected by monitoring that is conducted pursuant to 40 CFR 63.168(f)(3), the Permittee shall follow the provisions of 40 CFR 63.168(f)(3)(iii)(A) and 40 CFR 63.168(f)(3)(iii)(B), to determine whether that valve must be counted as a leaking valve for purposes of 40 CFR 63.168(e). [40 CFR 63.168(f)(3)(iii)]

(1) If the Permittee elected to use periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d) to satisfy the requirements of 40 CFR 63.168(f)(3), then the valve shall be counted as a leaking valve. [40 CFR 63.168(f)(3)(iii)(A)]

(2) If the Permittee elected to use other monitoring, prior to the periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d), to satisfy the requirements of 40 CFR 63.168(f)(3), then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking. [40 CFR 63.168(f)(3)(iii)(B)]

(23) First attempts at repair include, but are not limited to, the following practices where practicable: [40 CFR 63.168(g)]

(i) Tightening of bonnet bolts, [40 CFR 63.168(g)(1)]

(ii) Replacement of bonnet bolts, [40 CFR 63.168(g)(2)]

(iii) Tightening of packing gland nuts, and [40 CFR 63.168(g)(3)]

(iv) Injection of lubricant into lubricated packing. [40 CFR 63.168(g)(4)]

(24) Any valve that is designated, as described in 40 CFR 63.181(b)(7)(i), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 63.168(b) through 40 CFR 63.168(f), if: [40 CFR 63.168(h)]

(i) The Permittee determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.168(b) through 40 CFR 63.168(d); and [40 CFR 63.168(h)(1)]

(ii) The Permittee has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable. [40 CFR 63.168(h)(2)]

(25) Any valve that is designated, as described in 40 CFR 63.181(b)(7)(ii), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 63.168(b) through 40 CFR 63.168(d) if: [40 CFR 63.168(h)(2)(i)]

(i) The Permittee of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner; [40 CFR 63.168(i)(1)]

(ii) The process unit within which the valve is located is an existing source or the Permittee designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and [40 CFR 63.168(i)(2)]

(iii) The Permittee of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 63.168(i)(3)]

(26) CONNECTORS IN GAS/VAPOR AND LIGHT LIQUID SERVICE. The Permittee shall monitor all connectors in gas/vapor and light liquid service, except as provided in 40 CFR 63.162(b) and in 40 CFR 63.174(f) through 40 CFR 63.174(h) at the intervals specified in 40 CFR 63.174(b). [40 CFR 63.174(a)]

(27) The connectors shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b). [40 CFR 63.174(a)(1)]

(28) If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected. [40 CFR 63.174(a)(2)]

(29) The Permittee shall monitor for leaks at the intervals specified in either 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2) and in 40 CFR 63.174(b)(3). [40 CFR 63.174(b)]

(i) For each group of process units within an existing source, by no later than 12 months after the compliance date, the Permittee shall monitor all connectors, except as provided in 40 CFR 63. 174(f) through 40 CFR 63. 174(h). [40 CFR 63.174(b)(1)]

(ii) After conducting the initial survey required in 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2), the Permittee shall perform all subsequent monitoring of connectors at the frequencies specified in 40 CFR 63.174(b)(3)(I) through 40 CFR 63.174(b)(3)(v), except as provided in 40 CFR 63.174(c)(2): [40 CFR 63.174(b)(3)]

(A) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period. [40 CFR 63.174(b)(3)(i)]

(B) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The Permittee may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period. [40 CFR 63.174(b)(3)(ii)]

(C) If the Permittee of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the Permittee may monitor the connectors one time every 4 years. A Permittee may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years. [40 CFR 63.174(b)(3)(iii)]

(D) If a process unit complying with the requirements of 40 CFR 63.174(b) using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the Permittee shall increase the monitoring frequency to one time every 2 years. The Permittee may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The Permittee may again elect to use the provisions of 40 CFR 63.174(b)(3)(iii) when the percent leaking connectors decreases to less than 0.5 percent. [40 CFR 63.174(b)(3)(iv)]

(E) If a process unit complying with requirements of 40 CFR 63.174(b)(3)(iii) using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the Permittee shall increase the monitoring frequency to one time per year. The Permittee may again elect to use the provisions of 40 CFR 63.174(b)(3)(iii) when the percent leaking connectors decreases to less than 0.5 percent. [40 CFR 63.174(b)(3)(v)]

(30) NONREPAIRABLE CONNECTORS.

(i) Except as provided in 40 CFR 63.174(c)(1)(ii), each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of 40 CFR 63.174(d), unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of 40 CFR 63.174(i)(2). [40 CFR 63.174(c)(1)(i)]

(ii) As an alternative to the requirements in 40 CFR 63.174(c)(1)(i), the Permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the Permittee may not count

nonrepairable connectors for the purposes of 40 CFR 63.174(i)(2). The Permittee shall calculate the percent leaking connectors for the monitoring periods described in 40 CFR 63.174(b), by setting the nonrepairable component, C_{AN}, in the equation in 40 CFR 63.174(i)(2) to zero for all monitoring periods. [40 CFR 63.174(c)(1)(ii)]

(iii) The Permittee may switch alternatives described in 40 CFR 63.174(c)(1)(i) and 40 CFR 63.174(c)(1)(ii) at the end of the current monitoring period he is in, provided that it is reported as required in 40 CFR 63.182 and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch. [40 CFR 63.174(c)(1)(iii)]

(31) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.174(g) and 40 CFR 63.171. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 63.174(d)]

(32) Any connector that is designated, as described in 40 CFR 63.181(b)(7)(i) as an unsafe-to-monitor connector is exempt from the requirements of 40 CFR 63.174(a) if: [40 CFR 63.174(f)]

(i) The Permittee determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with 40 CFR 63.174(a) through 40 CFR 63.174(e); and [40 CFR 63.174(f)(1)]

(ii) The Permittee has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable. [40 CFR 63.174(f)(2)]

(33) Any connector that is designated, as described in 40 CFR 63.181(b)(7)(iii), as an unsafe-to-repair connector is exempt from the requirements of 40 CFR 63.174(a), 40 CFR 63.174(d), and 40 CFR 63.174(e) if:

(i) The Permittee determines that repair personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.174(d); and [40 CFR 63.174(g)(1)]

(ii) The connector will be repaired before the end of the next scheduled process unit shutdown. [40 CFR 63.174(g)(2)]

(34) INACCESSIBLE CONNECTORS.

(i) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of 40 CFR 63.174(a) and 40 CFR 63.174(c). [40 CFR 63.174(h)(1)]

(ii) An inaccessible connector is one that is:

(A) Buried [40 CFR 63.174(h)(1)(i)];

(B) Insulated in a manner that prevents access to the connector by a monitor probe [40 CFR 63.174(h)(1)(ii)];

(C) Obstructed by equipment or piping that prevents access to the connector by a monitor probe [40 CFR 63.174(h)(1)(iii)];

(D) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground [40 CFR 63.174(h)(1)(iv)];

(E) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold [40 CFR 63.174(h)(1)(v)]; or

(F) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment. [40 CFR 63.174(h)(1)(vi)]

(ii) If any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.171 and 40 CFR 63.174(g). [40 CFR 63.174(h)(2)]

(iii) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 63.174(h)(3)]

(35) For use in determining the monitoring frequency, as specified in 40 CFR 63.174(b), the percent leaking connectors shall be calculated as specified in 40 CFR 63.174(i)(1) and 40 CFR 63.174(i)(2). [40 CFR 63.174(i)]

(i) For the first monitoring period, use the following equation: [40 CFR 63.174(i)(1)]

$\% C_L = C_L/(C_t + C_C) \times 100$

where:

$\% C_L$= Percent leaking connectors as determined through periodic monitoring required in 40 CFR 63.174(a) and 40 CFR 63.174(b).

C_L= Number of connectors measured at 500 parts per million or greater.

C_t= Total number of monitored connectors in the process unit.

C_C= Optional credit for removed connectors = 0.67 × net (i.e., total removed—total added) number of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C= 0.

(ii) For subsequent monitoring periods, use the following equation [40 CFR 63.174(i)(2)]:

$\% C_L = [(C_L - CAN)/(C_t + C_C)] \times 100$

where:

$\% C_L$= Percent leaking connectors as determined through periodic monitoring required in 40 CFR 63.174(a) and 40 CFR 63.174(b).

C_L= Number of connectors, including nonrepairables, measured at 500 parts per million or greater.

C_{AN}= Number of allowable nonrepairable connectors, as determined by monitoring required in 40 CFR 63.174(b)(3) and 40 CFR 63.174(c), not to exceed 2 percent of the total connector population, C_t.

C_t= Total number of monitored connectors, including nonrepairables, in the process unit.

C_C= Optional credit for removed connectors = 0.67 × net number (i.e., total removed—total added) of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C= 0.

(36) PUMPS, VALVES, CONNECTORS, AND AGITATORS IN HEAVY LIQUID SERVICE; INSTRUMENTATION SYSTEMS; AND PRESSURE RELIEF DEVICES IN LIQUID SERVICE. Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in 40 CFR 63.180(b) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in 40 CFR 63.169(c) and 40 CFR 63.169(d), it is not necessary to monitor the system for leaks by the method specified in 40 CFR 63.180(b). [40 CFR 63.169(a)]

(37) If an instrument reading of 10,000 parts per million or greater for agitators, 2,000 parts per million or greater for pumps, or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected. [40 CFR 63.169(b)]

(38) REPAIRS.

(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected. [40 CFR 63.169(c)]

(ii) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.169(c)(2)]

(iii) For equipment identified in 40 CFR 63.169(a) that is not monitored by the method specified in 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure. [40 CFR 63.169(c)(3)]

(iv) First attempts at repair include, but are not limited to, the practices described under 40 CFR 63.163(c)(2) and 40 CFR 63.168(g), for pumps and valves, respectively. [40 CFR 63.169(d)]

(b) Testing Requirements

[25 PA Code §139]

(1) Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(b)(1)]

(2) Except as provided for in 40 CFR 63.180(b)(2)(ii), the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method

21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted. [40 CFR 63.180(b)(2)(i)]

(3) If no instrument is available at the plant site that will meet the performance criteria specified in 40 CFR 63.180(b)(2)(i), the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in 40 CFR 63.180(b)(2)(i). [40 CFR 63.180(b)(2)(ii)]

(4) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(b)(3)]

(5) Calibration gases shall be:

(i) Zero air (less than 10 parts per million of hydrocarbon in air) [40 CFR 63.180(b)(4)(i)]; and

(ii) Mixtures of methane in air at the concentrations specified in 40 CFR 63.180(b)(4)(ii)(A) through 40 CFR 63.180(b)(4)(ii)(C). A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in 40 CFR 63.180(b)(2)(i). In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air. [40 CFR 63.180(b)(4)(ii)]

(iii) A mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 1,000 parts per million for pumps; and 500 parts per million for all other equipment, except as provided in 40 CFR 63.180(b)(5)(iii). [40 CFR 63.180(b)(4)(ii)(C)]

(6) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the Permittee need not calibrate the scales that will not be used during that day's monitoring. [40 CFR 63.180(b)(4)(iii)]

(7) When equipment is monitored for compliance as required in 40 CFR 63.164(i), 63.165(a), and 63.172(f) or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by subpart H of 40 CFR 63, the Permittee may elect to adjust or not to adjust the instrument readings for background. If the Permittee elects to not adjust instrument readings for

background, the Permittee shall monitor the equipment according to the procedures specified in 40 CFR 63.180(b)(1) through 40 CFR 63.180(b)(4). In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If the Permittee elects to adjust instrument readings for background, the Permittee shall monitor the equipment according to the procedures specified in 40 CFR 63.180(c)(1) through 40 CFR 63.180(c)(4). [40 CFR 63.180(c)]

(i) The requirements of 40 CFR 63.180(b)(1) through 40 CFR 63.180(b)(4) shall apply. [40 CFR 63.180(c)(1)]

(ii) The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking. [40 CFR 63.180(c)(2)]

(iii) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(c)(3)]

(iv) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance. [40 CFR 63.180(c)(4)]

(8) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used. [40 CFR 63.180(d)(1)]

(9) A Permittee may use good engineering judgment rather than the procedures in 40 CFR 63.180(d)(1) to determine that the percent organic HAP content does not exceed 5 percent by weight. When A Permittee and the EPA Administrator and AMS do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in 40 CFR 63.180(d)(1) shall be used to resolve the disagreement. [40 CFR 63.180(d)(2)(i)]

(10) Conversely, the Permittee may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent. [40 CFR 63.180(d)(2)(ii)]

(11) If a Permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph 40 CFR 63.180(d)(1), or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service. [40 CFR 63.180(d)(3)]

(12) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment. [40 CFR 63.180(d)(4)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor. [40 CFR 63.180(b)(5)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of more than one process unit may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site. [40 CFR 63.181(a)]

(2) The following information pertaining to all equipment in each process unit subject to the requirements in 40 CFR 63.162 through 63.174 shall be recorded: [40 CFR 63.181(b)]

(i) A list of identification numbers for subject equipment (except connectors exempt from monitoring and recordkeeping identified in 40 CFR 63.174 and instrumentation systems). Connectors need not be individually identified if all connectors in a designated area or length of pipe are identified as a group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2). [40 CFR 63.181(b)(1)(i)]

(ii) A schedule by process unit for monitoring connectors subject to the provisions of 40 CFR 63.174(a) and valves subject to the provisions of 40 CFR 63.168(d). [40 CFR 63.181(b)(1)(ii)]

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment may be identified on a plant site plan, in log entries, or by other appropriate methods. [40 CFR 63.181(b)(1)(iii)]

(iv) A list of identification numbers for equipment that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.163(g), 40 CFR 63.164(h), 40 CFR 63.165(c), or 40 CFR 63.173(f). [40 CFR 63.181(b)(2)(i)]

(v) A list of identification numbers for compressors that the Permittee elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of 40 CFR 63.164(i). [40 CFR 63.181(b)(2)(ii)]

(vi) Identification of surge control vessels or bottoms receivers that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.170. [40 CFR 63.181(b)(2)(iii)]

(vii) A list of identification numbers for pressure relief devices subject to the provisions in 40 CFR 63.165(a). [40 CFR 63.181(b)(3)(i)]

(viii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of 40 CFR 63.165(d). [40 CFR 63.181(b)(3)(ii)]

(ix) Identification of instrumentation systems subject to 40 CFR 63 Subpart H. Individual components in an instrumentation system need not be identified. [40 CFR 63.181(b)(4)]

(x) Identification of screwed connectors subject to the requirements of 40 CFR 63.174(c)(2). Identification can be by area or grouping as long as the total number within each group or area is recorded. [40 CFR 63.181(b)(5)]

(xi) The following information shall be recorded for each dual mechanical seal system:

(A) Design criteria required in 40 CFR 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) and an explanation of the design criteria; and [40 CFR 63.181(b)(6)(i)]

(B) Any changes to these criteria and the reasons for the changes. [40 CFR 63.181(b)(6)(ii)]

(xii) The following information pertaining to all pumps subject to the provisions of 40 CFR 63.163(j), valves subject to the provisions of 40 CFR 63.168(h) and 40 CFR 63.168(i), agitators subject to the provisions of 40 CFR 63.173(h) through 40 CFR 63.173(j), and connectors subject to the provisions of 40 CFR 63.174(f) and 40 CFR 63.174(g) shall be recorded: 40 CFR 63.181(b)(7)]

(A) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment. [40 CFR 63.181(b)(7)(i)]

(B) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment. [40 CFR 63.181(b)(7)(ii)]

(C) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair. [40 CFR 63.181(b)(7)(iii)]

(xiii) A list of valves removed from and added to the process unit, as described in 40 CFR 63.168(e)(1), if the net credits for removed valves is expected to be used. [40 CFR 63.181(b)(8)(i)]

(xiv) A list of connectors removed from and added to the process unit, as described in 40 CFR 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors, as required in 40 CFR 63.174(j). This is not required unless the net credits for removed connectors is expected to be used. [40 CFR 63.181(b)(8)(ii)]

(3) For visual inspections of equipment (e.g., 40 CFR 63.163(b)(3), 40 CFR 63.163(e)(4)(i)), the Permittee shall document that the inspection was conducted and the date of the inspection. The Permittee shall maintain records as specified in 40 CFR 63.181(d) for leaking equipment identified in this inspection. These records shall be retained for 5 years. [40 CFR 63.181(c)]

(4) When each leak is detected, the following information shall be recorded and kept for 5 years:

(i) The instrument and the equipment identification number and the operator name, initials, or identification number. [40 CFR 63.181(d)(1)]

(ii) The date the leak was detected and the date of first attempt to repair the leak. [40 CFR 63.181(d)(2)]

(iii) The date of successful repair of the leak. [40 CFR 63.181(d)(3)]

(iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable. [40 CFR 63.181(d)(4)]

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [40 CFR 63.181(d)(5)]

(A) The Permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by 40 CFR 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure. [40 CFR 63.181(d)(5)(i)]

(B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion. [40 CFR 63.181(d)(5)(ii)]

(vi) Dates of process unit shutdowns that occur while the equipment is unrepaired. [40 CFR 63.181(d)(6)]

(vii) Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in 40 CFR 63.174(b), as described in 40 CFR 63.174(c)(1), unless the Permittee elects to comply with the provisions of 40 CFR 63.174(c)(1)(ii). [40 CFR 63.181(d)(7)(i)]

(viii) The date and results of monitoring as required in 40 CFR 63.174(c). If identification of connectors that have been opened or otherwise had the seal broken is made by location under 40 CFR 63.181(d)(7)(i), then all connectors within the designated location shall be monitored. [40 CFR 63.181(d)(7)(ii)]

(ix) Copies of the periodic reports as specified in 40 CFR 63.182(d), if records are not maintained on a computerized database capable of generating summary reports from the records. [40 CFR 63.181(d)(9)]

(5) The dates and results of each compliance test required for compressors subject to the provisions in 40 CFR 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in 40 CFR 63.165(a) and 40 CFR 63.165(b). The results shall include: [40 CFR 63.181(f)]

(i) The background level measured during each compliance test. [40 CFR 63.181(f)(1)]

(ii) The maximum instrument reading measured at each piece of equipment during each compliance test. [40 CFR 63.181(f)(2)]

(6) The Permittee shall maintain records of the information specified in 40 CFR 63.181(g)(1) through 40 CFR 63.181(g)(3) for closed-vent systems and control devices subject to the provisions of 40 CFR 63.172. The records specified in 40 CFR 63.181(g)(1) shall be retained for the life of the equipment. The records specified in 40 CFR 63.181(g)(2) and 40 CFR 63.181(g)(3) shall be retained for 5 years. [40 CFR 63.181(g)]

(i) The design specifications and performance demonstrations specified in 40 CFR 63.181(g)(1)(i) through 40 CFR 63.181(g)(1)(iv). [40 CFR 63.181(g)(1)]

(A) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams. [40 CFR 63.181(g)(1)(i)]

(B) The dates and descriptions of any changes in the design specifications. [40 CFR 63.181(g)(1)(ii)]

(C) The flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by 40 CFR 63.11(b) of subpart A of 40 CFR 63 Subpart H. [40 CFR 63.181(g)(1)(iii)]

(D) A description of the parameter or parameters monitored, as required in 40 CFR 63.172(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 63.181(g)(1)(iv)]

(ii) Records of operation of closed-vent systems and control devices, as specified in 40 CFR 63.181(g)(2)(i) through 40 CFR 63.181(g)(2)(iii). [40 CFR 63.181(g)(2)]

(A) Dates and durations when the closed-vent systems and control devices required in 40 CFR 63.163 through 40 CFR 63.166, and 40 CFR 63.170 are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame. [40 CFR 63.181(g)(2)(i)]

(B) Dates and durations during which the monitoring system or monitoring device is inoperative. [40 CFR 63.181(g)(2)(ii)]

(C) Dates and durations of start-ups and shutdowns of control devices required in 40 CFR 63.163 through 40 CFR 63.166, and 40 CFR 63.170. [40 CFR 63.181(g)(2)(iii)]

(iii) Records of inspections of closed-vent systems subject to the provisions of 40 CFR 63.172, as specified CFR 63.181(g)(3)(i) and 40 CFR 63.181(g)(3)(ii). [40 CFR 63.181(g)(3)]

(A) For each inspection conducted in accordance with the provisions of 40 CFR 63.172(f)(1) or 40 CFR 63.172(f)(2) during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 63.181(g)(3)(i)]

(B) For each inspection conducted in accordance with the provisions of 40 CFR 63.172(f)(1) or 40 CFR 63.172(f)(2) during which leaks were detected, the information specified in 40 CFR 63.181(d) shall be recorded. [40 CFR 63.181(g)(3)(ii)]

(7) Each Permittee of a process unit subject to the requirements of 40 CFR 63.175 and 40 CFR 63.176 shall maintain the records specified in 40 CFR 63.181(h)(1) through 40 CFR 63.181(h)(9) for the period of the quality improvement program for the process unit. [40 CFR 63.181(h)]

(i) For the Permittee who elects to use a reasonable further progress quality improvement program, as specified in 40 CFR 63.175(d): [40 CFR 63.181(h)(1)]

(A) All data required in 40 CFR 63.175(d)(2). [40 CFR 63.181(h)(1)(i)]

(B) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter. [40 CFR 63.181(h)(1)(ii)]

(C) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(d). [40 CFR 63.181(h)(1)(iii)]

(ii) If the Permittee elects to use a quality improvement program of technology review and improvement, as specified in 40 CFR 63.175(e): [40 CFR 63.181(h)(2)]

(A) All data required in 40 CFR 63.175(e)(2). [40 CFR 63.181(h)(2)(i)]

(B) The percent leaking valves observed each quarter. [40 CFR 63.181(h)(2)(ii)]

(C) Documentation of all inspections conducted under the requirements of 40 CFR 63.175(e)(4), and any recommendations for design or specification changes to reduce leak frequency. [40 CFR 63.181(h)(2)(iii)]

(D) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(e). [40 CFR 63.181(h)(2)(iv)]

(iii) If the Permittee is subject to the requirements of the pump quality improvement program as specified in 40 CFR 63.176: [40 CFR 63.181(h)(3)]

(A) All data required in 40 CFR 63.176(d)(2) [40 CFR 63.181(h)(3)(i)].

(B) The rolling average percent leaking pumps [40 CFR 63.181(h)(3)(ii)].

(C) Documentation of all inspections conducted under the requirements of 40 CFR 63.176(d)(4), and any recommendations for design or specification changes to reduce leak frequency. [40 CFR 63.181(h)(3)(iii)]

(D) The beginning and ending dates while meeting the requirements of 40 CFR 63.176(d). [40 CFR 63.181(h)(3)(iv)]

(iv) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair. [40 CFR 63.181(h)(4)]

(v) Records of all analyses required in 40 CFR 63.175(e) and 40 CFR 63.176(d). The records will include the following: [40 CFR 63.181(h)(5)]

(A) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices. [40 CFR 63.181(h)(5)(i)]

(B) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials. [40 CFR 63.181(h)(5)(ii)]

(C) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under 40 CFR 63.175(e)(6)(iii) and 63.176(d)(6)(iii). [40 CFR 63.181(h)(5)(iii)]

(D) The beginning date and duration of performance trials of each candidate superior emission performing technology. [40 CFR 63.181(h)(5)(iv)]

(vi) All records documenting the quality assurance program for valves or pumps as specified in 40 CFR 63.175(e)(7) and 63.176(d)(7). [40 CFR 63.181(h)(6)]

(vii) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in 40 CFR 63.175(e)(7) and 40 CFR 63.176(d)(7). [40 CFR 63.181(h)(7)]

(viii) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in 40 CFR 63.176(d)(8). [40 CFR 63.181(h)(8)]

(ix) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. [40 CFR 63.181(h)(9)]

(8) The Permittee shall comply with the requirements of either 40 CFR 63.181(i)(1) or 40 CFR 63.181(i)(2), as provided in 40 CFR 63.181(i)(3). [40 CFR 63.181(i)]

(i) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service. [40 CFR 63.181(i)(1)]

(ii) When requested by the EPA Administrator and AMS, demonstrate that the piece of equipment or process is in heavy liquid service. [40 CFR 63.181(i)(2)]

(iii) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream

composition, engineering calculations, or process knowledge. [40 CFR 63.181(i)(3)]

(9) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit under 40 CFR 63.160. [40 CFR 63.181(j)]

(10) If the Permittee chooses to comply with the requirements of 40 CFR 63.179, they shall maintain the following records: [40 CFR 63.181(k)]

(i) Identification of the process unit(s) and the organic HAP's they handle. [40 CFR 63.181(k)(1)]

(ii) A schematic of the process unit, enclosure, and closed-vent system. [40 CFR 63.181(k)(2)]

(iii) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device. [40 CFR 63.181(k)(3)]

(e) Reporting Requirements

(1) The Permittee shall submit the following periodic reports. [40 CFR 63.182(d)]

(i) A report containing the information in 40 CFR 63.182(d)(2), 40 CFR 63.182(d)(3), and 40 CFR 63.182(d)(4) shall be submitted semiannually. Each semiannual report shall cover the 6-month period following the preceding period. [40 CFR 63.182(d)(1)]

(ii) For each process unit complying with the provisions of 40 CFR 63.163 through 40 CFR 63.174, the summary information listed in 40 CFR 63.182(d)(2)(i) through 40 CFR 63.182(d)(2)(xvi) for each monitoring period during the 6-month period. [40 CFR 63.182(d)(2)]

(A) The number of valves for which leaks were detected as described in 40 CFR 63.168(b), the percent leakers, and the total number of valves monitored; [40 CFR 63.182(d)(2)(i)]

(B) The number of valves for which leaks were not repaired as required in 40 CFR 63.168(f), identifying the number of those that are determined nonrepairable; [40 CFR 63.182(d)(2)(ii)]

(C) The number of pumps for which leaks were detected as described in 40 CFR 63.168(b), the percent leakers, and the total number of pumps monitored; [40 CFR 63.182(d)(2)(iii)]

(D) The number of pumps for which leaks were not repaired as required in 40 CFR 63.168(c); [40 CFR 63.182(d)(2)(iv)]

(E) The number of compressors for which leaks were detected as described in 40 CFR 63.163(c); [40 CFR 63.182(d)(2)(v)]

(F) The number of compressors for which leaks were not repaired as required in 40 CFR 63.164(g); [40 CFR 63.182(d)(2)(vi)]

(G) The number of agitators for which leaks were detected as described in 40 CFR 63.173(a) and 40 CFR 63.173(b); [40 CFR 63.182(d)(2)(vii)]

(H) The number of agitators for which leaks were not repaired as required in 40 CFR 63.173(c); [40 CFR 63.182(d)(2)(viii)]

(I) The number of connectors for which leaks were detected as described in 40 CFR 63.174(a), the percent of connectors leaking, and the total number of connectors monitored; [40 CFR 63.182(d)(2)(ix)]

(J) The number of connectors for which leaks were not repaired as required in 40 CFR 63.174(d), identifying the number of those that are determined nonrepairable; [40 CFR 63.182(d)(2)(xi)]

(K) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible. [40 CFR 63.182(d)(2)(xiii)]

(L) The results of all monitoring to show compliance with 40 CFR 63.164(i), 40 CFR 63.165(a), and 40 CFR 63.172(f) conducted within the semiannual reporting period. [40 CFR 63.182(d)(2)(xiv)]

(M) If applicable, the initiation of a monthly monitoring program under 40 CFR 63.168(d)(1)(i), or a quality improvement program under either 40 CFR 63.175 or 40 CFR 63.176. [40 CFR 63.182(d)(2)(xv)]

(N) If applicable, notification of a change in connector monitoring alternatives as described in 40 CFR 63.174(c)(1). [40 CFR 63.182(d)(2)(xvi)]

(O) If applicable, the compliance option that has been selected under 40 CFR 63.172(n). [40 CFR 63.182(d)(2)(xvii)]

9. Group 08 - Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[25 Pa Code 129.58, Case-by-case RACT, 25 Pa Code §§129.91-129.95; AMR V Section XIII.A.]

Refer to Summary Table in Section D.7. that summarizes leak detection and repair regulatory applicabilities for individual components within each process unit of the refinery.

(a) Work Practice Standards

(1) The Permittee shall not allow VOC to be emitted in liquid state at the point of discharge into the atmosphere from leaking pumps, valves, compressors, safety pressure relief devices, flanges, gaskets, seals, connections, joints, fitting or other process equipment. [AMR V. Sec. XIII.A.]

(2) Repair leaking refinery components which have a VOC concentration exceeding 10,000 ppm. [25 PA Code §129.58(a)(2)]

(3) Repair and retest the leaking refinery components as soon as possible. Every reasonable effort shall be made to repair each leak within 15 days unless a refinery unit shutdown is required to make the necessary repair. [25 PA Code §129.58(a)(3)]

(4) Identify leaking refinery components which cannot be repaired until the unit is shutdown for turnaround. [25 PA Code §129.58(a)(4)]

(5) Except for safety pressure relief valves and fittings on all valves 1 inch or smaller, do not install or operate a valve at the end of a pipe or line containing VOCs unless the pipe or line is sealed with a second valve, a blind flange, a plug or a cap. The sealing device may be removed only when a sample is being taken or during maintenance operations. [25 PA Code §129.58(b)]

(6) Pipeline valves and pressure relief valves in gaseous VOC service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and AMS. [25 PA Code §129.58(c)]

(7) The Permittee shall use the definitions provided in the Federal New Source Performance Standards (NSPS) to designate streams subject to monitoring in order to comply with 25 PA Code §129.58. The testing and monitoring requirements specified in 25 PA Code §129.58 are applied to sources that handle gas or "light" liquids (meeting the definition of 40 CFR 60.485(e)). Heavy liquid shall be monitored based on visual, audible, or olfactory means of detection. A source is considered to be in VOC service if it contacts or contains a gas or liquid that has at least 10% VOC by weight. [AMS Letter dated May 30, 2000, 25 PA Code §129.58(g)]

(b) Testing Requirements

[25 PA Code §139]

(1) For determining the magnitude of VOC leaks from petroleum refinery equipment, test methods and procedures shall be equivalent to those specified in EPA Method 21 (40 CFR 60, Appendix A) or as specified in 25 PA §139.4(5). Methane and ethane may be excluded from this measurement. If methane and ethane are excluded, the measurement of methane and ethane together shall be reported. [25 PA §139.14(b)(4)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Check yearly, by the method referenced in Section D.9.(b)(1), pump seals and pipeline valves in light liquid service. [25 PA Code §129.58(d)(1)(i)]

(2) Check quarterly by the method referenced in Section D.9.(b)(1), compressor seals, pipeline valves in gaseous service, and pressure relief valves in gaseous service. [25 Pa Code §129.58(d)(1)(ii)]

(3) Check monthly, by visual methods, all pump seals. [25 PA Code §129.58(d)(1)(iii)]

(4) For light liquid components, check within 24 hours, by the method referenced in Section D.9.(b)(1), a pump seal from which VOC liquids are observed to be dripping. [25 PA Code §129.58(d)(1)(iv)]

(5) Check, by the method referenced in Section D.9.(b)(1), a relief valve within 24 hours after it has vented to the atmosphere. [25 PA Code §129.58(d)(1)(v)]

(6) Check within 72 hours after repair, by the method referenced in Section D.9.(b)(1), a refinery component that was found leaking. [25 PA Code §129.58(d)(1)(vi)]

(7) Upon the detection of a leaking refinery component, affix a weatherproof and readily visible tag, bearing an identification number and the date upon which the leak is located to the leaking refinery component. This tag shall remain in place until the leaking refinery component is repaired. [25 PA Code §129.58(d)(3)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Maintain a leaking refinery components' monitoring log which shall contain, at a minimum, the following data:

(i) The name of the process unit where the refinery component is located. [25 PA Code §129.58(e)(1)(i)]

(ii) The type of refinery component— for example, valve, seal. [25 PA Code §129.58(e)(1)(ii)]

(iii) The tag number of refinery component. [25 PA Code §129.58(e)(1)(iii)]

(iv) The dates on which the leaking refinery component was discovered and repaired. [25 PA Code §129.58(e)(1)(iv)]

(v) The date and instrument reading of the recheck procedure after a leaking refinery component was repaired. [25 PA Code §129.58(e)(1)(v)]

(vi) A record of the calibration of the monitoring instrument. [25 PA Code §129.58(e)(1)(vi)]

(vii) Those leaks that cannot be repaired until turnaround. [25 PA Code §129.58(e)(1)(vii)]

(viii) The total number of refinery components checked and the total number of refinery components found leaking. [25 PA Code §129.58(e)(1)(viii)]

(e) Reporting Requirements

(1) The Permittee, upon completion of each yearly and quarterly monitoring procedure, shall do the following:

(i) Submit a report to AMS by the last business day of January, April, July, and October that lists all leaking refinery components that were located during the previous calendar quarter but not repaired within 15 days, all leaking refinery components awaiting unit turnaround, the total number of refinery components inspected and the total number of refinery components found leaking. [25 PA Code §129.58(f)(1)(i)]

(ii) Submit a signed statement with the report attesting to the fact that monitoring and repairs were performed as stipulated in the monitoring program. [25 PA Code §129.58(f)(1)(ii)]

(f) Case-by-case RACT, 25 Pa Code §§129.91-129.95

(1) The Permittee shall utilize a fugitive emission LDAR program for all valves, pumps, flanges, and compressors in VOC service. For any source not covered under an existing LDAR program, monitoring shall be conducted on a quarterly basis for equipment in gaseous service and on an annual basis for equipment in liquid service. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2K]

10. Group 09 – Cooling Towers

Girard Point equipment P125, P126, P127, and P128. Point Breeze equipment numbered P632, P633, P634, and P635.

(a) Emission Limitations

(1) Particulate Matter emission from each Cooling Tower shall not exceed 40 lbs/hr [AMR II Sec VII]

(b) Work Practice Standards

(1) The Permittee shall not use chromium-based water treatment chemicals in any affected industrial process cooling tower (IPCT). [40 CFR 63.402]

(2) Each cooling tower and equipments shall be installed, maintained, and operated in accordance with manufacturer's specifications.

(c) Testing Requirements

[25 PA Code §139]

(1) No routine sampling, or analysis is required. However, In accordance with section 114 of the Act, AMS can require cooling water sample analysis of an IPCT if there is information to indicate that the IPCT is not in compliance with the requirements of 40 CFR 63.402. The Permittee of an IPCT may demonstrate compliance through recordkeeping in accordance with 40 CFR 63.404(d) in lieu of a water sample analysis. If cooling water sample analysis is required: [40 CFR 63.404]

(i) The water sample analysis shall be conducted in accordance with Method 7196, Chromium, Hexavalent (Colorimetric), contained in the Third Edition of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, (November 1986) and its Revision I, (December 1987) which are available from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, (202) 783-3238 (document number 955-001-00000-1; or Method 3500-Cr D, Colorimetric Method, contained in the 18th Edition of "Standard Methods for the Examination of Water and Wastewater" (1992), which is available from the American Public Health Association, 1015 15th Street, NW., Washington, DC 20005. [40 CFR 63.404(a)]

(ii) On or after 3 months after the compliance date, a cooling water sample residual hexavalent chromium concentration equal to or less than 0.5 parts per million by weight shall indicate compliance with 40 CFR 63.402. Alternatively, the Permittee may demonstrate compliance through record keeping in accordance with 40 CFR 63.404(c). [40 CFR 63.404(b)]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Perform daily visual inspection of water basins for presence of hydrocarbon.

(2) Utilize an inspection and maintenance/monitoring program for VOC fugitive emissions from cooling towers. [Case-by-case RACT, 25 Pa Code §§129.91-129.95, Section 2J]

(3) For P127, the Permittee who elects to comply with the requirements of 40 CFR 63.104(a) by monitoring the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak shall comply with the requirements specified in 40 CFR 63.104(b)(1) through 40 CFR 63.104(b)(6). The cooling

water shall be monitored for total hazardous air pollutants, total volatile organic compounds, total organic carbon, one or more speciated HAP compounds, or other representative substances that would indicate the presence of a leak in the heat exchange system. [40 CFR 63.104(b). This streamlined permit condition assures compliance with 40 CFR 63.104(a)]

(i) The cooling water shall be monitored monthly for the first 6 months and quarterly thereafter to detect leaks. [40 CFR 63.104(b)(1)]

(ii) For recirculating heat exchange systems (cooling tower systems), the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 4 subpart F of 40 CFR 63. [40 CFR 63.104(b)(2)(i)]

(iii) For once-through heat exchange systems, the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 9 of subpart G of 40 CFR 63. [40 CFR 63.104(b)(2)(ii)]

(iv) The concentration of the monitored substance(s) in the cooling water shall be determined using any EPA-approved method listed in part 136 of subpart F of 40 CFR 63 as long as the method is sensitive to concentrations as low as 10 parts per million and the same method is used for both entrance and exit samples. Alternative methods may be used upon approval by EPA. [40 CFR 63.104(b)(3)]

(v) The samples shall be collected either at the entrance and exit of each heat exchange system or at locations where the cooling water enters and exits each heat exchanger or any combination of heat exchangers. [40 CFR 63.104(b)(4)]

(vi) For samples taken at the entrance and exit of recirculating heat exchange systems, the entrance is the point at which the cooling water leaves the cooling tower prior to being returned to the process equipment and the exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid. [40 CFR 63.104(b)(4)(i)]

(vii) For samples taken at the entrance and exit of once-through heat exchange systems, the entrance is the point at which the cooling water enters and the exit is the point at which the cooling water exits the plant site or chemical manufacturing process units. [40 CFR 63.104(b)(4)(ii)]

(viii) For samples taken at the entrance and exit of each heat exchanger or any combination of heat exchangers in chemical manufacturing process units, the entrance is the point at which the cooling water enters the individual heat exchanger or group of heat exchangers and the exit is the point at which the cooling water exits the heat exchanger or group of heat exchangers. [40 CFR 63.104(b)(4)(iii)]

(ix) A minimum of three sets of samples shall be taken at each entrance and exit as defined in 40 CFR 63.104(b)(4). The average entrance and exit concentrations shall then be calculated. The concentration shall be corrected for the addition of any makeup water or for any evaporative losses, as applicable. [40 CFR 63.104(b)(5)]

(x) A leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one-sided statistical procedure at the 0.05 level of significance and the amount by which it is greater is at least 1 part per million or 10 percent of the entrance mean, whichever is greater. [40 CFR 63.104(b)(6)]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep record of PM emission to demonstrate compliance with Section D.10(a)(1). Emission shall be calculated using AP-42 emission factor.

(2) To demonstrate compliance with 40 CFR 63.402, in lieu of the water sample analysis provided for in 40 CFR 63.404(a), the Permittee of each IPCT may maintain records of water treatment chemical purchases, including invoices and other documentation that includes invoices and other documentation that includes date(s) of purchase or shipment, trade name or other information to identify composition of the product, and quantity of the product. The Permittee shall maintain these records for at least five years onsite. [40 CFR 63.404(c)]

(3) The Permittee shall maintain copies of the initial notification and the notification of compliance status as required by 40 CFR 63.405 for a period of at least 5 years onsite. [40 CFR 63.405]

(4) Record daily visual inspections of cooling tower water basin in Operators Log.

(5) Records of inspection and maintenance/monitoring program for VOC fugitive emissions from cooling towers.

(f) Reporting Requirements

(1) The Permittee shall report any VOC fugitive emissions present from cooling towers during inspections and actions taken in the semiannual report. [25 Pa Code 129.92(a)(7)]

11. Group 10 – Miscellaneous process vents (Group 1) subject to 40 CFR 63 Subparts G and CC

Girard Point equipment numbered P-184 (four associated vents – vacuum unit gases at Unit 137 go to CD-006 [F-1 Heater at Unit 137]; the other three vents go to a process heater or to flare P-117 [CD-012] or flare P-118 [CD-013]), P-181 (six associated vents that go to either flare P-117 [CD-012] or flare P-118 [CD-013], and P-184 vents that go to either flare P-117 [CD-012] or flare P-118 [CD-013]. Point Breeze equipment numbered P1002.

(a) Work Practice Standards

(1) Vacuum-producing systems shall vent any volatile organic compounds emitted from the condensers, hot wells, or accumulators of the system to a boiler or process heater. The boiler or heater shall have a heat input design capacity greater than 44 MW (150 MMBTU/hr) and shall reduce emissions of organic HAP's by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. The vent stream shall be introduced into the flame zone, or in a

location such that the required percent reduction or concentration is achieved. [40 CFR 63.643(a)(2) and 40 CFR 63.643(b), 25 PA Code §129.55(c)]

(2) A permittee may designate a process vent as a maintenance vent if the vent is only used as a result of startup, shutdown, maintenance, or inspection of equipment where equipment is emptied, depressurized, degassed or placed into service. In this event, the permittee must comply with the applicable requirements at 40 CFR 63.643(c)(1) through (4), for each maintenance vent, by the compliance dates specified in table 11 of 40 CFR 63 Subpart CC.

(3) If, after applying best practices to isolate and purge equipment served by a maintenance vent, none of the applicable criterion in paragraphs (c)(1)(i) through (iv) can be met prior to installing or removing a blind flange or similar equipment blind, the pressure in the equipment served by the maintenance vent is reduced to 2 psig or less, Active purging of the equipment may be used provided the equipment pressure at the location where purge gas is introduced remains at 2 psig or less.

(b) Non-Applicable Requirements

(1) Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt (150 MMBTU/hr) or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from testing, monitoring, recordkeeping, and reporting. [40 CFR 63.645(d), 40 CFR 63.644(a)(3), Table 10 of 40 CFR 63, Subpart CC]

(c) Recordkeeping Requirements

(1) The owner or operator shall maintain standard site procedures used to deinventory equipment for safety purposes (e.g., hot work or vessel entry procedures) to document the procedures used to meet the requirements in §63.643(c). The current copy of the procedures shall be retained and available on-site at all times. Previous versions of the standard site procedures, is applicable, shall be retained for five years.

(2) If complying with the requirements of §63.643(c)(1)(i) and the lower explosive limit at the time of the vessel opening exceeds 10 percent, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and the lower explosive limit at the time of the vessel opening.

(3) If complying with the requirements of §63.643(c)(1)(ii) and either the vessel pressure at the time of the vessel opening exceeds 5 psig or the lower explosive limit at the time of the active purging was initiated exceeds 10 percent, identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, the pressure of the vessel or equipment at the time of discharge to the atmosphere and, if applicable, the lower explosive limit of the vapors in the equipment when active purging was initiated.

(4) If complying with the requirements of §63.643(c)(1)(iii), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, the date of maintenance vent opening, and records used to estimate the total quantity of VOC in the equipment at the time the

maintenance vent was opened to the atmosphere for each applicable maintenance vent opening.

(5) If complying with the requirements of §63.643(c)(1)(iv), identification of the maintenance vent, the process units or equipment associated with the maintenance vent, records documenting the lack of a pure hydrogen supply, the date of maintenance vent opening, and the lower explosive limit of the vapors in the equipment at the time of discharge to the atmosphere for each applicable maintenance vent opening. [Reference: [40 CFR 63.655(i)(12)]

(d) Reporting Requirements

(1) For maintenance vents subject to the requirements in §63.643(c), Periodic Reports must include the information specified in paragraphs 40 CFR 63.655(g)(13) (i) through (iv) of this section for any release exceeding the applicable limits in §63.643(c)(1). For the purposes of this reporting requirement, owners or operators complying with §63.643(c)(1)(iv) must report each venting event for which the lower explosive limit is 20 percent or greater.

(i) Identification of the maintenance vent and the equipment served by the maintenance vent.

(ii) The date and time the maintenance vent was opened to the atmosphere.

(iii) The lower explosive limit, vessel pressure, or mass of VOC in the equipment, as applicable, at the start of atmospheric venting. If the 5 psig vessel pressure option in § 63.643(c)(1)(ii) was used and active purging was initiated while the lower explosive limit was 10 percent or greater, also include the lower explosive limit of the vapors at the time active purging was initiated

(iv) An estimate of the mass of organic HAP released during the entire atmospheric venting event.

12. Group 13A – Tanks Subject to 40 CFR 63 Subpart G.

Girard Point Tanks numbered P-001, P005, P017, P018, P021, P022, P023, P024, P025, P026, P029, P163 and Point Breeze Tank numbered P523.

Girard Point Tanks – Refer to Group 14C. This streamlined permit condition assures compliance with 25 Pa Code 129.56 and AMR V. Sec. II. and 40 CFR 63.110(b)(1) for P-005.

Point Breeze Tank – Refer to Group 13C. This streamlined permit condition assures compliance with 25 Pa Code 129.56 and AMR V. Sec. II. and 40 CFR 63.110(b)(1) for P-523.

13. Group 13B – Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC

Girard Point Tanks numbered P012, P015, P016, and P034. Point Breeze Tanks numbered P510, P538, P545, P547, P594, P603, and P604. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) All tanks are subject to the same requirements as for Group 13C, Section D.14.(a), with the following exceptions,

(i) The following paragraphs do not apply to storage vessels at existing sources subject to subpart CC of 40 CFR 63: 40 CFR 63.119(b)(5), 40 CFR 63.119(b)(6), 40 CFR 63.119(c)(2), and 40 CFR 63.119(d)(2) (gasketed fittings). [40 CFR 63.646(c)]

(ii) When complying with the inspection requirements of 40 CFR 63.120 of subpart G of 40 CFR 63, the Permittee of storage vessels at existing sources are not required to comply with the provisions for gaskets, slotted membranes, and sleeve seals. [40 CFR 63.646(e)]

(iii) If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access. [40 CFR 63.646(f)(1)]

(iv) Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting. [40 CFR 63.646(f)(2)]

(v) Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 63.646(f)(3)]

(2) An IFR shall be equipped with a liquid-mounted seal, or a mechanical shoe seal, or two seals mounted one above the other. If the two seal combination is used, the lower seal may be vapor-mounted. [40CFR 63.1063(a)(1)(i)(A)], (B) and (C).

(3) If the IFR is equipped with a vapor-mounted seal as of June 30, 2014, the requirements above do not apply until the next time the storage vessel is completely emptied and degassed, or 10 years after February 1, 2016, whichever comes first. [40 CFR 63.1063(a)(1)(i)(D)], [40 CFR 63.660(c)(1)] and [40 CFR 63.660(c)(2)]

(4) Openings through the deck of the floating roof shall be equipped as specified at 40 CFR 63.1063(a)(2)(i) through viii. [40 CFR 63.1063(a)(2)]. If the floating roof does not meet the requirements above as of June 30 2014, these requirements do not apply until the next time the vessel is completely emptied and degassed, or 10 years after February 1, 2016, whichever occurs first. [40 CFR 63.660(c)(1)], [40 CFR 63.660(c)(2)] and [40 CFR 63.1063(a)(2)(ix)]

(5) Each opening through a floating roof for a ladder having at least one slotted leg shall be equipped with one of the following control options: A pole float in the slotted leg and pole wipers for both legs. The wiper or seal of the pole float must be at or above the height of the pole wiper, A ladder sleeve and pole wipers for both legs of the ladder, or A flexible enclosure device and either a gasketed or welded cap on the top of the slotted leg. [40 CFR 63.660(b)(2)(i)] through [40 CFR 63.660(b)(2)(iii)]

(6) The floating roof shall float on the stored liquid surface at all times, except when the floating roof is supported by its leg supports or other support devices (e.g., hangers from the fixed roof). [40 CFR 63.1063(b)(1)]

(7) When the storage vessel is storing liquid, but the liquid depth is insufficient to float the floating roof, the process of filling to the point of refloating the floating roof shall be continuous and shall be performed as soon as practical. [40 CFR 63.1063(b)(2)]

(8) Each cover over an opening in the floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall be closed at all times, except when the cover must be open for access. [40 CFR 63.1063(b)(3)]

(9) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design. [40 CFR 63.1063(b)(4)]

(10) Each unslotted guidepole cap shall be closed at all times except when gauging the liquid level or taking liquid samples. [40 CFR 63.1063(b)(5)]

(b) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) All tanks are subject to the same monitoring requirements as for Group 13C, Section D.14(c), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(2) Tanks shall be inspected as specified in paragraph (d)(1) of 40CFR63.1063 before the initial filling of the storage vessel. Subsequent inspections shall be performed as specified

(i) Internal floating roofs shall be inspected as specified in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of 40CFR63.1063.

(A) At least once per year the IFR shall be inspected as specified in paragraph (d)(2) of 40CFR63.1063.

(B) Each time the storage vessel is completely emptied and degassed, or every 10 years, whichever occurs first, the IFR shall be inspected as specified in paragraph (d)(1) of 40CFR63.1063.

(ii) Instead of the inspection frequency specified in paragraph (c)(1)(i) of 40CFR63.1063, internal floating roofs with two rim seals may be inspected as specified in paragraph (d)(1) of this section each time the storage vessel is completely emptied and degassed, or every 5 years, whichever occurs first. [40CFR63.1063]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) All tanks are subject to the same recordkeeping requirements as for Group 13C, Section D.14(d), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(2) Keep all records for at least 5 years so that they can be readily accessed within 24 hours. [40 CFR 63.1065].

(3) For each storage vessel, keep records of the dimensions, an analysis of the capacity, and an identification of the liquid stored. [40 CFR 63.1065(a)].

(4) Keep records of all floating roof inspection results as specified at 40 CFR 63.1065(b)(1). [40 CFR 63.1065(b)].

(5) For each storage tank, record the date the floating roof was set on its legs, the date the roof was refloated, and whether the refloating process was continuous. [40 CFR 63.1065(c)].

(6) A permittee electing to use an extension per 40 CFR 63.1063(e)(2) or [40 CFR 63.1063(c)(2)(iv)(B) shall keep the relevant documentation.[40 CFR 63.1065(d)].

(d) Reporting Requirements

(1) All tanks are subject to the same reporting requirements as for Group 13C, Section D.14(e), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(2) Conditions that constitute inspection failures shall be repaired as specified at [40 CFR 63.1063(e)(1)] or (2). [40 CFR 63.1063(e)].

(3) Submit Periodic Reports no later than 60 days after the end of each 6-month period when information specified at 40 CFR 63.655(g)(2)(ii) is collected. A Periodic Report is not required if none of the events identified at 40 CFR 63.655(g)(2)(ii) occurred during the 6-month period. [40 CFR 63.655(e)(2)] and [40 CFR 63.655(g)].

(4) Submit notifications of inspections as specified at 40 CFR 63.655(h)(2)(i). [40 CFR 63.655(h)(2)] and [40 CFR 63.655(e)(3)].

(5) Periodic reports must contain inspection notifications, inspection results and requests for extensions. [40 CFR 63.1066(b)]

14. Group 13C – Internal Floating Roof Tanks subject to 40 CFR 60, Subpart Kb

Girard Point Tanks P009, P010, P134, P135, P-136, P137, P159, P160, and P174. Point Breeze equipment numbered P501 and P511. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling

shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(2) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(i) A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank. [40 CFR 60.112b(a)(1)(ii)(A)]

(ii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous. [40 CFR 60.112b(a)(1)(ii)(B)]

(iii) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof. [40 CFR 60.112b(a)(1)(ii)(C)]

(3) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(4) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(5) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(6) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(7) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(8) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(9) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(ix)]

(10) Subpart Kb applies to storage vessels with a capacity ≥ 151 m^3 with max true vapor pressure ≥ 3.5 kilopascals (kPa) but less than 76.6 kPa or with a

capacity ≥ 75 m^3 but < 151 m^3 with maximum true vapor pressure ≥ 27.6 kPa but less than 76.6 kPa. [40 CFR 60.112b(a)]

(b) Testing Requirements

[25 PA Code §139]

(1) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below. [40 CFR 60.116b(e)]

(i) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(ii) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(A) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(B) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(2) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel. [40 CFR 60.113b(a)(1)]

(2) For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary

seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

(3) For vessels equipped with a double-seal system: [40 CFR 60.113b(a)(3)]

(i) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(4) at least every 5 years; or [40 CFR 60.113b(a)(3)(i)]

(ii) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(2). [40 CFR 60.113b(a)(3)(ii)]

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in 40 CFR 60.113b(a)(2) and 40 CFR 60.113b(a)(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113b(a)(3(i). [40 CFR 60.113b(a)(4)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. The record will be kept for the life of the source. Each storage vessel with a design capacity less than 75 m^3 is exempt except for what is required in D.14(d)(2). [40 CFR 60.116b(a) and (b)]

(2) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75

m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

(4) Keep a record of each inspection performed as required by 40 CFR 60.113b (a)(1), (a)(2), (a)(3) and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). [40 CFR 60.115b(a)(2)]

(e) Reporting Requirements

(1) Notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to have an observer present. If the inspection is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

(2) Furnish the EPA Administrator and AMS with a report that describes the control equipment and certifies that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1). This report shall be an attachment to the notification required by 40 CFR 60.7(a)(3). [40 CFR 60.115b(a)(1)]

(3) If any of the conditions described in 40 CFR 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR 60.113b(a)(2), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

(4) After each inspection required by 40 CFR 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR 60.113b(a)(3)(ii), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection.

The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR 61.112b(a)(1) or 40 CFR 60.113b(a)(3) and list each repair made. [40 CFR 60.115b(a)(4)]

15. Group 14A – External Floating Roof Tanks subject to only local and State Regulations

16. Group 14B – External Floating Roof Tanks subject to 40 CFR 63, Subpart CC

Point Breeze Tanks P502, P503, P504, P507, P508, P509, P512, P513, P514, P521, P525, P526, P527, P537, P540, P541, P542, P546, P579, P587, P588, P590 P594, P599, P600, P601, P602, P603, and P604. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) Same requirements as for Group 14C, Section D.17(a), except that the gasketed fitting requirements do not apply to this group of tanks.

(2) An EFR shall be equipped with a liquid-mounted seal and a secondary seal or a mechanical shoe seal and a secondary seal with the upper end of the shoe(s) extending a minimum of 61 cm (24 inches) above the stored liquid surface. [40 CFR 63.1063(a)(1)(ii)(A)] and (B).

(3) If the EFR is equipped with a liquid-mounted seal, a mechanical shoe seal, or a vapor-mounted seal and secondary seal as of June 30 2014, the requirements above do not apply until the next time the storage vessel is completely emptied and degassed, or 10 years after February 2016, whichever occurs first. [40 CFR 63.1063(a)(1)(ii)(C)], [40 CFR 63.660(c)(1)] and [40 CFR 63.660(c)(2)]

(4) Openings through the deck of the floating roof shall be equipped as specified at 40 CFR 63.1063(a)(2)(i) through viii. [40 CFR 63.1063(a)(2)]. If the floating roof does not meet the requirements above as of June 30 2014, these requirements do not apply until the next time the vessel is completely emptied and degassed, or 10 years after February 1, 2016, whichever occurs first. [40 CFR 63.660(c)(1)], [40 CFR 63.660(c)(2)] and [40 CFR 63.1063(a)(2)(ix)]

(5) Each opening through a floating roof for a ladder having at least one slotted leg shall be equipped with one of the following control options: A pole float in the slotted leg and pole wipers for both legs. The wiper or seal of the pole float must be at or above the height of the pole wiper, A ladder sleeve and pole wipers for both legs of the ladder, or A flexible enclosure device and either a gasketed or welded cap on the top of the slotted leg. [40 CFR 63.660(b)(2)(i)] through [40 CFR 63.660(b)(2)(iii)]

(6) The floating roof shall float on the stored liquid surface at all times, except when the floating roof is supported by its leg supports or other support devices (e.g., hangers from the fixed roof). [40 CFR 63.1063(b)(1)]

(7) When the storage vessel is storing liquid, but the liquid depth is insufficient to float the floating roof, the process of filling to the point of refloating the floating roof shall be continuous and shall be performed as soon as practical. [40 CFR 63.1063(b)(2)]

(8) Each cover over an opening in the floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, shall be closed at all times, except when the cover must be open for access. [40 CFR 63.1063(b)(3)]

(9) Each automatic bleeder vent (vacuum breaker vent) and rim space vent shall be closed at all times, except when required to be open to relieve excess pressure or vacuum, in accordance with the manufacturer's design. [40 CFR 63.1063(b)(4)]

(10) Each unslotted guidepole cap shall be closed at all times except when gauging the liquid level or taking liquid samples. [40 CFR 63.1063(b)(5)]

(b) Testing Requirements

[25 PA Code §139]

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(3) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the

wall of the storage vessel according to the following frequency. [40 CFR 60.113b(b)(1)]

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter. [40 CFR 60.113b(b)(1)(i)]

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter. [40 CFR 60.113b(b)(1)(ii)]

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of 40 CFR 60.113b(b)(1)(i) and 40 CFR 60.113b(b)(1)(ii). [40 CFR 60.113b(b)(1)(iii)]

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures: [40 CFR 60.113b(b)(2)]

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. [40 CFR 60.113b(b)(2)(i)]

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location. [40 CFR 60.113b(b)(2)(ii)]

(iii) The total surface area of each gap described in paragraph 40 CFR 60.113b(b)(2)(ii) shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance. [40 CFR 60.113b(b)(2)(iii)]

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in 40 CFR 60.113b(b)(4). [40 CFR 60.113b(b)(3)]

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and 40 CFR 60.113b(b)(4)(ii): [40 CFR 60.113b(b)(4)]

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface. [40 CFR 60.113b(b)(4)(i)(A)]

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 60.113b(b)(4)(i)(B)]

(ii) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in [40 CFR 60.113b(b)(2)(iii)]. [40 CFR 60.113b(b)(4)(ii)(A)]

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. [40 CFR 60.113b(b)(4)(ii)(B)]

(C) There are to be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 60.113b(b)(4)(ii)(C)]

(iii) If a failure is detected during an inspection and cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.113b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(b)(4)(iii)]

(5) Notify the EPA Administrator and AMS 30 days in advance of any gap measurements required by 40 CFR 60.113b(b)(1) to afford the EPA Administrator and AMS the opportunity to have an observer present. [40 CFR 60.113b(b)(5)]

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. [40 CFR 60.113b(b)(6)]

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL. [40 CFR 60.113b(b)(6)(i)]

(7) For all the inspections required by 40 CFR 60.113b(b)(6), the Permittee shall notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to inspect the storage vessel prior to refilling. If the inspection required by 40 CFR 60.113b(b)(6) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(b)(6)(ii)]

(8) External floating roofs shall be inspected as specified in paragraphs (c)(2)(i) through (c)(2)(iv) of 40CFR 63.1063

(i) Within 90 days after the initial filling of the storage vessel, the primary and secondary rim seals shall be inspected as specified in paragraph (d)(3) of 40CFR 63.1063.

(ii) The secondary seal shall be inspected at least once every year, and the primary seal shall be inspected at least every 5 years, as specified in paragraph (d)(3) of 40CFR 63.1063.

(iii) Each time the storage vessel is completely emptied and degassed, or every 10 years, whichever occurs first, the EFR shall be inspected as specified in paragraph (d)(1) of 40CFR 63.1063.

(iv) If the owner or operator determines that it is unsafe to perform the floating roof inspections specified in paragraphs (c)(2)(i) and (c)(2)(ii) of 40CFR 63.1063, the owner or operator shall comply with the requirements of paragraph (c)(2)(iv)(A) or (c)(2)(iv)(B) of 40CFR 63.1063.

(A) The inspections shall be performed no later than 30 days after the determination that the floating roof is unsafe. Or,

(B) The storage vessel shall be removed from liquid service no later than 45 days after determining the floating roof is unsafe. If the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two extensions of up to 30 additional days each. If the vessel cannot be emptied within 45 days, the owner or operator may utilize up to two extensions of up to 30 additional days each. Documentation of a decision to use an extension shall include an explanation of why it was unsafe to perform the inspection, documentation that alternative storage capacity is unavailable, and a schedule of actions that will ensure that the vessel will be emptied as soon as practical. [40CFR 63.1063]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep copies of all records required by 40 CFR 60.116b(b), for the life of the source. [40 CFR 60.116b(a)]

(2) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of this subpart other than those required by this paragraph. The records of this condition shall be kept for the life of the source. [40 CFR 60.116b(a) and (b)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75

m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(4) The Permittee shall keep a record of each gap measurement performed as required by 40 CFR 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement. [40 CFR 60.115b(b)(3)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(3)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(3)(iii)]

(5) Keep all records for at least 5 years so that they can be readily accessed within 24 hours. [40 CFR 63.1065].

(6) For each storage vessel, keep records of the dimensions, an analysis of the capacity, and an identification of the liquid stored. [40 CFR 63.1065(a)].

(7) Keep records of all floating roof inspection results as specified at 40 CFR 63.1065(b)(1) and (2). [40 CFR 63.1065(b)].

(8) For each storage tank, record the date the floating roof was set on its legs, the date the roof was refloated, and whether the refloating process was continuous. [40 CFR 63.1065(c)].

(9) A permittee electing to use an extension per 40 CFR 63.1063(e)(2) or [40 CFR 63.1063(c)(2)(iv)(B) shall keep the relevant documentation.[40 CFR 63.1065(d)].

(e) Reporting Requirements

(1) Within 60 days of performing the seal gap measurements, the Permittee furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(2) Within 60 days of performing the seal gap measurements required by (c)(1) of this section, The Permittee shall furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(3) After each seal gap measurement that detects gaps exceeding the limitations specified by (c)(4) of this section, the Permittee shall submit a report to the EPA Administrator and AMS within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (e)(2) of this section and the date the vessel was emptied or the repairs made and date of repair. [40 CFR 60.115b(b)(4)]

(4) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

(5) Conditions that constitute inspection failures shall be repaired as specified at [40 CFR 63.1063(e)(1)] or (2). [40 CFR 63.1063(e)].

(6) Submit Periodic Reports no later than 60 days after the end of each 6-month period when information specified at 40 CFR 63.655(g)(2)(ii) is collected. A Periodic Report is not required if none of the events identified at 40 CFR 63.655(g)(2)(ii) occurred during the 6-month period. [40 CFR 63.655(e)(2)] and [40 CFR 63.655(g)].

(7) Submit notifications of inspections as specified at 40 CFR 63.655(h)(2)(i). [40 CFR 63.655(h)(2)] and [40 CFR 63.655(e)(3)].

(8) Periodic reports must contain inspection notifications, inspection results and requests for extensions. [40 CFR 63.1066(b)]

17. Group 14C – External Floating Roof Tanks subject to 40 CFR 60, Subpart Kb (or equivalent).

Girard Point Tanks P006, P155, and P162. Point Breeze Tanks P624, and P627. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications: [40 CFR 60.112b(a)(2)]

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in 40 CFR 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall. [40 CFR 60.112b(a)(2)(i)(A)]

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4). [40 CFR 60.112b(a)(2)(i)(B)]

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid

surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(2) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(b) Testing Requirements

[25 PA Code §139]

(1) Same requirements as for Group 14B, Section D.16(b).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Same requirements as for Group 14B, Section D.16(c).

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Same requirements as for Group 14B, Section D.16(d).

(e) Reporting Requirements

(1) Same requirements as for Group 14B, Section D.16(e).

18. Group 15A – Group 2 Storage Tanks

Girard Point Tanks P002, P003, P019, P020, P027, P028, P030, P031, P032, P035, P036, P037, P039, P144, P146, P147, P150, P151, P153, P154, P157, P165, P166, P167, P175, P176, P177, P178, and P179. Point Breeze Tanks P515, P516, P518, P519, P520, P529, P530, P534, P535, P551, P563, P565, P567, P571, P574, P575, P576, P577, P578, P580, P582, P584, P585, and P623. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II. for all tanks except for P-149, P-154, P-175, P-176, P-177, P-178, and P-179. These streamlined permit conditions assure compliance with 25 Pa Code 129.57 for Tank P-154.]

(b) Work Practice.

(1) Each tank shall have maximum true vapor pressure of less than 10.4 kPa (1.5 psia) and the annual average true vapor pressure shall be less than 8.3 kPa (1.2 psia).

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee may use good engineering judgment or test results to determine the stored liquid weight percent total organic HAP for purposes of group determination. Data, assumptions, and procedures used in the determination shall be documented. [40 CFR 63.646(b)(1)]

(2) When the Permittee and the EPA Administrator and AMS do not agree on whether the annual average weight percent organic HAP in the stored liquid is above or below 4 percent for a storage vessel at an existing source, Method 18 of 40 CFR part 60, appendix A shall be used. [40 CFR 63.646(b)(2)]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Keep records of identification of each storage vessel. [40 CFR 63.655(f)(1)(i)(A)]

(2) Keep a record of any data, assumptions, and procedures used to make a Group 2 determination (e.g., the weight percent total organic HAP of the stored liquid.) [40 CFR 63.655(i)(1)(iv)]

(3) Keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 2 status and is in operation. [40 CFR 63.123(a)]

(d) Reporting Requirements

(1) Submit the identification of each Group 2 storage vessel each time a Notification of Compliance Status Report is submitted. [40 CFR 63.655(f)(1)(i)(A)]

19. Group 15B – Fixed Roof Tanks subject to 40 CFR 60 Subpart Kb recordkeeping requirements

Girard Point Tanks P158, P171, and P172. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The Permittee shall not store in each tank any volatile organic liquid with a maximum true vapor pressure equal to or greater than 5.2 kPa as stored. [40 CFR 60.112b(a)]

(b) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of subpart J of 40 CFR 60 other than those required by this paragraph. [40 CFR 60.116b(b)]

20. Group 17 – Marine loading equipment

Girard Point P130 and CD011 (Thermal Oxidizer for P130). Point Breeze equipment numbered P636.

(a) Work Practice Standards

(1) Equipment leaks associated with the Marine Vapor Collection and Control System (MVCACS) are applicable to the requirements of Group 7, Section D.8. [AMS Permit Approval Letter Dated May 23, 2001, AMS Installation Permit No. 94110]

(2) For P636, the operation of the MVCACS is limited to 2500 barrels per hour. [AMS Permit Approval Letter Dated May 23, 2001, AMS Installation Permit No. 94110]

(3) Vapors from the operation of the MVCACS shall be fed as a primary fuel to the process heaters and boilers in order to achieve a minimum of 98% destruction efficiency. [AMS Permit Dated May 9, 2001, paragraph 2. This streamlined permit condition assures compliance with 29 PA Code §129.81(1)(i) and (2)]

(4) The vapor collection and transport system employed to carry VOCs to the vapor control system shall be maintained and operated so that it prevents the following: [29 PA Code §129.81(1)(ii)]

(i) A reading equal to or greater than 100% of the lower explosive limit (LEL), measured as propane, at 1 inch (2.5 centimeters) from all points on the perimeter of a potential leak source when measured by the method referenced in §139.14 (relating to emissions of VOCs) during loading operations. [29 PA Code §129.81(1)(ii)(A)]

(ii) Avoidable liquid leaks during loading operations. [29 PA Code §129.81(1)(ii)(B)]

(iii) Visually or audibly detectable leaks in the organic liquid cargo vessel's cargo tanks, hatch covers, storage tanks pressure/vacuum relief valves and associated vapor and liquid lines during loading. [29 PA Code §129.81(1)(ii)(C)]

(5) The pressure and vacuum relief valves on the liquid cargo vessel shall be set to release at no less than 0.7 psig (4.8 kilopascals) of pressure or 0.3 psig (2.1 kilopascals) of vacuum or the highest allowable pressure and vacuum as specified in State or local fire codes, the National Fire Prevention Association guidelines or other National consensus standards acceptable to the Department. [29 PA Code §129.81(1)(iii)]

(6) Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder. [RACT Plan Approval Issued 2/9/16]

(7) Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4 psi or greater [RACT Plan Approval Issued 2/9/16]

(8) VOC Emissions from Point Breeze Marine Barge Loading shall not exceed 25.99 tons per rolling 12-month period [RACT Plan Approval Issued 2/9/16]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitor the temperature of CD011.

(2) All by-pass vent streams shall be equipped with flow indicators and recorders. [AMS Permit Dated May 23, 2001, paragraph 3, AMS Installation Permit No. 94110]

(3) For P636, the Permittee shall provide verification on a monthly basis that operation of the MVCACS is limited to 2500 barrels per hour.

(4) Emission estimation procedures. For sources with emissions less than 10 or 25 tons and sources with emissions of 10 or 25 tons, the Permittee shall calculate an annual estimate of HAP emissions, excluding commodities exempted by 40 CFR 63.560(d), from marine tank vessel loading operations. Emission estimates and emission factors shall be based on test data, or if test data is not available, shall be based on measurement or estimating techniques generally accepted in industry practice for operating conditions at the source. [40 CFR 63.565(l)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Maintain records of all measurements, calculations, and other documentation used to identify commodities exempted under 40 CFR 63.560(d); [40 CFR 63.567(j)(1)]

(2) Keep readily accessible records of the emission estimation calculations performed in 40 CFR 63.565(l) for 5 years; and [40 CFR 63.567(j)(2)]

(3) The Permittee of marine tank vessel loading operations specified in 40 CFR 63.560(a)(3) shall retain records of the emissions estimates determined in 40 CFR 63.565(l) and records of their actual throughputs by commodity, for 5 years. [40 CFR 63.567(j)(4)]

(4) Continuously record the temperature of CD011.

(5) For P636, the Permittee shall retain a schematic diagram of the affected vent stream, collection system, fuel system, combustion devices and any by-pass system that is associated with the MVCACS on site. [AMS Permit Dated May 23, 2001, paragraph 4]

(6) For P636, the Permittee shall keep records on a monthly basis that operation of the MVCACS is limited to 2500 barrels per hour.

(e) Reporting Requirements

(1) If a source that otherwise would not be subject to the emissions standards subsequently increases its HAP emissions calculated on a 24-month annual average basis after September 19, 1997 or subsequently increases its gasoline or crude loading throughput calculated on a 24-month annual average basis after September 19, 1996 such that the source becomes subject to the emissions standards, such source shall be subject to the

notification requirements of 40 CFR 63.9 of subpart A of 40 CFR 63 and the notification requirements of this paragraph. [40 CFR 63.567(b)(1)]

(2) Initial notification for sources with startup before the effective date. The Permittee of a source with initial startup before the effective date shall notify the AMS and EPA in writing that the source is subject to the relevant standard. The notification shall be submitted not later than 365 days after the effective date of the emissions standards and shall provide the following information: [40 CFR 63.567(b)(2)]

(i) The name and address of the Permittee; [40 CFR 63.567(b)(2)(i)]

(ii) The address (i.e., physical location) of the source; [40 CFR 63.567(b)(2)(ii)]

(iii) An identification of this emissions standard that is the basis of the notification and the source's compliance date; [40 CFR 63.567(b)(2)(iii)]

(iv) A brief description of the nature, size, design, and method of operation of the source; [40 CFR 63.567(b)(2)(iv)]

(v) A statement that the source is a major source. [40 CFR 63.567(b)(2)(v)]

(f) Non-Applicable Requirements

(1) The Permittee is not applicable to 25 Pa Code 129.81(4) – Ballasting requirements. The Girard Point Wharf does not receive crude oil or gasoline cargoes.

21. Group 18 – Fluidized Catalytic Cracking Units

Girard Point equipment numbered CD004, and P120. Point Breeze equipment numbered P661 and CD-110 (ESP used by P661).

(a) Emission Limitations

FCCU 868

(1) The Permittee shall not exceed the allowable emission limitations in the following table for P661 - FCCU Unit 868 during normal operation (except during start up and shut down: [AMS Plan Approval IP16-000225, dated 30 April 2018]

		Emission Limitation		
Pollutants	**Concentration**	**Lbs/hr**	**Lbs/day**	**Tons/yr****
Particulate	1 lb/1000 lb coke	25*	600	95
SO_2	25 ppmvd @ 0% O2 on 365-day rolling average, and 50 ppmvd @0% O2 on 7-day rolling average	358	5880	600
CO	500 ppmv	54*	1,300	100
NOx	100 ppmdv @0%O_2 on a 7-	221	5,304	130.2

	day rolling average			
HC	N/A	5	123	23

* The 25 lbs/hr Particulate emission limit in this condition comes from Plan Approval No. 00184 and does not apply during start-up and shut-down. The 54 lbs/hr Carbon Monoxide emission limit in this condition comes from Plan Approval No. 00184 and does not apply during start-up, shut-down, and hot standby. The other emission limits in this condition apply at all times. The Particulate Matter emission limit in Condition 6 applies at all times. The Permittee shall comply with Condition 8 during start-up, shut-down, and hot standby as a surrogate for Carbon Monoxide (concept borrowed from 40 CFR 63.1565(a)(5)(ii)).

** Tons per year shall be calculated on the calendar and the daily rolling average

NOTE: [Plan Approval No. 00184 dated March 22, 2003. This streamlined permit condition assures compliance with Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H, SO2 Operating Permit No. SO2-95-039, NSPS Subpart J, MACT Subpart UUU, AMS Approval letter dated November 22, 1999 (Item 3) and Case-by-Case RACT Plan Approval February 9, 2016]

(2) The Permittee shall not exceed the allowable emission limitations below for P661 - FCCU Unit 868 at all times including start up and shut down:

(i) Particular matter emissions shall not exceed forty (40) pounds per hour [AMS II, Section VII, AMS Plan Approval IP16-000225, dated 30 April 2018]

(ii) Carbon Monoxide emissions shall not exceed the following:

(A) One percent (1%) by volume. [AMS Plan Approval 00184, dated March 22, 2002]

(B) 100 ppm vd at 0% O_2 on a 365-day rolling average basis. [Consent Decree Order 05-02866, on March 21, 2006, AMS Plan Approval IP16-000225, dated 30 April 2018]

(iii) Ammonia emissions shall not exceed 16.6 tons per rolling 12-month period. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(iv) Ammonia slip may not exceed 5.55 lb/hr. [AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(3) The Permittee shall not exceed limit of the following tables for P120 - FCCU Unit 1232 [AMS Plan Approval No. 04322, February 28, 2006, AMS Plan Approval 11353 dated 7/30/12, Consent Decree Order 05-CV-2866]

Concentration and Emissions		
Pollutant	***Long Term***	***Short Term***
Filterable PM/PM_{10} [a]	0.30 lb/1000 lb coke burn-off, 365-day rolling avg [b]	0.50 lb/1000 lb coke burn-off, 3-run avg
Total PM_{10} [a]		0.014 gr/dscf [d] @ 3% O2, 3 run avg

SO_2 (when CO boiler burn fuel gas with H_2S>0.1 gr/dscf		20 ppmdv @ 0% O2, 3 run rolling avg
SO_2	10 ppmdv @ 0% O2, 365-day rolling avg [c,d,f]	18 ppmdv @ 0% O2, 7-day rolling avg [c,f]
CO	100 ppmdv @ 0% O2, 365-day rolling avg [c,d]	500 ppmdv @ 0% O2, 1-hour avg
NOx	10 ppmdv @ 0% O2, 365-day rolling avg [c,e]	30 ppmdv @ 0% O2, 7-day rolling avg [c,e]

Where:

a. Filterable PM/ PM_{10} emissions per coke burn-off limits are for filterable particulate only, as measured by Method 5B.
b. Total PM/ PM_{10} emission limits include filterable particulate, as measured by Method 5B, and condensable particulate, as measured by Method 202.
c. Limits based on a 7-day or 365-day rolling average include only operating days.
d. PM, CO, and SO_2 concentration limits assure compliance with 40 CFR §§ 60.102(a)(1), 60.103, and 60.104(b)(1), 25 Pa Code §§ 123.13(b) & 123.21(b), AMR II Section VII, and AMR VIII Section II.
e. Consent Decree Order 05-CV-2866. Emission during periods of startup, shutdown, or malfunction shall not be used in determining compliance with the 7-day emission limit.
f. Consent Decree Order 05-CV-2866. SO2 emission from the Wet Gas Scrubber (WGS) Emission during periods of startup, shutdown, or malfunction shall not be used in determining compliance with the 7-day emission limit.

Emission Limits			
Pollutants	***Lbs/hr***	***Lbs/day***	***Tons/yr*** [a]
Total PM/ PM_{10} [b]	40.0	960.0	175.2
SO_2	663	15,980	362.72
CO	723	17,369	633.77
NOx	378	9,073	208.28
VOC	1.88	45.12	8.24
H_2SO_4 [c]	37.98	911.52	166.35
NH_3 [d]	4.39	105.36	19.23

Where:

a. NOx, SO_2, and CO tons per year shall be calculated on a rolling 365-day basis. PM/ PM_{10}, VOC, H_2SO_4, and NH_3 tons per year shall be calculated on a rolling 365-day basis based on AMS approved stack test results, daily process, and coke burn rate.
b. Total PM/ PM_{10} emission limits include filterable particulate, as measured by Method 5B, and condensable particulate, as measured by Method 202.
c. H_2SO_4 emission limits based on a nominal flue gas concentration of 7.5 ppmvd @ 0% O_2.
d. NH_3 emission limits based on a nominal flue gas concentration of 5 ppmvd @ 0% O_2.

(4) CD004 (the CO Boiler at the 1232 FCCU) shall not exceed 500 ppmvd SO_2 at any time. [SO2 Operating Permit No. SO2-95-039]

(5) When the Carbon Monoxide (CO) Boiler is not in operation, the Permittee shall operate the FCCU # 1232 with a CO promoter to maintain the CO concentration below 1% by volume of the exhaust gas. [AMR VIII, Section II]

(6) For CO and inorganic HAP emissions during startup, shutdown and hot standby, the following control device parameters will be used to comply with the inorganic HAP work practice standards specified in 40 CFR Part 63.1565(a)(5):

a. CO emissions from the catalyst regenerator vent or CO Boiler must not exceed 500 ppmv (dry basis); or

b. Maintain the oxygen (O2) concentration in the exhaust gas from the catalyst regenerator at or above 1 volume percent (dry basis).

(b) Work Practice Standards

FCCU 868

(1) FCCU Unit 868 shall not process more than 47,500 barrels per day (calculated on a 365-day rolling average basis). The FCCU may not process more than 50,000 barrels in any given day. [Plan Approval No. 00184 dated March 22, 2002 (Item 12)]

(2) For FCCU Unit 868, the Permittee shall follow good combustion practices controlling the level of excess oxygen and CO promoter in the regenerator to minimize NOx emissions from the regenerator. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H]

(3) The daily average ambient air rate to the FCCU Unit 868 regenerator shall not exceed 5.501 MMscfh. Plan Approval No. 00184 dated March 22, 2002]

(4) The FCCU Unit 868 shall be equipped with an automatic controls system to divert the feed when: [AMS Plan Approval 00184, dated March 22, 2002]

(i) The air blower is not in operation,

(ii) The feed rate falls below 18,000 bbls per day, or

(iii) The reactor temperature drops below 850 °F.

(5) The Permittee shall maintain the inlet velocity to the primary internal cyclones of the catalytic cracking unit catalyst regenerator at or above 20 feet per second (hourly average) during startup and shutdown. [AMS Plan Approval IP16-000225 Dated 30 April 2018]

(6) The Permittee shall control and monitor the catalyst bed level in FCCU 868 to prevent high catalyst levels and to reduce excessive catalyst losses [AMS Plan Approval 00184, dated March 22, 2002].

(7) The Permittee shall operate the FCCU 868 in accordance with the Quality Improvement Program submitted to AMS on September 15, 2001. [AMS Plan Approval 00184, dated March 22, 2002]

(8) The Permittee shall maintain the hourly average oxygen (O2) concentration in the exhaust gas from the 868 FCCU catalyst regenerator at or above 1 volume percent (dry basis) during start-up, shut-down, and hot standby. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(10) PES shall prepare an operation, maintenance, and monitoring plan according to the requirements in 40 CFR 63.1574(f) and operate at all times according to the procedures in the plan. [40 CFR 63.1564(a)(3) & 63.1565(a)(3), AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(11) The maximum allowable feed rate shall be limited 90,000 barrels per day calculated on a rolling 365-day average and 100,000 barrels per any single day. [AMS Plan Approval No.04322, February 28, 2006]

(12) The CD004 (CO Boiler at the 1232 FCCU) shall only burn refinery fuel gas or natural gas as auxiliary fuel [AMS Plan Approval 04322, dated February 28, 2006]

(13) The CO Boiler shall comply with 40 CFR Part 60, Subpart J. Compliance shall be demonstrated by continuously monitoring that either the concentration of H2S in the fuel gas does not exceed 0.1 gr/dscf or that the concentration of SO2 in the exhaust gas of the scrubber does not exceed 20 ppm (dry basis, zero percent air) on a 3-hour average [40 CFR §§ 60.104(a)(1), 60.105(a)(3)(ii), 60.105(a)(4), AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(14) The CO Boiler shall comply with the NO_x requirements of 25 Pa Code §§129.201-204. For this regulation, allowable emissions for the period from May 1 through September 30 of each year shall be calculated using an emission rate of 0.17 lbs NO_x/MMBTU. Actual and allowable emission calculations for this regulation shall follow the AMS-approved implementation plan [AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(15) In accordance with 25 PA Code § 129.55(d), the purging of VOCs during a unit turnaround shall be performed in a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the initial pressure in such equipment reaches 19.7 psia [AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(16) The Permittee shall, for the Wet Gas Scrubber (WGS) system, establish operating ranges for the pressure of water supplied, the flue gas pressure drop and a minimum pH during the performance test [AMS Plan Approval 04322, dated February 28, 2006].

(17) The Unit 1232 FCCU shall be equipped with continuous monitors and recorders for stack flow rate, NOx, SO2, CO, and O2 at the outlet of the WGS for compliance determination with the above limitations. The continuous monitors must conform to USEPA performance specifications in 40 CFR §§ 60.11, 60.13, 60.105, and Part 60 Appendices A, B, and F, and the PA DEP Continuous Source Monitoring Manual Rev. No. 7, September 2003 (PA CSMM). [AMS Plan Approval 04322, dated February 28, 2006].

(18) The Permittee shall prepare and implement an operation, maintenance, and monitoring plan for the 1232 FCCU, control systems, and monitoring systems

as per 40 CFR § 63.1574(f) [AMS Plan Approval 04322, dated February 28, 2006].

(19) The 1232 FCCU shall vent to the CO Boiler when operating in partial-burn mode and shall follow good combustion practices. [AMS RACT Plan Approval, dated 9 February 2016]

(c) Testing Requirements

[25 PA Code §139]

(1) The continuous emission monitors must conform to USEPA performance specifications in 40 CFR Part 60, Appendix B and PA DEP Continuous Sources Monitoring Manual [AMS Plan Approval 00184, dated March 22, 2002]

(2) Upon AMS request, the Permittee shall conduct performance tests on the 1232 and submit a test report to AMS to determine compliance with the emission standards for Total and Filterable Particulate/PM10, VOC, H2SO4, and Ammonia (outlet of WGS) and to determine emissions of Air Management Regulation VI Heavy Metals. [AMS Plan Approval 11353 dated 7/30/12].

(i) The Permittee shall conduct performance test for Total and Filterable Particulate/PM10, H2SO4, and Ammonia at least once every 12 months and furnish a written report to the results of each test to AMS.

(A) The Permittee may petition AMS to reduce the frequency of H2SO4 and Ammonia testing to every 5 years if sufficient test results show emissions in pounds per hour are less than one-half of the emission limit.

(ii) The Permittee shall conduct performance test every 5 years for VOC, and if requested by AMS for Heavy Metals.

(iii) The test protocol shall be submitted to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(iv) Testing shall meet the requirements of 40 CFR Part 60, Subpart J and 40 CFR Part 63, Subpart UUU for determining compliance with any limits from these regulations and the PA Stack Testing Manual.

(v) The 1232 FCCU process rate during testing shall be at a minimum of 95% of the highest daily process rate achieved by the unit since re-starting.

(3) The permittee shall conduct a performance test at the 868 FCCU and 1232 FCCU exhaust stacks to establish emission factors and demonstrate compliance with ammonia slip requirements.

(i) NH3 emissions shall be determined using the average of 3 one-hour tests per the EPA Reference Method CTM 027 or ASTM Method D6348-03.

(ii) The performance test shall be conducted no later than 90 days after start-up.

(iii) The permittee shall submit a stack test protocol to Air Management Services at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing.

(iv) If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, the

Permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates.

(v) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, PES must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher rate.

(vi) The 19% ammonia solution injection rate may not exceed a rate established under an AMS approved stack test that assures the ammonia slip level is not exceeded. The initial maximum rate shall be 7 gallons/hr until a different rate is established and approved by AMS. The ammonia slip rate (lb/hr) is expected to vary with injection rate. Therefore, compliance with the 12-month rolling ammonia limit will be based upon source test results and a method approved by AMS.

(vii) If no NH3 is being added, NH3 emissions are assumed to be negligible.

(4) The following methods shall be used to demonstrate compliance:

(i) Modified Method 8 shall be used to demonstrate compliance with H2SO4 limits.

(ii) Method 25A shall be used to demonstrate compliance with VOC limits.

(iii) Method 5B and 202 shall be used to demonstrate compliance with PM emission limits

(iv) Method 7E shall be used to demonstrate compliance with the NOx limits.

(v) Method 6C shall be used to demonstrate compliance with the SO2 limits.

(5) The Permittee shall conduct a periodic performance test for PM or Ni for each catalytic cracking unit at least once every 5 years according to the requirements in Table 4 of 40 CFR Subpart UUU [40 CFR 63.1571(a)(5), 40 CFR Subpart UUU]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

FCCU 868

(1) The FCCU Unit 868 shall be equipped with continuous monitors and recorders for stack flow rate, NOx (including NO2), SO_2, CO, and Opacity for compliance determination with the emission limitations [AMS Plan Approval No. 00184, dated March 22, 2002]

(i) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

(2) The Permittee shall install instrument to continuously monitor O2 level in the regenerator exhaust for correcting the data for excess air. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(3) For FCCU 868, the Permittee shall demonstrate compliance with the SO_2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 25 PA Code Chapter 139 procedures. [Permit No. SO2-95-039]

(4) For FCCU 868, the Permittee shall monitor the process rate on a daily basis. [Permit No. SO2-95-039]

(5) The Permittee shall monitor ammonia emissions on a monthly basis to demonstrate compliance with ammonia emission limits in Condition 21(a)(2)(iii). The compliance demonstration shall be based on AMS-approved stack tests. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(6) The Permittee shall monitor daily ammonia usage, and continuously monitor the ammonia injection rate to ensure compliance with ammonia slip and emissions requirements as described in 21.(a)(2)(iii) and 21.(a)(2)(iv). [AMS Plan Approval IP16-000225, dated 30 April 2018]

(7) The Permittee shall continuously monitor the inlet velocity to the primary cyclones of the catalytic cracking unit catalyst regenerator during periods of start-up, shut-down and hot standby for the 868 FCCU. [AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(8) The Permittee shall monitor the daily feed rate for Unit 1232 FCC (in relation to P120, the FCC regenerator).

(9) The Permittee shall daily monitor FCCU emissions for SO_2, CO, NOx, Particulate/PM_{10}, VOC, H_2SO_4, and Ammonia

(i) SO2 emission shall be monitored on a 7-day rolling average to demonstrate compliance with the SO_2 emission limits. [40 CFR 60.107(b)(4), AMS Plan Approval 11353, dated 7/30/12]

(10) The Permittee shall monitor the daily process rate of the FCCU and ammonia slip [AMS Plan Approval 11353, dated 7/30/12].

(11) The Wet Gas Scrubber (WGS) System shall continuously monitor the pressure of the water supplied at the discharge of the recirculation pumps supplying water to the EDV-6000 Agglo-Filtering modules, and the flue gas pressure drop across the Agglo-Filtering modules in accordance with the alternative monitoring method for opacity approved by EPA and as established during the most recent performance test [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].

(12) The Permittee shall daily monitor the type of scrubbing liquid and average pH of the scrubbing liquid at the outlet, as established during the performance test [AMS Plan Approval 04322, dated February 28, 2006].

(13) The Permittee shall monitor the following parameter to assure compliance parameter ranges established with the most recent AMS approved stack test. [AMS Plan Approval 11353, dated 7/30/12].

(i) AFM Recycle Pump Pressure shall be monitored and recorded continuously

(ii) WGS Flue Gas Delta P across the AFM section shall be monitored and recorded continuously

(iii) pH of scrubbing liquid shall be monitored and recorded continuously

(iv) Upper Agglo Pressure shall be monitored and recorded manually on a monthly basis.

(14) The Permittee shall install and monitor an instrument to continuously monitor and record stack flow, NOx, SO_2, CO, and O2 in accordance with PA Continuous Source Monitoring Manual. [AMS Plan Approval 11353, dated 7/30/12].

(i) Moisture shall be calculated based on AMS approved levels based on historical data.

(ii) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

(15) For CD004 (the CO Boiler at the 1232 FCCU), CO emissions shall be monitored using a continuous emission monitoring system (CEMS).

(16) Continuous emission monitoring system (CEMS) of CD004 (CO Boiler) shall monitor either the concentration of H_2S in the fuel gas does not exceed 0.1 gr/dscf or that the concentration of SO_2 in the exhaust gas of the scrubber does not exceed 20 ppm (dry basis, zero percent air) on a 3-hour average. [AMS Plan Approval 04322, dated February 23, 2006]

(17) The Permittee shall monitor average coke burn-off rate and hours of operation daily. The average coke burn-off shall be calculated using Equation 1 in 40 CFR 63.1564 (as follows) and hours of operation for the catalyst regenerator. [AMS Plan Approval 11353, dated 7/30/12].

$$R_c = K_1 Q_r(\%\,CO_2 + \%\,CO) + K_2 Q_a - K_3 Q_r\left(\%\,CO_2 + \frac{\%\,CO}{2} + \%O_2\right) + K_3 Q_{oxy}(\%O_{xy})$$

Where:

R_c = Coke burn-off rate, kg/hr (lb/hr)

Q_r = Volumetric flow rate of exhaust gas from catalyst regenerator before adding air or gas streams.

Q_a = Volumetric flow rate of air to catalytic cracking unit catalyst regenerator, as determined form instruments in the catalytic cracking unit control room, dscm/min (dscf/min)

% CO_2 = Carbon dioxide concentration in regenerator exhaust, percent by volume (dry basis)

% CO = Carbon monoxide concentration in regenerator exhaust, percent by volume (dry basis)

% O_2 = Oxygen concentration in regenerator exhaust, percent by volume (dry basis)

K_1 = Material balance and conversion factor, 0.2982 (kg-min)/hr-dscm-%) (0.0186 (lb-min)/(hr-dscf-%))

K_2 = Material balance and conversion factor, 2.088(kg-min)/hr-dscm-%) (0.1303 (lb-min)/(hr-dscf-%))

K_3 = Material balance and conversion factor, 0.0994 (kg-min)/hr-dscm-%) (0.0062 (lb-min)/(hr-dscf-%))

Q_{oxy} = Volumetric flow rate of oxygen-enriched air stream to regenerator, as determined form instruments in the catalytic cracking unit control room, dscm/min (dscf/min)

$\%O_{xy}$ = Oxygen concentration in oxygen-enriched air stream, percent by volume (dry basis)

(18) The Permittee shall monitor and calculate PM emission using Equation 2 in 40 CFR 63.1564

$$E = (K \times C_s \times Q_{sd}) / R_c$$

Where:

E = Emission rate of PM, kg/1,000 kg (lb/1,000 lb) of coke burn-off;

C_s = Concentration of PM, g/dscm (lb/dscf);
Q_{sd} = Volumetric flow rate of the catalytic cracking unit catalyst regenerator flue gas as measured by Method 2 in appendix A to 40 CFR Part 60, dscm/hr (dscf/hr);
R_c = Coke burn-off rate, kg coke/hr (1,000 lb coke/hr); and
K = Conversion factor, 1.0 (kg^2 /g)/(1,000 kg) (1,000 lb/(1,000 lb)).

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

FCCU 868

(1) For FCCU 868, the Permittee shall record the process rate on a daily basis. [Permit No. SO2-95-039]

(2) The Permittee shall keep records demonstrating compliance with the emission limits for FCCU 868. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(i) Compliance with ammonia, PM, and HC limits shall be based on AMS-approved stack tests.

(ii) Compliance with SO2, CO, and NOx limits shall be based on CEMS and continuous flow monitor data. Records shall be in the same units and averaging periods as the emission limits.

(3) The Permittee shall keep continuous records of ammonia injection rates, and shall keep monthly records of ammonia emissions to demonstrate compliance with rolling 12-month ammonia emission limit. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(4) The Permittee shall keep ammonia stack test records. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(5) The Permittee shall keep continuous emission records for O2 level in the regenerator exhaust. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(6) The Permittee shall keep continuous records of the inlet velocity to the primary cyclones of the catalytic cracking unit catalyst regenerator during periods of start-up, shut-down and hot standby for the 868 FCCU. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(7) The Permittee shall keep records of all periods of start-up, shut-down, and hot standby for the 868 FCCU. [AMS Plan Approval IP16-000225, dated 30 April 2018]

(8) All records shall be kept for a minimum period of 5 years and produced upon request by AMS. [AMS Plan Approval IP16-000225, dated 30 April 2018]

FCCU 1232

(9) The Permittee shall record the following: [AMS Plan Approval 11353, dated 7/30/12]

(i) The NOx, CO, and SO2 concentrations and the rolling 365-day emission limits shall be calculated based on 0% O2 and stack flow on a part per million (ppm) basis, hourly basis in lbs/hr, daily basis in lbs/day, and a rolling 12-month basis calculated monthly in tons per year (tpy).

(ii) PM/PM-10, H2SO4, VOC, and Ammonia shall keep record of stack test.

(iii) PM/PM-10, H2SO4, VOC, and Ammonia shall be determined based on approved stack test, daily records of average coke burn-off rate for the

FCCU using Equation 1 in 40 CFR 63.1564 and the hours of operation for the catalyst regenerator.

(10) The FCCU process rate daily and on a 365-day rolling average, calculated daily [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].

(11) The Permittee shall record the following parameter to assure compliance parameter ranges established with the most recent AMS approved stack test. [AMS Plan Approval 11353, dated 7/30/12].

(i) AFM Recycle Pump Pressure shall be monitored and record continuously

(ii) WGS Flue Gas Delta P across the ASM section shall be monitored and record continuously

(iii) pH of scrubbing liquid shall be monitored and record continuously

(iv) Upper Agglo Pressure shall be monitored and record manually on a monthly basis.

(12) The Permittee shall record the average coke burn-off rate and hours of operation daily. The average coke burn-off shall be calculated using Equation 1 in 40 CFR 63.1564 and hours of operation for the catalyst regenerator. [AMS Plan Approval 11353, dated 7/30/12].

(13) Ammonia Slip (after SCR but before WGS) shall be continuously recorded calculated in accordance with Section 21(b)(19) [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].].

(14) The Permittee shall keep records of the CO CEMS for CD04 (CO Boiler).

(f) Reporting Requirements

(1) The Permittee shall submit CEM and production reports for each FCCU to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

(2) The Permittee shall demonstrate continuous compliance by operating and maintaining records to document conformance with the procedures in the OMMP [40 CFR 63.1564(c)(2)].

(3) The Permittee shall submit *(semi-annually)* reports of excess emission in accordance with 40 CFR 60.7(c) determined as follows. [40 CFR 60.105(e)]

(i) Carbon monoxide: All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system exceeds 500 ppm.

(ii) All averages shall be determined as the arithmetic average of the applicable 1-hour averages.

(4) The Permittee shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 107(g)]

(5) For 1232 FCCU, CEM reports must meet the requirements of PA CSMM. The reports must also list any periods when the CO Boiler burns fuel gas with H2S content greater than 0.1 gr/dscf [AMS Plan Approval 04322, dated February 28, 2006]

(6) The Permittee shall keep records and submit reports in accordance with 40 CFR §60.107 and 40 CFR §63, Subpart UUU [AMS Plan Approval 04322, dated February 28, 2006].

(7) Whenever the CO Boiler is not in operation, the Permittee shall forward to AMS on a weekly basis all hourly averages of CO which exceed 1% by volume of exhaust gases. Reports shall be in accordance with the format and procedures contained in the PA DEP Continuous Source Monitoring Manual. [25 Pa. Code §127.511 & AMR I Sec. II]

22. Group 19 - Inter-Refinery Pipeline Equipment

Point Breeze equipment numbered P-664

(a) Emission Limitations

(1) VOC emission increase due to the operation of the Inter-Refinery Pipeline Project shall not exceed 12 tons per rolling 12-month period. Compliance with this limit is assured by maintaining an LDAR program. [AMS Installation Permit No. 94055 dated 5/9/94]

(b) Work Practice Standards

(1) The Permittee shall utilize an LDAR program as described for Group 06, Section D.7.(a).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Same requirements as Group 06, Section D.7(c).

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Same requirements as Group 06, Section D.7(d).

23. Group 20 – Alkylation

Girard Point equipment numbered P182 and CD014 (Flare for P182). Point Breeze equipment numbered P662, CD111 (Flare for P662) and CD112 (Flare for P662).

(a) Emission Limitations

(1) VOC emission from the 869 Alkylation plant (P662) shall not exceed 15.44 tons per rolling 12-month period [AMS Plan Approval 03163, dated 2/5/04].

(b) Work Practice Standards

(1) For P182, SHU catalyst treatment gas shall be routed to a flare that conforms with HAP control requirements under 40 CFR 63.11(b). [Plan Approval Nos. 99128 and 99093, paragraph 3, dated January 28, 2000, Plan Approval 03124, dated January 14, 2004]

(2) For P182, Unit 433 alkylate production shall be limited to 30,000 barrels per day on a rolling 365 day average. [AMS Plan Approval Nos. 06050, dated 12/4/06]

(3) For P662, Unit 869 Alkylation plant Olefin feed shall not exceed 8,500 barrels per stream day and 2,737,500 barrels in any 12-month rolling period [AMS Plan Approval IP17-000086 Dated 17 October 2017].

(4) For 869 Alkylation Unit P662 - If the alternative is not done as per 40 CFR 60.693-1 then the following standards for individual drain systems shall take place:

(i) Each drain shall be equipped with water seal controls. [40 CFR 60.692-2(a)(1)]

(ii) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls. [40 CFR 60.692-2(a)(2)]

(iii) Except as provided in 40 CFR 60.692-2(a)(4), each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions. [40 CFR 60.692-2(a)(3)]

(iv) As an alternative to the requirements in 40 CFR 60.692-2(a)(3), if the Permittee elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed. [40 CFR 60.692-2(a)(4)]

(v) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(a)(5)]

(vi) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter. [40 CFR 60.692-2(b)(1)]

(vii) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. [40 CFR 60.692-2(b)(2)]

(viii) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge. [40 CFR 60.692-2(b)(3)]

(ix) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(b)(4)]

(x) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.692-2(c)(1)]

(xi) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.692-2(c)(2)]

(xii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(c)(3)]

(xiii) Except as provided in 40 CFR 60.692-2(e), each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section. [40 CFR 60.692-2(d)]

(xiv) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin. [40 CFR 60.692-2(e)]

(5) For 869 Alkylation Unit P662 - Access doors and other openings

(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions. [40 CFR 60.693-2(a)(5)(i)]

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-2(a)(5)(ii)]

(iii) The Permittee must notify the EPA Administrator and AMS in the report required by 40 CFR 60.7 that they have elected to construct and operate a floating roof. [40 CFR 60.693-2(b). This permit condition assures compliance with 25 Pa Code 129.55(a)(2)]

(iv) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of 40 CFR 60.692-3(a) shall be installed. [40 CFR 60.693-2(c). This permit condition assures compliance with 25 Pa Code 129.55(a)(1)]

(v) Except as provided in 40 CFR 60.693-2(c), if a Permittee elects to comply with the provisions of 40 CFR 60.693-2, then the Permittee does not need to comply with the provisions of 40 CFR 60.692-3 or 40 CFR 60.694 applicable to the same facilities. [40 CFR 60.693-2(d)]

(vi) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA Administrator and AMS which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]

(6) Flare requirements. (see Group 03)

(9) Gas components routed to a flare shall go to a flare that conforms to HAP control requirements under 40 CFR §63.11(b)

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:]

(1) The Permittee shall monitor VOC emissions from 869 Alkylation plant.
(2) The Permittee shall monitor daily and rolling 12-month 869 Alkylation plant olefin feed rate calculated monthly.
(3) Monitoring is required for the flare - see Group 3, Section D.4.(d).
(4) The Permittee shall monitor daily that for P182, Unit 433 alkylate production is limited to 30,000 barrels per day on a rolling 365 day average.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) For P662, Unit 869, VOC emission calculations to show compliance with Group 20, Section D.23.(a)(1) [AMS Plan Approval 03163, dated 2/5/04].
(2) For P662, Unit 869, Daily Olefin feed rate and rolling 12-month feed rate calculated monthly to demonstrate compliance with Group 20, Section D.23.(b)(3) [AMS Plan Approval 03163, dated 2/5/04].
(3) For P182, Unit 433 alkylate, record the production rate daily and on a 365-day rolling average, calculated daily. [AMS Plan Approval 06050].
(4) The Permittee shall record daily that for P182, Unit 433 alkylate production is limited to 30,000 barrels per day on a rolling 365 day average. [AMS Plan Approval 06050 dated 12/4/2006]

~~24.Group 21 – Hydrogen purification equipment~~

~~Point Breeze equipment numbered P674.~~

~~(a) Work Practice Standards~~

~~(1) Same requirements as for Group 06, Section D.7(a). [25 PA Code §129.58 (a)(2)]~~
~~(2) Pumps and compressors. All pumps and compressors handling volatile organic compounds with a vapor pressure of greater than 1.5 psi (10.3 kilopascals) at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100°F (37.8°C) shall be used. [AMS letter dated 4/14/94; 25 PA Code §129.55(b)]~~

~~(b) Testing Requirements~~

~~[25 PA Code §139]~~
~~(1) Same requirements as for Group 06, Section D.7(b). [25 PA Code §139.14(b)(4)]~~
~~(2) Compressors in hydrogen service are exempt from the requirements of 40 CFR 60.592 if the Permittee demonstrates that a compressor is in hydrogen service. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(1)]~~
~~(3) Each compressor is presumed not to be in hydrogen service unless the Permittee demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in~~

~~ASTM E-260, E-168, or E-169 shall be used. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(2)]~~

~~(4) The Permittee may use engineering judgment rather than procedures in 40 CFR 60.593(b)(2) to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When the Permittee and the EPA Administrator or AMS do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph 40 CFR 60.593(b)(2) shall be used to resolve the disagreement. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(3)]~~

~~(c) Monitoring Requirements~~

~~[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]~~

~~The Permittee shall monitor the following:~~

~~(1) Same requirements as Group 06, Section D.7(c). [25 PA Code §129.58(g]~~

~~(2) Monitor equipment with the hydrogen purification unit. [AMS letter dated 4/14/94]~~

~~(d) Recordkeeping Requirements~~

~~[25 PA Code §§127.511, 135.21, 135.5 & 139]~~

~~The Permittee shall keep the following records:~~

~~(1) Same as Group 06, Section D.7(d). [25 PA Code §129.58(g)]~~

~~(2) Record equipment with the hydrogen purification unit. [AMS letter dated 4/14/94]~~

~~(e) Reporting Requirements~~

~~(1) Same requirements as for Group 06, Section D.7(e). [25 PA Code §129.58(g)]~~

~~(f) Non-Applicable requirements~~

~~(1) The Permittee is not applicable to the regulations for wastewater separators in 25 Pa Code 129.55(a)(1) and (a)(2) or vacuum-producing systems in 25 Pa Code 129.55.~~

25. Group 22 – Degreasing Vats

Girard Point equipment numbered P108 (PB Fab/Machine Shop small parts degreasers)

(a) Emissions

(1) VOC emissions from each part cleaner/cold cleaning machine shall not exceed 2.7 tons per rolling 12-month basis. [Installation Permit No. 12070-12071, dated May 21, 2012].

(b) Work Practice Standards

(1) No solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated HAP solvents, in a total concentration greater than 5 percent by weight, may be used as a cleaning and/or drying agent in any degreaser. [Exempt from 40 CFR §63.460]

(2) The Permittee shall not use any solvent subject to the Federal National emissions standards for hazardous air pollutants (NESHAP) for halogenated solvent cleaners under 40 CFR Part 63 (relating to National emissions standards for hazardous air pollutants for source categories). [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(3) Cold cleaning degreasers which have a degreaser opening which is greater than 10 square feet shall be equipped with:

(i) A cover to prevent evaporation of solvent during periods of non-use. [25 PA Code 129.63(a)(1)(i)]

(ii) Equipment for draining cleaned parts. [25 PA Code 129.63(a)(1)(ii)]

(iii) A permanent, conspicuous label summarizing the operating requirements. [25 PA Code 129.63(a)(1)(iii)]

(4) Be operated in accordance with the following requirements:

(i) Do not dispose of waste solvent or transfer it to another party, such that greater than 20% for the waste solvent (by weight) can evaporate into the atmosphere; store waste solvent only in covered containers. [25 PA Code129.63(a)(2)(i)]

(ii) Close degreaser cover whenever not handling parts in the cleaner. [25 PA Code 129.63(a)(2)(ii)]

(iii) Drain cleaned parts for at least 15 seconds or until dripping ceases. [25 PA Code 129.63(a)(2)(iii)]

(5) Each parts cleaner/cold cleaning machine shall: [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(i) Immersion cold cleaning machines shall have a freeboard ratio of 0.50 or greater [25PA Code 129.63(a)(1)]

(ii)Immersion cold cleaning machines and remote reservoir cold cleaning machines shall have a permanent, conspicuous label summarizing the operating requirements in Section D.25(5)(iv). In addition, the label shall include the following discretionary good operating practices: [25PA Code 129.63(a)(2)(i)]

(A) Cleaned parts should be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts should be positioned so that solvent drains directly back to the cold cleaning machine.

(B) When a pump-agitated solvent bath is used, the agitator should be operated to produce a rolling motion of the solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned.

(C) Work area fans should be located and positioned so that they do not blow across the opening of the degreaser unit.

(iii)Be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage

reservoir, a perforates drain with a diameter of not more than 6 inches shall constitute an acceptable cover. [25PA Code 129.63(a)(2)(ii)]

(iv) Cold Cleaning Machines shall be operated in accordance with the following procedures: [25PA Code 129.63(a)(3)]

(A) Waste solvent shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(B) Flushing of parts using a flexible hose or other flushing device shall be performed only within the cold cleaning machines. The solvent spray shall be a solid fluid stream, not a atomized or shower spray.

(C) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the cold cleaning machine.

(D) Air agitated solvent baths may not be used.

(E) Spills during solvent transfer and use of the cold cleaning machine shall be cleaned up immediately.

(v) The Permittee may not use, sell or offer for sale for use in a cold cleaning machine any solvent with a vapor pressure of 1.0 millimeter of mercury (mm Hg) or greater and containing greater than 5% VOC by weight, measured at 20C (68F) containing VOCs [25PA Code 129.63(a)(4)]

(A) The above condition does not apply: [25PA Code 129.63(a)(7)]

(I) To cold cleaning machines used in extreme cleaning service;

(II) If the owner or operator of the cold cleaning machine demonstrates, and AMS approves in writing, that compliance will result in unsafe operating conditions;

(III) To immersion cold cleaning machines with a freeboard ratio equal to or greater than 0.75.

(vi) If a person sells or offers for sale any solvent containing VOCs for use in a cold cleaning machine, the person shall provide to the purchaser, the following written information: [25PA Code 129.63(a)(7)]

(A) The name and address of the solvent supplier

(B) The type of solvent including the product or vendor identification number

(C) The vapor pressure of the solvent measured in mm Hg at 20C (68F)

(i) VOC material shall be kept in covered containers when not in use. [AMR V, Sec. XIII.A.2].

(6) For 869 Alkylation Unit P662 - Sewer Lines.

(i) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.693-1(e)(1)]

(ii) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.693-1(e)(2)]

(iii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after

identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-1(e)(3)]

(c) Monitoring Requirements

25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The concentration of these solvents may be determined using EPA test method 18, material safety data sheets, or engineering calculations. [40 CFR 63.460(a)]

(2) Proper operation of parts cleaner/cold cleaning machine in accordance with manufacturer's recommended operations and maintenance [Installation Permit 12070-71, dated May 21, 2012]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Records of the type and amount of any solvent with a vapor pressure that is greater than 0.3 kilopascals at 20 degrees Celsius that is added to the vats.

(2) Documentation of the concentration of solvents as determined using EPA test method 18, material safety data sheets, or engineering calculations.

(3) For the parts cleaner/cold cleaning machine, Permittee shall keep the following records: [Installation Permit No. 12070-71, dated May 21, 2012]

(i) monthly solvent usage.

(ii) VOC and HAP content of the solvent added to the parts cleaner/cold cleaner machine.

(iii) VOC emission on a monthly and rolling 12-month basis.

(iv) Records shall be kept for a period of 5 years and shall be produced upon request.

(4) For sewer lines subject to 40 CFR 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.693-1(e) when a problem is identified that could result in VOC emissions. [40 CFR 60.697(b)(3)]

(5) For completely closed drain systems subject to 40 CFR 60.693-1, the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions. [40 CFR 60.697(d)]

(6) Delay of Repair

(i) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded. [40 CFR 60.697(e)(1)]

(ii) The reason for the delay shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time. [40 CFR 60.697(e)(2)]

(iii) The signature of the Permittee (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded. [40 CFR 60.697(e)(3)]

(iv) The date of successful repair or corrective action shall be recorded. [40 CFR 60.697(e)(4)]

(6) A copy of the design specifications for all applicable equipment shall be kept for the life of the source in a readily accessible location. [40 CFR 60.697(f)(1)]

(7) The following information pertaining to the design specifications shall be kept. [40 CFR 60.697(f)(2)]

(i) Detailed schematics, and piping and instrumentation diagrams. [40 CFR 60.697(f)(2)(i)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.697(f)(2)(ii)]

(7) If the Permittee elects to install a tightly sealed cap or plug over a drain that is out of active service, the Permittee shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains. [40 CFR 60.697(g)]

(e) Reporting Requirements

(1) The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]

(2) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]

(3) If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]

(4) The Permittee shall submit an excess emission and continuous monitoring system performance report and or a summary report to AMS and EPA semiannually. [AMS Plan Approval 03163 dated 2/5/04]

(f) Non-Applicable Requirements

(1) This group is not applicable to the oil-water separator requirements of 40 CFR 60.693-2. This group does not have an independent oil-water separator with a floating roof. This unit sewer system drains to the refinery oily water system which complies with 40 CFR 61 Subpart FF (Group 25A, Section D.27).

26. Group 23 – Butane Isomerization

Girard Point equipment numbered P121

(a) Work Practice Standards

(1) The Permittee shall reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. The vent stream shall be introduced into the flame zone of the boiler or process heater. [40 CFR 60.662(a)]

(b) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee who seeks to demonstrate compliance with 40 CFR 60.702(a) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system. [40 CFR 60.705(s) and USEPA Region III letter to AMS dated March 29, 1994, paragraph 5]

(c) Non-Applicable Requirements

(1) The EPA has determined that the performance testing and monitoring requirements under NSPS Subpart NNN are waived for the Permittee for vent streams that are combusted as primary fuel in boilers and process heaters. All vent streams from distillation columns, reactors, etc. are accumulated and ducted into the facility fuel gas line. [USEPA Region III letter to AMS dated March 29, 1994, paragraph 4]

27. Group 25A – Refining Wastewater

This section applies to Group 1 (as defined in 40 CFR 63.641) wastewater streams associated with petroleum refining process units – all units except Benzene and Cumene Production Units, Tank Truck Loading and Railcar Unloading (P-180, P-181, P-129 & P-183).

Girard Point equipment numbered P131, CD002 (Carbon Adsorber for P141), P132, and CD003 (Carbon Adsorber for P132). Point Breeze equipment numbered P639 and CD105 (Carbon Adsorber for P639).

Girard Point equipment P114, and CD010 (Carbon Adsorber for P114). Point Breeze equipment numbered P640, CD106 (Carbon Adsorber for P640), P641, CD107 (Carbon Adsorber for P641), and P667.

EFRTs storing stormwater and process water – Girard Point P141, P142, and CD007 (Carbon Adsorber for P141). Point Breeze equipment numbered P624 and P627.

IFRs – Girard Point Tanks P-012, P-134, P-135, P-136, P-137, P-156, P-160, P-174, and Point Breeze Tanks – P-547, P-575

EFRs – Girard Point Tanks P-006, P-155, P-162 and Point Breeze Tanks – P-521, P-546, P-587, P624, P-627

(a) Work Practice Standards

(1) The Permittee shall meet the following standards for each tank [40 CFR 61.343, 40 CFR 61.351(a)(2)]

(i) Internal Floating Roof Tanks

(A) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(B) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(1) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(2) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(3) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(C) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(D) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(E) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(F) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(G) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(H) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(I) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(xi)]

(ii) External Floating Roof Tanks

(A) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(1) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. The seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(a) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(i) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(ii) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(2) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion

(a) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(i) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(ii) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(iii) There are to be no holes, tears, or other openings in the seal or seal fabric.

(B) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is

floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(C) The external floating roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(2) The Permittee shall meet the following standard for containers [40 CFR 61.345]

(i) The Permittee shall install, operate, and maintain a cover on each container used to handle, transfer, or store waste in accordance with the following requirements:

(A) The cover and all openings (e.g., bungs, hatches, and sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in 40 CFR§61.355(h)

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.

(ii) When a waste is transferred into a container by pumping, the Permittee shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe, and those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover

(iii) Each cover and all openings shall be visually inspected initially and quarterly thereafter to ensure that they are closed and gasketed properly.

(iv) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(3) The Permittee shall meet the following standard for individual drain system [40 CFR 61.346(b)]

(i) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.

(ii) Each junction box shall be equipped with a cover and may have a vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(A) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(B) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:

(1) Equip the junction box with a system to prevent the flow of organic vapors from the junction box vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box. A flow indicator shall be installed, operated, and maintained on each junction box vent pipe to ensure that organic vapors are not vented from the junction box to the atmosphere during normal operation.

(2) Connect the junction box vent pipe to a closed-vent system and control device in accordance with §61.349 of this subpart.

(iii) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(iv) When a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(4) The Permittee shall meet the following standard for oil-water separators [40 CFR 61.347]

(i) The Permittee shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(ii) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR §61.355(h).

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for

waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph Section 27(a)(4)(ii)(B) does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR§61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.

(5) The Permittee shall meet the following standard for treatment process [40 CFR 61.348]

Rather than treating the waste onsite, the Permittee shall comply with 40 CFR 61.342(c)(1)(i) by transferring the waste offsite to another facility where the waste is treated in accordance with the requirements of 40 CFR 61.342(c)(1)(i). The Permittee shall: [40 CFR 61.342(f)]

(i) Comply with the standards specified in 40 CFR 61.343 through 61.347 for each waste management unit that receives or manages the waste prior to shipment of the waste offsite. [40 CFR 61.342(f)(1)]

(ii) Include with each offsite waste shipment a notice stating that the waste contains benzene which is required to be managed and treated in accordance with the provisions of subpart FF of 40 CFR 61. [40 CFR 61.342(f)(2)]

(6) The Permittee shall meet the following standard for closed-vent systems and control devices [40 CFR 61.348]

(i) The Permittee shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:

(A) The closed-vent system shall:

(1) Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR §61.355(h).

(2) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes.

(a) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(b) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.

(c) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(d) One or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(ii) A vapor recovery system (carbon adsorption system) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(iii) Each closed-vent system and control device shall be operated at all times when waste is placed in the waste management unit vented to the control device except when maintenance or repair of the waste management unit cannot be completed without a shutdown of the control device.

(iv) The Permittee shall demonstrate that the efficiency of the vapor recovery system (carbon adsorption system) in Section D.27(a)(6)(ii), by using one of the following methods:

(A) Engineering calculations in accordance with requirements specified in 40 CFR§61.356(f); or

(B) Performance tests conducted using the test methods and procedures that meet the requirements specified in 40 CFR §61.355.

(v) The Administrator may request at any time an owner or operator demonstrate that a control device meets Section D.27(a)(6)(ii) by conducting a performance test using the test methods and procedures as required in 40 CFR §61.355.

(vi) Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections.

(vii) If visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(viii) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with 40 CFR§61.354(c).

(8) For 869 Alkylation Unit P662 and 870 Hydrodesulfurization Unit Individual Drain System Requirements [40 CFR 60 Subpart QQQ]

(i) The Permittee may elect to construct and operate a completely closed drain system. [40 CFR 60.693-1(a)]

(ii) Each completely closed drain system shall be equipped and operated with a closed vent system and control device (flare). [40 CFR 60.693-1(b)]

(iii) The Permittee must notify the EPA Administrator and AMS in the report required in 40 CFR 60.7 that they have elected to construct and operate a completely closed drain system. [40 CFR 60.693-1(c)]

(iv) If the Permittee elects to comply with the provisions of section 40 CFR 60.693-1, then they do not need to comply with the provisions of 40 CFR 60.692-2 or 40 CFR 60.694. [40 CFR 60.693-1(d)]

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee shall test equipment for compliance with no detectable emissions as required in 40 CFR 61.343 through 40 CFR 61.347, and 40 CFR 61.349 in accordance with the following requirements: [40 CFR 61.355(h)]

(i) Monitoring shall comply with method 21 from appendix A of 40 CFR part 60. [40 CFR 61.355(h)(1)]

(ii) The detection instrument shall meet the performance criteria of method 21. [40 CFR 61.355(h)(2)]

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in method 21. [40 CFR 61.355(h)(3)]

(iv) Calibration gases shall be: [40 CFR 61.355(h)(4)]

(A) Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 61.355(h)(4)(i)]

(B) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane. [40 CFR 61.355(h)(4)(ii)]

(v) The background level shall be determined as set forth in method 21. [40 CFR 61.355(h)(5)]

(vi) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface described in method 21. [40 CFR 61.355(h)(6)]

(vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance. [40 CFR 61.355(h)(7)]

(2) The Permittee shall determine the annual waste quantity at the point of waste generation by one of the methods provided below: [40 CFR 61.355(b)]

(i) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility; [40 CFR 61.355(b)(5)]

(ii) Use the maximum design capacity of the waste management unit; or [40 CFR 61.355(b)(6)]

(iii) Use measurements that are representative of maximum waste generation rates. [40 CFR 61.355(b)(7)]

(3) Knowledge of the waste. The Permittee shall provide sufficient information to document the flow-weighted annual average benzene concentration of each waste stream. Examples of information that could constitute knowledge include material balances, records of chemicals purchases, or previous test results provided the results are still relevant to the current waste stream conditions. If test data are used, then the Permittee shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the flow-weighted annual average benzene concentration for the waste stream. When the Permittee and the EPA Administrator and AMS do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under 40 CFR 61.355(c)(3) shall be used to resolve the disagreement. [40 CFR 61.355(c)(2)]

(4) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in 40 CFR 61.355(c)(3). The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(d)]

(5) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(ii) shall determine the percent reduction of benzene in the waste stream on a mass basis by the following procedure: [40 CFR 61.355(e)]

(i) The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown,

and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(e)(1)]

(ii) All testing equipment shall be prepared and installed as specified in the appropriate test methods. [40 CFR 61.355(e)(2)]

(iii) The mass flow rate of benzene entering the treatment process (Eb) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows: [40 CFR 61.355(e)(3)]

$E_b = K / (n * 10^6) [V_i C_l]$

Where:

E_b = Mass flow rate of benzene entering the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste entering the treatment process during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream entering the treatment process during each run i, ppmw.

n = Number of runs.

(iv) The mass flow rate of benzene exiting the treatment process (Ea) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows: [40 CFR 61.355(e)(4)]

$E_a = K / (n * 10^6) [V_i C_l]$

Where:

E_a = Mass flow rate of benzene exiting the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste exiting the treatment process during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream exiting the treatment process during each run i, ppmw.

n = Number of runs.

(6) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(iii) shall determine the benzene destruction efficiency for the combustion unit by the following procedure: [40 CFR 61.355(f)]

(i) The test shall be conducted under conditions that exist when the combustion unit is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test. [40 CFR 61.355(f)(1)]

(ii) All testing equipment shall be prepared and installed as specified in the appropriate test methods. [40 CFR 61.355(f)(2)]

(iii) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows: [40 CFR 61.355(f)(3)]

$E_b = K / (n * 10^6) [V_i C_I]$

Where:

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste entering the combustion unit during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream entering the combustion unit during each run i, ppmw.

n = Number of runs.

(iv) The mass flow rate of benzene exiting the combustion unit exhaust stack shall be determined as follows: [40 CFR 61.355(f)(4)]

(A) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected and be the same time period at which the mass flow rate of benzene entering the treatment process is determined. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample and each 1-hour period shall correspond to the periods when the waste feed is sampled. [40 CFR 61.355(f)(4)(i)]

(B) A run shall consist of a 1-hour period during the test. For each run: [40 CFR 61.355(f)(4)(ii)]

(1) The reading from each measurement shall be recorded; [40 CFR 61.355(f)(4)(ii)(A)]

(2) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate. [40 CFR 61.355(f)(4)(ii)(B)]

(3) The average benzene concentration in the exhaust downstream of the combustion unit shall be determined using Method 18 from appendix A of 40 CFR part 60. [40 CFR 61.355(f)(4)(ii)(C)]

(C) The mass of benzene emitted during each run shall be calculated as follows: [40 CFR 61.355(f)(4)(iii)]

M_i = KVC (10 ^-6)

Where:

M_i = Mass of benzene emitted during run i, kg (lb).

V = Volume of air-vapor mixture exhausted at standard conditions, m^3 (ft^3).

C = Concentration of benzene measured in the exhaust, ppmv.

K = Conversion factor, 3.24 kg/m^3 (0.202 lb/ft^3).

(D) The benzene mass emission rate in the exhaust shall be calculated as follows: [40 CFR 61.355(f)(4)(iv)]

$E_a = M_i / T$

Where:

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

M_i = Mass of benzene emitted from the combustion unit during run i, kg (lb).

T = Total time of all runs, hr.

n = Number of runs.

(v) The benzene destruction efficiency for the combustion unit shall be calculated as follows: [40 CFR 61.355(f)(5)]

$R = ((E_b - E_a)/E_b) * 100)$

Where:

R = Benzene destruction efficiency for the combustion unit, percent.

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

(7) The Permittee using performance tests to demonstrate compliance of a wastewater treatment system unit with 40 CFR 61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in 40 CFR 61.355(c)(3). The test shall be conducted under conditions that exist when the wastewater treatment system

is operating at the highest inlet wastewater stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(g)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) For a waste stream to be exempt from 40 CFR 61.342(c)(1), the Permittee shall demonstrate, at least once per year, that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in 40 CFR 61.355(c)(2) or 40 CFR 61.355(c)(3). [40 CFR 61.342(c)(2)]

(2) For a waste stream to be exempt from 40 CFR 61.342(c)(1), the Permittee shall demonstrate, at least once per year, year that the all of the following conditions are met: [40 CFR 61.342(c)(3)(ii)]

(i) The Permittee does not choose to exempt process wastewater, [40 CFR 61.342(c)(3)(ii)(A)]

(ii) The total annual benzene quantity in all waste streams chosen for exemption in 40 CFR 61.342(c)(3)(ii) does not exceed 2.0 Mg/yr as determined in the procedures in 40 CFR 61.355(j), and [40 CFR 61.342(c)(3)(ii)(B)]

(iii) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated. [40 CFR 61.342(c)(3)(ii)(C)]

(3) If the Permittee complies with the requirements of 40 CFR 61.348(b), then the Permittee shall monitor each wastewater treatment system to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows: [40 CFR 61.354(b)]

(i) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of 40 CFR 61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in 40 CFR 61.355(c)(3). [40 CFR 61.354(b)(1)]

(ii) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in 40 CFR 61.355(c)(3). [40 CFR 61.354(b)(2)]

(4) The carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the

exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. [40 CFR 61.354(d)]

(i) The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.

(ii) As an alternative to conducting this monitoring, the Permittee may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.

(5) Equipments of the individual drain systems installed in accordance with Section D.27(a)(3)(i), (ii), & (iii) shall be inspected as follows: [40 CFR 61..346(b)(4)]

(i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.

(ii) Each drain using a tightly sealed cap or plug shall be visually inspected initially and thereafter quarterly to ensure caps or plugs are in place and properly installed.

(iii) Each junction box shall be visually inspected initially and thereafter quarterly to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.

(6) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) of the fixed-roof shall be monitored initially and once per year by the methods specified in 40 CFR §61.355(h) to determine compliance with SectionD.27(a)(4)(i)(A) [40 CFR 61.347(a)(1)(i)(A)]

(7) The closed-vent system shall be monitored initially and once per year by the methods specified in 40 CFR §61.355(h) to determine compliance with SectionD.27(a)(6)(i)(A)(1) [40 CFR 61.349(a)(1)(i)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of a facility subject to the provisions of 40 CFR 61 subpart FF shall comply with the recordkeeping requirements of 40 CFR 61.356. Each record shall be maintained in a readily accessible location at the facility site for a period not less than five years from the date the information is recorded. [40 CFR 61.356(a)]

(2) The Permittee shall maintain records that identify each waste stream at the facility subject to 40 CFR 61 subpart FF, and indicate whether or not the waste

stream is controlled for benzene emissions in accordance with 40 CFR 61 subpart FF. In addition the Permittee shall maintain the following records: [40 CFR 61.356(b)]

(i) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity. [40 CFR 61.356(b)(1)]

(ii) For each waste stream exempt from 40 CFR 61.342(c)(1) in accordance with 40 CFR 61.342(c)(3), the records shall include: [40 CFR 61.356(b)(2)]

(A) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters (0.005 gallons) per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr (11 ton/yr) in accordance with 40 CFR 61.342(c)(3)(i), or [40 CFR 61.356(b)(2)(i)]

(B) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with 40 CFR 61.342(c)(3)(ii). [40 CFR 61.356(b)(2)(ii)]

(iii) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with 40 CFR 61.356(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with 40 CFR 61.356(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with 40 CFR 61.356(a)(1)(iii). [40 CFR 61.356(b)(5)]

(3) The Permittee transferring waste off-site to another facility for treatment in accordance with 40 CFR 61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the facility receiving the waste, and a copy of the notice sent with the waste shipment. [40 CFR 61.356(c)]

(4) The Permittee using control equipment in accordance with 40 CFR 61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is

used, then the owner or operator shall maintain the control device records required by 40 CFR 61.356(f). [40 CFR 61.356(d)]

(5) The Permittee using a treatment process or wastewater treatment system unit in accordance with 40 CFR 61.348 shall maintain the following records. The documentation shall be retained for the life of the unit. [40 CFR 61.356(e)]

(i) A statement signed and dated by the Permittee certifying that the unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content expected to occur. [40 CFR 61.356(e)(1)]

(ii) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the Permittee shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams, and other documentation necessary to demonstrate the unit performance. [40 CFR 61.356(e)(2)]

(iii) If performance tests are used to determine treatment process or wastewater treatment system unit performance, then the Permittee shall maintain all test information necessary to demonstrate the unit performance. [40 CFR 61.356(e)(3)]

(A) A description of the unit including the following information: type of treatment process; manufacturer name and model number; and for each waste stream entering and exiting the unit, the waste stream type (e.g., process wastewater, sludge, slurry, etc.), and the design flow rate and benzene content. [40 CFR 61.356(e)(3)(i)]

(B) Documentation describing the test protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the unit performance. The description of the test protocol shall include the following information: sampling locations, sampling method, sampling frequency, and analytical procedures used for sample analysis. [40 CFR 61.356(e)(3)(ii)]

(C) Records of unit operating conditions during each test run including all key process parameters. [40 CFR 61.356(e)(3)(iii)]

(D) All test results. [40 CFR 61.356(e)(3)(iv)]

(iv) If a control device is used, then the Permittee shall maintain the control device records required by 40 CFR 61.356(f). [40 CFR 61.356(e)(4)]

(6) The Permittee using a closed-vent system and a carbon adsorber shall maintain the following records. The documentation shall be retained for the life of the control device. [40 CFR 61.356(f)]

(i) A statement signed and dated by the Permittee certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit vented to the control device is or would be operating at the highest load or capacity expected to occur. [40 CFR 61.356(f)(1)]

(ii) If engineering calculations are used to determine control device performance in accordance with 40 CFR 61.349(c), then a design analysis for the control device that includes for example: [40 CFR 61.356(f)(2)]

(A) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the Permittee, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. For the carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon. [40 CFR 61.356(f)(2)(i)(F)]

(7) The Permittee shall maintain a record for each visual inspection required by 40 CFR 61.343 through 61.347 that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed. [40 CFR 61.356(g)]

(8) The Permittee shall maintain a record for each test of no detectable emissions required by 40 CFR 61.343 through 61.347 and 61.349. The record shall include the following information: date the test is performed, background level measured during test, and maximum concentration indicated by the instrument reading measured for each potential leak interface. If detectable emissions are measured at a leak interface, then the record shall also include the waste management unit, control equipment, and leak interface location where detectable emissions were measured, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed. [40 CFR 61.356(h)]

(9) For each treatment process and wastewater treatment system unit operated to comply with 40 CFR 61.348, the Permittee shall maintain documentation that includes the following information regarding the unit operation: [40 CFR 61.356(i)]

(i) Dates of startup and shutdown of the unit. [40 CFR 61.356(i)(1)]

(ii) If measurements of waste stream benzene concentration are performed in accordance with 40 CFR 61.354(a)(1), the Permittee shall maintain records that include date each test is performed and all test results. [40 CFR 61.356(i)(2)]

(iii) If a process parameter is continuously monitored in accordance with 40 CFR 61.354(a)(2), the Permittee shall maintain records that include a description of the operating parameter (or parameters) to be monitored to ensure that the unit will be operated in conformance with these standards and the unit's design specifications, and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the unit. [40 CFR 61.356(i)(3)]

(iv) If measurements of waste stream benzene concentration are performed in accordance with 40 CFR 61.354(b), the Permittee shall maintain records that include the date each test is performed and all test results. [40 CFR 61.356(i)(4)]

(v) Periods when the unit is not operated as designed. [40 CFR 61.356(i)(5)]

(10) For each control device, the Permittee shall maintain documentation that includes the following information regarding the control device operation: [40 CFR 61.356(j)]

(i) Dates of startup and shutdown of the closed-vent system and control device. [40 CFR 61.356(j)(1)]

(ii) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the control device. [40 CFR 61.356(j)(2)]

(iii) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when: [40 CFR 61.356(j)(3)]

(A) Any valve car-seal or closure mechanism required under 40 CFR 61.349(a)(1)(ii) is broken or the by-pass line valve position has changed. [40 CFR 61.356(j)(3)(i)]

(B) The flow monitoring devices required under 40 CFR 61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required. [40 CFR 61.356(j)(3)(ii)]

(iv) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time. [40 CFR 61.356(j)(9)]

(v) The Permittee shall maintain records of dates and times when the carbon adsorber is monitored, when breakthrough is measured, and shall record the date and time then the existing carbon in the control device is replaced with fresh carbon. [40 CFR 61.356(j)(10)]

(e) Reporting Requirements

(1) Annual Report. Beginning on the date that the equipment necessary to comply with these standards has been certified, the Permittee shall submit an annual report which includes and/or updates the following information: (If the information in the annual report required by 40 CFR 61.357(a)(1) through 40 CFR 61.357(a)(3) is not changed in the following year, the Permittee may submit a statement to that effect.) [40 CFR 61.357(d)(2)]

(i) Total annual benzene quantity from facility waste determined in accordance with 40 CFR 61.355(a). [40 CFR 61.357(a)(1)]

(ii) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions. [40 CFR 61.357(a)(2)]

(iii) For each waste stream identified as not being controlled for benzene emissions the following information shall be added to the table: [40 CFR 61.357(a)(3)]

(A) Whether or not the water content of the waste stream is greater than 10 percent; [40 CFR 61.357(a)(3)(i)]

(B) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate; [40 CFR 61.357(a)(3)(ii)]

(C) Annual waste quantity for the waste stream; [40 CFR 61.357(a)(3)(iii)]

(D) Range of benzene concentrations for the waste stream; [40 CFR 61.357(a)(3)(iv)]

(E) Annual average flow-weighted benzene concentration for the waste stream; and [40 CFR 61.357(a)(3)(v)]

(F) Annual benzene quantity for the waste stream [40 CFR 61.357(a)(3)(vi)].

NOTE: The information required above should represent the waste stream characteristics based on current configuration and operating conditions. The Permittee only needs to list in the report those waste streams that contact materials containing benzene. [40 CFR 61.357(a)(4)]

(iv) The annual report shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams. [40 CFR 61.357(d)(3)]

(v) A summary of all inspections during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken. [40 CFR 61.357(d)(8)]

(2) Quarterly Report. Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified, the Permittee shall submit a report quarterly to the EPA Administrator and AMS that includes: [40 CFR 61.357(d)(6)]

(i) A certification that all of the required inspections have been carried out. [40 CFR 61.357(d)(6)]

(ii) If a treatment process or wastewater treatment system unit is monitored in accordance with 40 CFR 61.354(b), then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr. [40 CFR 61.357(d)(7)(iii)]

(iii) For the carbon adsorber, each period of operation monitored during which any of the following conditions occur: [40 CFR 61.357(d)(7)(iv)]

(A) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas. [40 CFR 61.357(d)(7)(iv)(D)]

(B) Each occurrence when the carbon in a carbon adsorber system that is regenerated directly on site in the control device is not regenerated at the predetermined carbon bed regeneration time. [40 CFR 61.357(d)(7)(iv)(H)]

(C) Each 3-hour period of operation during which the parameters monitored are outside the range of values specified in 40 CFR 61.349(a)(2)(iv)(C), or any other periods specified by the EPA Administrator and AMS for a control device subject to the requirements of 40 CFR 61.349(a)(2)(iv). [40 CFR 61.357(d)(7)(iv)(J)]

(3) For the cover and closed-vent system monitored in accordance with 40 CFR 61.354(g), the Permittee shall submit a report quarterly to the EPA Administrator and AMS that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure. [40 CFR 61.357(d)(7)(v)]

28. Group 25B – SOCMI Wastewater

This section applies to HAP wastewater streams associated with SOCMI process units - Benzene and Cumene Production Units, Tank Truck Loading and Railcar Unloading (P-180 and P-181).

(a) Work Practice Standards

(1) The Permittee shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turnaround) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall: [40 CFR 63.105(b)]

(i) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities. [40 CFR 63.105(b)(1)]

(ii) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and [40 CFR 63.105(b)(2)]

(iii) Specify the procedures to be followed when clearing materials from process equipment. [40 CFR 63.105(b)(3)]

(4) The Permittee shall modify and update the information required by 40 CFR 63.105(b) as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure. [40 CFR 63.105(c)]

(5) The Permittee shall implement the procedures described in 40 CFR 63.105(b) and 40 CFR 63.105(c) as part of the start-up, shutdown, and malfunction plan required under 40 CFR 63.6(e)(3). [40 CFR 63.105(d)]

(6) The Permittee of a new or existing source using biological treatment for at least one wastewater stream that is Group 1 for Table 9 compounds shall achieve a required mass removal of at least 95 percent for all Table 9 compounds. The Permittee of a new source using biological treatment for at least one wastewater stream that is Group 1 for Table 8 compounds shall achieve a required mass removal of at least 95 percent for all Table 8 compounds. All Group 1 and Group 2 wastewater streams entering a biological treatment unit that are from chemical manufacturing process units subject to 40 CFR 63 Subpart F shall be included in the demonstration of the 95-percent mass removal. The Permittee shall comply with 40 CFR 63.138(g)(1) through (g)(4). [40 CFR 63.138(g), 40 CFR 63.138(a)(1), 40 CFR 63.138(a)(2), 40 CFR 63.138(b)(2), and 40 CFR 63.138(c)(2)]

(i) Except as provided in 40 CFR 63.138(g)(4), the Permittee shall ensure that all Group 1 and Group 2 wastewater streams from chemical manufacturing process units subject to this rule entering a biological treatment unit are treated to destruct at least 95-percent total mass of all Table 8 and/or Table 9 compounds. [40 CFR 63.138(g)(1)]

(ii) For open biological treatment processes compliance shall be determined using the procedures specified in 40 CFR 63.145(g). For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in 40 CFR 63.145(e) or (g). For closed anaerobic biological treatment processes compliance shall be determined using the procedures in 40 CFR 63.145(e). [40 CFR 63.138(g)(2)]

(iii) For each treatment process or waste management unit that receives, manages, or treats wastewater streams, from the point of determination of each Group 1 or Group 2 wastewater stream to the biological treatment unit, the Permittee shall comply with 40 CFR 63.133 through 40 CFR 63.137 for control of air emissions. When complying with this paragraph, the term Group 1 shall mean both Group 1 and Group 2. [40 CFR 63.138(g)(3)]

(iv) If a wastewater stream is in compliance with the requirements in 40 CFR 63.138(b)(1), (c)(1), (d), (e), (f), or (h) before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not required to be included in the total mass flow rate entering the biological treatment unit for the purpose of demonstrating compliance. [40 CFR 63.138(g)(4)]

(v) PES uses the biological treatment process meets the definition of

"enhanced biological treatment process" in §63.111 of Subpart G and the wastewater streams include one or more compounds on list 2 of table 36 of this Subpart G that do not meet the criteria in paragraph (h)(1)(ii) of 40 CFR §63.145. PES has determined F_{bio} for the list 2 compounds using the procedures specified in appendix C of 40 CFR part 63. (The term "F_{bio}" represents the site specific fraction of an individual Table 8 or Table 9 compound that is biodegraded.) PES calculates F_{bio} for the list 1 compounds using the defaults for first order biodegradation rate constants (K1) in table 37 of Subpart G and follows the procedure explained in form III of appendix C, 40 CFR part 63, or any of the procedures specified in appendix C, 40 CFR part 63.

(7) For each control device or combination of control devices used to comply with the provisions in 40 CFR 63.133 through 63.138, the Permittee shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (b) through (f) of 40 CFR 63.139. [40 CFR 63.139(a)]

(i) Whenever organic hazardous air pollutants emissions are vented to a control device which is used to comply with the provisions of subpart F of 40 CFR 63, such control device shall be operating. [40 CFR 63.139(b)]

(6) The carbon adsorption system shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device of 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 63.139(c)(2)]

(7) For the carbon canister, the design evaluation shall consider the vent stream composition, constituent concentrations, mass or volumetric flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule. [40 CFR 63.139(d)(2)(vi)]

(8) Except as provided in 40 CFR 63.140 of subpart F of 40 CFR 63, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar days after identification or discovery of the defect. [40 CFR 63.139(f)]

(9) Inspections. For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the Permittee shall comply with the inspection requirements specified in table 11 of 40 CFR 63, Subpart G. [40 CFR 63.143(a)]

(10) Delay of repair. Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown (as defined in 40 CFR 63.101) or if the Permittee determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown. [40 CFR 63.140(a)]

(11) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied or is no longer used to treat or manage Group 1 wastewater streams or residuals removed from Group 1 wastewater streams. [40 CFR 63.140(b)]

(12) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the Permittee. Repair shall be completed as soon as practical. [40 CFR 63.140(c)]

(b) Testing Requirements

(1) If complying with the 95-percent reduction efficiency requirements, comply with the requirements specified in 40 CFR 63.145(i)(1) through (i)(9). [40 CFR 63.145(i)]

(i) Compare mass destruction efficiency to required efficiency. If complying with the 95 percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation WW18) is 95 percent or greater. [40 CFR 63.145(i)(9)]

(2) The Permittee shall submit a request stating the basis for the selected monitoring frequencies and the methods that will be used. [40 CFR 63.143(c), 40 CFR 63.151(f)(1)]

(3) Performance tests for the 95-percent mass removal rate specified in 40 CFR 63.138(g) shall be conducted in accordance with the requirements of 40 CFR 63.145(g)(1), 40 CFR 63.145(e)(3)(ii), 40 CFR 63.145(e)(4)(ii) and 40 CFR 63.145(g)(2). [40 CFR 63.145(g)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request should include a description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s). The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. [40 CFR 63.143(c), 63.151(f)(1)]

(2) Determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with 40 CFR 63.144 (b) and (c). [40 CFR 63.144(b) and 40 CFR 63.144(c)]

(3) Performance tests and design evaluations for control devices. The Permittee shall conduct either a design evaluation as specified in 40 CFR 63.139(d), or a performance test as specified in 40 CFR 63.145(i) for control devices other than flares and 40 CFR 63.145(j) for flares. [40 CFR 63.145(a)(2)]

(4) For each biological treatment unit used to comply with 40 CFR 63.138, the Permittee shall comply with the monitoring requirements specified in table 12 of 40 CFR 63, Subpart G. [40 CFR 63.143(b)]

(5) If the Permittee elects to comply with Item 1 in table 12 of 40 CFR 63, Subpart G, the Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(c)]

(6) If the Permittee elects to comply with Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(d)]

(7) The Permittee shall comply with the requirements in 40 CFR 63.139(d) and with the requirements in 40 CFR 63.143(e)(1), 40 CFR 63.143(e)(2), or 40 CFR 63.143(e)(3). [40 CFR 63.143(e)]

(i) The Permittee shall comply with the following monitoring requirements specified in table 13 of subpart G of 40 CFR 63: [40 CFR 63.143(e)(1)]

(A) Monthly inspections of valves sealed closed with car-seal.

(B) Daily (or at intervals no greater than 20% of the design carbon replacement interval, whichever is greater) monitoring of organic compound concentration of adsorber exhaust; or [Table 13 of subpart G of 40 CFR 63]

(C) The Permittee shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in 40 CFR 63.111; or [40 CFR 63.143(e)(2)]

(D) The Permittee shall request approval to monitor parameters other than those specified in 40 CFR 63.143(e)(1) or 40 CFR 63.143(e)(2). The request shall be submitted according to the procedures specified in 40

CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(e)(3)]

(8) For each parameter monitored in accordance with 40 CFR 63.143(c), 40 CFR 63.143(d), or 40 CFR 63.143(e), the Permittee shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the Permittee shall comply with the requirements specified in 40 CFR 63.146(b)(7)(ii)(A) and 40 CFR 63.146(b)(8)(ii). [40 CFR 63.143(f)]

(9) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. [40 CFR 63.143(g)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall maintain a record of the information required by 40 CFR 63.105(b) and 40 CFR 63.105(c) as part of the start-up, shutdown, and malfunction plan. [40 CFR 63.105(e)]

(2) The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means for the Permittee electing to comply with Item 1 in table 12 of subpart G of 40 CFR 63. [40 CFR 63.143(c)]

(3) The Permittee transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with 40 CFR 63.132(g) shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic hazardous air pollutants which are required to be managed and treated. [40 CFR 63.147(a)]

(4) The Permittee shall keep in a readily accessible location the following records: [40 CFR 63.147(b)]

(i) A record that each waste management unit inspection required by 40 CFR 63.133 through 63.137 was performed. [40 CFR 63.147(b)(1)]

(ii) A record that each inspection for control devices required by 40 CFR 63.139 was performed. [40 CFR 63.147(b)(2)]

(iii) A record of the results of each seal gap measurement required by 40 CFR 63.133(d) and 40 CFR 63.137(c). The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in 40 CFR 63.120(b)(2), 40 CFR 63.120(b)(3), and 40 CFR 63.120(b)(4). [40 CFR 63.147(b)(3)]

(iv) For Item 1 and Item 3 of table 12 of 40 CFR 63, subpart G, the Permittee shall keep the records approved by the EPA Administrator and AMS. [40 CFR 63.147(b)(4)]

(v) Continuous records of the monitored parameters specified in Item 2 of table 12 and table 13 of 40 CFR 63, Subpart G, and in 40 CFR 63.143(e)(2). [40 CFR 63.147(b)(5)]

(vi) Documentation of a decision to use an extension, as specified in 40 CFR 63.133(e)(2) or 40 CFR 63.133(h), which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical. [40 CFR 63.147(b)(6)]

(vii) Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in 40 CFR 63.140(c), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept on site and when the manufacturer promised delivery), and the date when repair was completed. [40 CFR 63.147(b)(7)]

(5) The Permittee shall keep records of the daily average value of each continuously monitored parameter for each operating day, except as provided below: [40 CFR 63.147(d)]

(i) For carbon adsorbers, the Permittee shall keep the records specified below instead of daily averages. [40 CFR 63.147(d)(2)]

(A) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle. [40 CFR 63.147(d)(2)(i)]

(B) Records of the temperature of the carbon bed after each regeneration cycle. [40 CFR 63.147(d)(2)(ii)]

(6) If the Permittee uses process knowledge to determine the annual average concentration of a wastewater stream as specified in 40 CFR 63.144(b)(3) and/or uses process knowledge to determine the annual average flow rate as specified in 40 CFR 63.144(c)(1), and determines that the wastewater stream is not a Group 1 wastewater stream, the Permittee shall keep in a readily accessible location the documentation of how process knowledge was used to determine the annual average concentration and/or the annual average flow rate of the wastewater stream. [40 CFR 63.147(f)]

(e) Reporting Requirements

(1) The Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(c)]

(2) For a control device used to comply with 40 CFR 63.138(b)(1), (c)(1), (d), (e), (f), or (g) for which the Permittee seeks to monitor a parameter other than those specified in table 11, table 12, or table 13 of 40 CFR 63, Subpart G, the

Permittee shall submit a request for approval to monitor alternative parameters according to the procedures specified in 40 CFR 63.151(f) or (g).

(3) The Permittee shall submit the information specified in 40 CFR 63.146(b)(1) through (b)(9) as part of the Notification of Compliance Status required by 40 CFR 63.152(b). [40 CFR 63.146(b)]

(i) For each new and existing source, the Permittee shall submit the information specified in table 15 of 40 CFR 63, Subpart G for Table 8 and/or Table 9 compounds. [40 CFR 63.146(b)(2)]

(ii) For each treatment process identified in table 15 of 40 CFR 63, subpart G that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit the information specified in table 17 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(4)]

(iii) For each waste management unit identified in table 15 of 40 CFR 63, Subpart G that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit the information specified in table 18 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(5)]

(iv) For each residual removed from a Group 1 wastewater stream, the Permittee shall report the information specified in table 19 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(6)]

(v) For the nonregenerative carbon adsorber, the Permittee shall report the information specified below. [40 CFR 63.146(b)(7)]

(A) The information on parameter ranges specified in 40 CFR 63.152(b)(2) for the applicable parameters specified in table 13 of 40 CFR 63, Subpart G, unless the parameter range has already been established in the operating permit [40 CFR 63.146(b)(7)(ii)(A)]; and either

(B) The design evaluation specified in 40 CFR 63.139(d)(2) [40 CFR 63.146(b)(7)(ii)(B)]; or

(C) Results of the performance test specified in 40 CFR 63.139(d)(1). Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with 40 CFR 63.143; and applicable supporting calculations. [40 CFR 63.146(b)(7)(ii)(C)]

(4) For each treatment process, the Permittee shall submit the information specified below: [40 CFR 63.146(b)(8)]

(i) For Items 1 and 2 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the information specified below: [40 CFR 63.146(b)(8)(i)]

(A) The information on parameter ranges specified in 40 CFR 63.152(b)(2) for the parameters approved by the EPA Administrator and AMS, unless the parameter range has already been established in the operating permit. [40 CFR 63.146(b)(8)(i)(A)]

(B) Results of the initial measurements of the parameters approved by the EPA Administrator and AMS and any applicable supporting calculations. [40 CFR 63.146(b)(8)(i)(B)]

(ii) For Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the information on parameter ranges specified in 40 CFR 63.152(b)(2), unless the parameter range has already been established in the operating permit. [40 CFR 63.146(b)(8)(ii)]

(5) Except as provided in 40 CFR 63.146(b)(9)(iii), for each waste management unit or treatment process, the Permittee shall submit the information specified in either 40 CFR 63.146(b)(9)(I) or 40 CFR 63.146(b)(9)(ii). [40 CFR 63.146(b)(9)]

(i) The design evaluation and supporting documentation specified in 40 CFR 63.138(j)(1). [40 CFR 63.146(b)(9)(i)]

(ii) Results of the performance test specified in 40 CFR 63.138(j)(2). Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with 40 CFR 63.143; and applicable supporting calculations. [40 CFR 63.146(b)(9)(ii)]

(iii) If the Permittee elects to use one of the technologies specified in 40 CFR 63.138(h), the Permittee is exempt from the requirements specified in 40 CFR 63.146(b)(9)(I) or 40 CFR 63.146(b)(9)(ii). [40 CFR 63.146(b)(9)(iii)]

(6) For each waste management unit that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the results of each inspection required by 40 CFR 63.143(a) in which a control equipment failure was identified. Control equipment failure is defined for each waste management unit in 40 CFR 63.133 through 63.137. Each Periodic Report shall include the date of the inspection, identification of each waste management unit in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made. [40 CFR 63.146(c)]

(7) Except as provided in 40 CFR 63.146(f), for each treatment process used to comply with 40 CFR 63.138(b)(1), (c)(1), or (e), the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the information specified in 40 CFR 63.146(d)(1), 40 CFR 63.146(d)(2), or 40 CFR 63.146(d)(3) for the monitoring required by 40 CFR 63.143(b). [40 CFR 63.146(d)]

(i) For Item 1 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the results of measurements that indicate that the biological treatment unit is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(1)]

(ii) For Item 2 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the monitoring results for each operating day during which the daily average value of a continuously monitored parameter is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(2)]

(iii) For Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the monitoring results for each operating day during which the daily average

value of any monitored parameter approved in accordance with 40 CFR 63.151(f) was outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(3)]

(8) Except as provided in 40 CFR 63.146(f), for each control device, the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the information specified in either 40 CFR 63.146(e)(1) or 40 CFR 63.146(e)(2). [40 CFR 63.146(e)]

(i) The information specified in table 20 of 40 CFR 63, Subpart G, or [40 CFR 63.146(e)(1)]

(ii) If the Permittee elects to comply with 40 CFR 63.143(e)(2), i.e., an organic monitoring device installed at the outlet of the control device, the Permittee shall submit the monitoring results for each operating day during which the daily average concentration level or reading is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(e)(2)]

(9) Where the Permittee obtains approval to use a treatment process or control device other than one for which monitoring requirements are specified in 40 CFR 63.143, or to monitor parameters other than those specified in table 12 or 13 of 40 CFR 63, Subpart G, the EPA Administrator and AMS will specify appropriate reporting requirements. [40 CFR 63.146(f)]

(10) If an extension is utilized in accordance with 40 CFR 63.133(e)(2) or 40 CFR 63.133(h), the Permittee shall include in the next periodic report the information specified in 40 CFR 63.133(e)(2) or 40 CFR 63.133(h). [40 CFR 63.146(g)]

(f) Non-Applicable Requirements

(1) An open or closed biological treatment process in compliance with 40 CFR 63.138 and using 40 CFR 63.145(g) to demonstrate compliance is not subject to the requirements of 40 CFR 63.133 through 40 CFR 63.137. [40 CFR 63.138(a)(3)]

29. Group 26 – Benzene and Cumene Production

(a) Work Practice Standards

(1) For P181 (Benzene Recovery Unit 1732) the following requirements apply:

(i) Steam use in reboilers UE6, UE12, and UE24 shall not exceed 1.888 million lbs per day on a rolling 365-day basis. [Plan Approval No. 99110 and 99129, paragraph 2, dated December 13, 1999]

(ii) For fugitive leak sources (P112 and P113), see Group 07, Section D.8(a). [Plan Approval No. 99110 and 99129, paragraph 3, dated December 13, 1999]

(iii) For wastewater streams (P114, P115, and P123), see Groups 25A, Section D.27.(a), and 25B, Section D.28.(a). [Plan Approval No. 99110 and 99129, paragraph 4, dated December 13, 1999]

(2) For P180 (Cumene Production Unit 1733) the following requirements apply:

(i) The Cumene production rate from the facility shall be limited to 1.3 billion pounds per year (12,000 barrels per day on a 365-day average basis.)

However, the cumene production rate shall not exceed 14,000 barrels on any given day. [Plan Approval No. 99127 and 99092, paragraph 2, dated October 29, 1999.

(3) The Total Resource Effectiveness (TRE) index value of each process vent UV-15, CUV-12, CUV-312 shall be greater than 4.0. [40 CFR 63.113(e), AMR XVI.B.1]

(b) Testing Requirements

(1) Testing requirements are covered by requirements cited for Groups 07, Section D.8.(b), 25A, Section D.27.(b), and 25B, Section D.28.(b).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitoring requirements are covered by requirements cited for Groups 07, Section D.8.(c), 25A, Section D.27.(c) and 25B, Section D.28.(c).

(2) Daily steam use in UE6, UE12, and UE24.

(3) Daily cumene production.

(4) Any process change [40 CFR 63.118(c)]

(i) Process change does not include: process upsets, unintentional, temporary process change, and changes that are within the range on which the original TRE calculation was based. [40 CFR 63.115(e)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Recordkeeping requirements are covered by requirements cited for Groups 07, Section D.8.(d), 25A, Section D.27.(d) and 25B, Section D.28.(d).

(2) Combined steam use in UE6, UE12, and UE24 daily and for a rolling 365-day period.

(3) Cumene production daily and for a 365-day rolling average.

(4) Any process change and any recalculation of the TRE index value in accordance with 40 CFR 63.115(e) [40 CFR 63.118(c)]

(e) Reporting Requirements

(1) Reporting requirements are covered by requirements cited for Groups 07, Section D.8.(e), 25A, Section D.27.(e), and 25B, Section D.28.(e).

(2) Within 180 calendar days, the Permittee shall submit report of process change in accordance with Section 29(c)(4) that causes the process vents UV-15, CUV-12, CUV-312 to become a Group 2 process vent with a TRE less than 4.0. The report may be submitted as part of the next periodic report. The report shall include: [40 CFR 63.118(h)]

(i) A description of the process change,

(ii) The results of the recalculation of the TRE index value required under 40 CFR §63.115(e).

(i) A statement that the owner or operator will comply with the requirements specified in 40 CFR §63.113(d).

30. Group 27 – Emergency Generators and Fire Pumps

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each emergency generator and pump shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unit may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Emissions from the Fire Pump #4 (FP-010) and each Butane Terminal Fire Pumps (FP-020 and FP-021) shall not exceed the following:

(i) Non-methane Hydrocarbon and Nitrogen Oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr). [40 CFR 60.4205(c) and Table 4]

(ii) Carbon Monoxide (CO) emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(iii) Particulate Matter (PM) emissions shall not exceed 0.20 g/kW-hr (0.15 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(5) In addition to the emission requirements of Conditions 1 through 3, the 147 hp flood control RICE (EM-002) shall comply with the following emission requirements [AMS Installation Permit No. 18-000373]:

(i) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]

(ii) CO emissions shall not exceed 5.0 g/kW-hr or 3.7 g/hp-hr; [Tier 3 Engine]

(iii) PM emissions shall not exceed 0.30 g/kW-hr or 0.23 g/hp-hr. [Tier 3 Engine]

(6) In addition to the emission requirements of Conditions 2 thru 5, the 275 hp flood control RICE shall comply with the following emission requirements [AMS Installation Permit No. 18-000374]:

(i) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]

(ii) CO emissions shall not exceed 3.5 g/kW-hr or 2.6 g/hp-hr; [Tier 3 Engine]

(iii) PM emissions shall not exceed 0.20 g/kW-hr or 0.15 g/hp-hr. [Tier 3 Engine]

(b) Work Practice

(1) Each emergency generator shall be operated only during emergencies, emergency testing, and engine tuning.

(i) Emergencies are defined as when the primary power source for the facility has been rendered inoperable by an unanticipated incident.

(ii) Testing for each generator is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the generator one time per year and is limited to four hours.

(2) Each emergency generator shall operate less than 500 hours per rolling 12-month period. [25 Pa Code §129.93]

(3) Each emergency generator and fire/mitigation pump shall be installed, maintained, and operated in accordance with manufacturer's specifications. [25 Pa Code §129.93]

(4) The Permittee shall only burn No.2 fuel oil in each Fire/Mitigation Pump. The maximum sulfur content of diesel fuel shall be 0.2 % by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

(i) The Fire Pump #4 (FP-010) and each Butane Terminal Fire Pump (FP-020 and FP-021) shall only burn diesel fuel oil. The diesel fuel used in the fire pump shall meet the following requirements:

(A) The diesel fuel used in the emergency generator shall meet the following: [40 CFR 60.4207(b), 40 CFR 80.510(b)]

(1) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(2) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(10) The fire/mitigation pumps shall be operated only during emergencies, testing, and engine tuning. [AMS Installation Permit 11101 dated 6/24/11, AMS Installation Permit 11346-52 dated 2/23/12]

(i) Emergencies are defined as when there is significant drop in pressure in the fire water system or when an actual or suspected release of HF occurs and the mitigation pumps must be activated.

(ii) Testing for the fire pump is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the fire pump one time per year and is limited to four (4) hours.

(11) The Fire/Mitigation Pump shall operate less than 500 hours per rolling 12-month period.

(7) Sound levels produced by the emergency generator or pumps shall not exceed the following:

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property: or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(8) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(9) No testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps shall be performed on a day for which an Air Quality Forecast has predicted an Air Quality Action Day, or on an Air Quality Action Day [AMS XV, Sec III]

(10) Testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps during the ozone season, when not otherwise prohibited in Section D.30(b)(9), shall only be performed between the hours of 5:00 PM and 11:00 PM, except as follows: [AMS XV, Sec III]

(i) Facilities that are able to demonstrate compliance with Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) can perform testing and/or tuning between the hours of 5:00 PM and 7:30 AM.

(11) The Emergency Generators and Fire/Mitigation Pumps are exempt from the above condition in Section D.30(b)(9) and (10) during emergencies or emergency repairs regardless of the air quality. [AMS XV, Sec III]

(12) The Fire/Mitigation Pumps may be tested on the seventh day after six consecutive Air Quality Action Days, notwithstanding Section D.30.(b)(9) [AMR XV.Sec III.D]

(13) The Fire/Mitigation pump shall: [40 CFR 63.6602, Table 2c]

(i) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(14) The Permittee shall install a non-resettable hour meter if one is not already installed on each emergency generator and Fire/Mitigation pump.

(15) The Permittee shall develop a maintenance plan for the Fire/Mitigation Pumps which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

(16) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(17) The Belmont Firehouse Williams Pump (fire pump FP-019) shall operate less than 500 hours per rolling 12 month period. The fire pump shall be operated only during emergencies, testing, tuning, and fire training. [AMS Installation Permit 13170 dated 7/31/13]

(i) Emergencies are defined as the endangerment of lives, of equipment, possessions, and inventories by fire.

(ii) Testing for the Belmont Firehouse Williams Pump (fire pump FP-019) and each Butane Terminal Firewater system pumps (FP-020 and FP-021) is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the Belmont Firehouse Williams Pump (fire pump FP-019) one time per year and is limited to four hours.

(iv) Fire training is limited to 16 hours per rolling 12 month period.

(18) The Belmont Firehouse Williams Pump (fire pump FP-019) shall be subject to 40 CFR 60 Subpart IIII if the fire pump is stationed at a location or a single site at the facility for a period of 1-year or more. [AMS Installation Permit 13170 dated 7/31/13]

(19) Each flood control RICE shall only burn ultra low sulfur diesel fuel. The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm) [AMS Installation Permits 18-000373 and 18-000374].

(20) Each flood control RICE shall comply with the following [AMS Installation Permits 18-000373 and 18-000374]:

(i) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.

(ii) Each flood control RICE may be operated during storm events for emergency water pumping to control flood.

(iii) Each flood control RICE may be operated for the purposes specified in Conditions 9(a) for up to 100 hours per calendar year.

(iv) Each flood control RICE shall operate less than 500 hours per rolling 12 month period for all operation. [Assures compliance with Condition 2]:

(c) Testing Requirements [25 Pa Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(d) Monitoring Requirements

(1) The proper operation of each emergency generator and fire pump in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and sulfur content in fuel oil.

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) The Permittee shall provide verification or calculations to demonstrate compliance with the NOx emission limits in Section D.30 (a)(1) on a monthly basis and rolling 12-month basis. Verification may be based on AP-42, manufacturer's certified emission factors, or other AMS-approved emission factors;

(2) Operating hours for each emergency generator, flood control RICE, and fire/mitigation pump on a 12-month rolling basis

(3) The Air Quality Index (AQI) number or color code shall be determined and recorded when testing or tuning of an Emergency Generator and Fire/Mitigation Pump is conducted, to demonstrate compliance with Section D.30 (b)(9) and (12) [AMS XV, Sec IV]

(4) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(5) Manufacturer's engine compliance certification to demonstrate compliance with the applicable emission standards in 40 CFR 60.4205(b). [40 CFR 60.4211(c)]

(6) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(7) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.30.(b)(13)

(8) Date and location of the Belmont Firehouse Williams Pump (fire pump FP-019) each time the emergency fire pump is relocated to different site at the facility [AMS Installation Permit 13170 dated 7/31/13]

(9) EPA Tier rating of each temporary RICE.

(f) Reporting Requirements

[25 Pa Code §127.442 & AMR I Sec. II]

(1) Any violation of an emission limitation that does not result from a malfunction requiring reporting under Section C.12 shall be reported (by phone call or facsimile transmission) to AMS within 24 hours of detection and followed by written notification within thirty-one (31) days.

31. Group 28. Internal Combustion Engines

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each source shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unit may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-002, IC-006, IC-007, IC-008, rIC-006, rIC-007) shall be limit to the following: [40 CFR §63.6602, Table 2c]

(i) Each pump and air compressor 100 ≤ hp ≤ 300 hp shall limit the CO concentration in the exhaust to 230 ppmvd or less at 15% O2

(5) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-008) shall not exceed 2.6 g/bhp/hr [AMS Installation Permit 12098-99, dated 8/6/12]

(b) Work Practice

(1) Each units shall only burn fuel types as stated in Table A-1 Group 28.

(2) Sound levels produced by the fire pump shall not exceed the following: [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(3) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(4) The maximum hours of operation of each pump and air compressor shall be as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Per rolling 12 month average
rIC-001 ≤ 14 BHP pump	7821 hours
rIC-002 ≤ 55 BHP air compressor	2419 hours
rIC-003 ≤ 55 BHP air compressor	2419 hours
rIC-004 ≤ 55 BHP air compressor	2419 hours
rIC-005 ≤ 101 BHP air compressor	2627 hours
rIC-006 ≤ 101 BHP air compressor	2627 hours
rIC-007 ≤ 144 BHP pump	1984 hours
IC-002 (53P-800C pump)	458 hours
IC-005 (FE-5(2) Flood Control Pump Driver)	2300 hours
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	1150 hours
IC-007 (B-2623 Flood Control Pump Driver)	3050 hours
IC-008 (Engine Set 1290 (northside of 8 Sep))	360 hours

(5) Each pump and air compressor shall meet the minimum Tier level as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Tier Level*
rIC-001 ≤ 14 BHP pump	No Tier
rIC-002 ≤ 55 BHP air compressor	Tier 4
rIC-003 ≤ 55 BHP air compressor	Tier 4
rIC-004 ≤ 55 BHP air compressor	Tier 4
rIC-005 ≤ 101 BHP air compressor	Tier 4
rIC-006 ≤ 101 BHP air compressor	Tier 4
rIC-007 ≤ 144 BHP pump	Tier 3
IC-002 (53P-800C pump)	No Tier
IC-005 (FE-5(2) Flood Control Pump Driver)	No Tier
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	Tier 1
IC-007 (B-2623 Flood Control Pump Driver)	Tier 3
IC-008 (Engine Set 1290 (northside of 8 Sep))	Tier 2

*Tier level are based on 40 CFR 60 Subpart IIII

(6) Each pump and air compressor shall only burn diesel fuel. The diesel fuel shall meet the following requirements assuring compliance with 40 CFR 63.6604, 40 CFR §60.510(b)

(i) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(ii) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(7) For each pump and air compressor less than 100 hp (IC-005, rIC-001, rIC-002, rIC-003, rIC-004): [40 CFR §63.6602, Table 2c, AMS Installation Permit 12000-03 dated 10/12/12]

(i) Change oil and filter every 1000 hours of operation or annually, whichever comes first;

- PES owned diesel pump shall use an oil analysis program as stated in 40 CFR 63.6625(i)

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually,

whichever comes first, and replace as necessary.

(8) The Permittee shall maintain the pump and air compressor less than 100 hp according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6625(e)]

(9) The Permittee shall install a non-resettable hour meter if one is not already installed. [assures compliance with 40 CFR 63.6625(f)]

(10) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(c) Testing Requirement

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted for approval to AMS at least 60 days prior to the test.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(3) The Permittee shall demonstrate initial compliance with the CO concentration in Section D.31(a)(4) on each pump or air compressor greater than 100 hp (IC-001, IC-002, IC-003, IC-004, IC-006, IC-007, IC-008, IC-009, rIC-006, rIC-007) [40 CFR §63.6610(a) & 40 CFR §63.6612(a)]

(i) The performance test shall comply with 40 CFR 63 Subpart ZZZZ, Table 4 and 40 CFR §63.6620

(ii) During the initial performance test, the Permittee must establish each operating limitation

(d) Monitoring Requirements

The Permittee shall monitor:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and fuel usage and sulfur content in fuel oil.

(2) Each maintenance conducted on each pump and air compressor to demonstrate that the engines are operated and maintained in accordance to the maintenance plan. [40 CFR 63.6625(e) & 40 CFR 63.6655(e)]

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) NOx emission per rolling 12-month period, calculated monthly to demonstrate compliance with Section D.31.(a)(1). Verification shall be based on AP-42 factors, manufacturer's specification, or other AMS approved emission factors.

(2) Daily operating hours, operating hours per rolling 12-month period calculated monthly to assure compliance with Section D.31.(b)(4)

(3) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(4) Manufacturer's engine compliance certification to demonstrate compliance with the Tier level in Section D.31.(b)(5)

(5) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(6) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.31.(b)(7)

(7) Performance tests

(f) Reporting Requirements

(1) For each pump and air compressor, the Permittee shall report, in accordance with 40 CFR 63.6650, each instant in which there is a deviation in the emission limitation or operating limitation, [40 CFR 63.6640(b)]

(2) The Permittee shall submit Semi-Annual Compliance reports beginning with May 3, 2013. [40 CFR 63.6650]

(i) Each deviation of emission limitation and operating limitation that occurs during the reporting period shall be reported and the reports must contain the following:

(A) The total operating time of each pump and air compressor at which the deviation occurred during the reporting period.

(B) Information on the number, duration, and cause of deviations (including unknown cause if applicable), as applicable and corrective action taken

(ii) If there are no deviations from any emission limitations or operating limitations, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period;

32. Group 29. Refinery Sector Rule (RSR)

Catalytic Reformer Unit (1332)

(a) Emission Limitations

(1) Meet the HAP Emission limit during initial catalyst depressuring and catalyst purging operations. [40 CFR §63.1566(a)(3)] except during passive depressuring when the reactor vent pressure is 5 psig or less [40 CFR §63.1566(a)(4)]

(b) Work Practice Standard

(1) The Permitte shall comply with Subpart UUU. [40CFR 63.1566(a)]

i. Option 1: On and after January 30, 2019, vent emissions to a flare that meets the requirements of § 63.670. Prior to January 30, 2019, vent emissions to a flare that meets the requirements for control devices in § 63.11(b) and visible emissions from a flare must not exceed a total of 5 minutes during any 2-hour operating period, or vent emissions to a flare that meets the requirements of § 63.670

ii. Option 2: Reduce uncontrolled emissions of total organic compounds (TOC) or nonmethane TOC from your process vent by 98 percent by weight using a control device or to a concentration of 20 ppmv (dry basis as hexane), corrected to 3 percent oxygen, whichever is less stringent. If you vent emissions to a boiler or process heater to comply with the percent reduction or concentration emission limitation, the vent stream must be introduced into the flame zone, or any other location that will achieve the percent reduction or concentration standard.

Benzene Fenceline Monitoring Program

(a) Work Practice Standard

(1) The Owner/Operator shall conduct sampling for benzene along the facility property boundary and analyze the samples in accordance with Methods 325A and 325B of Appendix A [40 CFR 63.658(a), 40 CFR 63.658(b)]

(2) Passive sampling locations shall be determined in accordance with Section 8.2 of Method 325A in Appendix A of 40 CFR 63.658. [40 CFR 63.658(c)]

(3) Shall collect at least one co-located duplicate sample for every 10 field samples per sampling episode and at least two field blanks per sampling episode, as described in Section 9.3 in Method 325A of Appendix A of Subpart CC. The co-located duplicates may be collected at any one of the perimeter sampling locations. [40 CFR 63.658(a), 40 CFR 63.658(c)(3))]

(b) Monitoring Requirements

(1) A 14-day sampling period shall be used.

(2) The frequency of sample collection shall be once each contiguous 14-day sampling period, such that the beginning of the next 14-day sampling period begins immediately upon completion of the previous 14-day sampling period.

(3) A 14-day sampling period may be no shorter than 13 calendar days and no longer than 15 calendar days, but the routine sampling period shall be 14 calendar days. [40 CFR 63.658(e)(1)]

(4) Reduced Burden Sampling Frequency: When a monitoring site consistently returns results <= 0.9 µg/m3 for two years, the permittee may use the applicable minimum sampling frequency specified at 40 CFR 63.658(e)(3)(i) through (iv).

(5) If a sample from a monitoring site returns a result > 0.9 µg/m3, the monitoring frequency for that site must be adjusted as specified at. 40 CFR 63.658(e)(3)(v).

(6) Calculate the annual average "Delta C" based on the average of the 26 most recent 14-day sampling periods. Update this annual average value upon receipt of each subsequent 14-day sampling period. [40 CFR 63.658(f)(2)]

(c) Compliance Method:

(1) Compliance with the work practice standards of this condition shall be demonstrated in accordance with the monitoring/testing and recordkeeping requirements of this section.

(d) Recordkeeping Requirements

(1)The following records shall be maintained in accordance with Condition 3(b): Fenceline monitoring records required by 40 CFR 63.658 including:

i. Passive sampling results

ii. Sampling period meteorological data: average temperature and barometric pressure, wind speed and wind direction

iii. Annual average ∆c records

(e) Reporting Requirements

(1) Within 45 calendar days after the end of each quarterly reporting period covered by the periodic report, each owner or operator shall submit the following information to EPAs CEDRI database: Shall submit individual sample results for each monitor for each sampling period during the quarterly reporting period, the coordinates of all of the passive monitor locations, biweekly annual average concentration difference (Δc) values for benzene for each sampling period, and notation of whether background correction was used or whether an outlier was removed.

(2) If an annual average "Delta C" value is > 9 µg/m3, the action level is exceeded and the procedures at 40 CFR 63.658(g) and (h) must be followed. [40 CFR 63.658(f)(3)]

Pressure Release Devices:

(a) Work Practice Standard:

(1) Shall operate each pressure relief valve in gas/vapor service with no detectable emissions, as indicated by an instrument reading of <500 ppm above background, except during pressure releases.[40 CFR 63.648(j)(1)]

(2) The following types of pressure relief devices are not subject to the pressure release management requirements in paragraph (j)(3) of this section.

(i) Pressure relief devices in heavy liquid service, as defined in §63.641.

(ii) Pressure relief devices that only release material that is liquid at standard conditions (1 atmosphere and 68 degrees Fahrenheit) and that are hard-piped to a controlled drain system (i.e., a drain system meeting the requirements for Group 1 wastewater streams in §63.647(a)) or piped back to the process or pipeline.

(iii) Thermal expansion relief valves.

(iv) Pressure relief devices designed with a set relief pressure of less than 2.5 psig.

(v) Pressure relief devices that do not have the potential to emit 72 lbs/day or more of VOC based on the valve diameter, the set release pressure, and the equipment contents.

(vi) Pressure relief devices on mobile equipment.

(b) Monitoring and Compliance:

(1) Conduct instrument monitoring as applicable, no later than 5 calendar days after the pressure relief device returns to organic HAP gas or vapor service following a pressure release to verify that the pressure relief device is operating with an instrument reading of less than 500 ppm.[40 CFR 63.648(j)(2)(i)]

(2) Must equip each affected pressure relief device with a device(s) or use a monitoring system that is capable of:

(i) Identifying the pressure release;

(ii) Recording the time and duration of each pressure release; and

(iii) Notifying operators immediately that a pressure release is occurring. The device or monitoring system may be either specific to the pressure relief device itself or may be associated with the process system or piping, sufficient to indicate a pressure release to the atmosphere. [40 CFR 63.648(j)(3)(i)]

(3) Must apply at least three redundant prevention measures to each affected pressure relief device and document these measures. Examples of prevention measures include:

(i) Flow, temperature, level and pressure indicators with deadman switches, monitors, or automatic actuators.

(ii) Documented routine inspection and maintenance programs and/or operator training (maintenance programs and operator training may count as only one redundant prevention measure).

(iii) Inherently safer designs or safety instrumentation systems.

(iv) Deluge systems.

(v) Staged relief system where initial pressure relief valve (with lower set release pressure) discharges to a flare or other closed vent system and control device. [40 CFR 63.648(j)(3)(ii)]

(4) If any affected pressure relief device releases to atmosphere as a result of a pressure release event, the owner or operator must perform root cause analysis and corrective action analysis and implement corrective actions. [40 CFR 63.648(j)(3)(iii)]

(5) Determine the total number of release events occurred during the calendar year for each affected pressure relief device separately and also determine the total number of release events for each pressure relief device for which the root cause analysis concluded that the root cause was a force majeure event, [40 CFR 63.648(j)(3)(iv)]

SECTION E. OPEN BURNING VARIANCE FOR TRAINING

The Permittee may conduct controlled open burning for the firefighting and employee training as follows: [AMS Approval Letter January 25, 2011]

(2) The Permittee shall notify AMS – Facility Compliance Section at 215-685-7580 at least 24 hours prior to any controlled open burning.

(3) All controlled open burning shall follow the parameters specified in January 5, 2011 letter.

(a) The Permittee must obtain approval from AMS prior to changing any of th procedures listed in the January 5, 2011 letter.

(b) AMS may modify or revoke the open burning variance approval if it is determined necessary to prevent air pollution problems.

SECTION F. NON APPLICABLE REQUIREMENTS

AMS has determined that the following regulations are not applicable to the facility:

Pennsylvania Regulations:

25 Pa Code §123.12 – Incinerators

25 Pa Code §129.12 – Sulfuric Acid Plants

25 Pa Code §129.52 – Surface Coating Processes

25 Pa Code §129.54 – Seasonal Incineration Equipment

25 Pa Code §129.59 – Bulk Gasoline Terminals

25 Pa Code §129.60 – Bulk Gasoline Plants

25 Pa Code §129.65 – Ethylene Production Plants

25 Pa Code §129.82 – Control of VOC from gasoline dispensing facilities (Stage II)

NSPS Regulations:

40 CFR 60 Subpart D – Fossil fuel steam gen. units

40 CFR 60 Subpart D(a) – Fossil fuel electric utility boilers

40 CFR 60 Subpart D(c) – Small I/C/I steam gen. units

40 CFR 60 Subpart J – Petroleum refineries – FCC SO2 (no FCC has triggered the SO2 portion of this rule)

40 CFR 60 Subpart GG – Stationary gas turbines

40 CFR 60 Subpart UU – Asphalt roofing plants (stg. blowing of non-roofing asph.)

40 CFR 60 Subpart XX – Bulk Gasoline Terminals

MACT Regulations:

40 CFR 63 Subpart R – Gasoline Distribution (no gasoline loading in refinery)

40 CFR 63 Subpart Y – Mar. Ves. Ldg. – Gaso/Crude/HAP (facility does not trigger loading volume or HAP emission triggers)

40 CFR 63 Subpart DD – Offsite Waste

The following NESHAP regulations have been streamlined as a result of the applicability of related MACT regulations.

40 CFR 61 Subpart J – Bz VHAP Lks (10%w Bz) – 40 CFR 63 Subpart H has subsumed all previous 61/J applicabilities

40 CFR 61 Subpart V – VHAP Equipment Lks – 61/V is the technical section for Subpart J (see comment above)

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

Attachment G
Plan Approvals, Operating Permits, Registrations, Notifications, or Exemptions To Be Incorporated into the Title V/State Operating Permit

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit No: 11276 Date: Febreuary 6, 2012
Plant ID: 01501

Owner: Sunoco, INC
Address: 3144 Passyunk Avenue
Philadelphia, PA 19145

Source: Sunoco Philadelphia Refinery
Location: 3144 Passyunk Avenue
Philadelphia, PA 19145

Attention: Charles D. Barksdale
(215) 339-2074

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on February 6, 2012 approved plans for the installation and temporary operation of the air contamination device(s) described below:

Source Location	Source Description	Rated Capacity	Type of fuel
Basement	Boiler No.1 , Manufacturer: Cleaver Brooks Model: CB800-125 Serial number: L-76183	5.23 MMBTU/hr	No. 2/Natural Gas

This installation permit expires on February 5, 2013.If construction has not been completed by this date, an application for either an extension or new installation permit must be made. The conditions of this installation permit will remain in effect until they are incorporated in an operating permit.

This Installation Permit is subject to conditions prescribed in the attachment.

Rahel Gebrekidan
Environmental Engineer
(215) 685-9429

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 11276
COMPANY: SUNOCO PHILADELPHIA REFINRY

1. The boiler shall be installed, operated and maintained in accordance with both the manufacturer's specifications and the specifications in the application (as approved herein).

2. Particulate matter emissions from the boiler may not exceed 0.10 lbs/MMBTU. [AMR II Sec. V.2]

3. Carbon Monoxide (CO) emissions from boiler may not exceed 1% by volume of exhaust gases. [AMR VIII]

4. The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b) Equal to or greater than 60% at any time.

5. The boiler shall only burn or No. 2 fuel oil or natural gas.

6. The maximum sulfur content of No. 2 fuel oil shall be 0.2 % by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

7. The Permittee shall monitor and keep records of visible emissions for the boiler by using a daily visual check of the exhaust stack during fuel oil burning. The visual check does not need to meet the requirements of U.S.E.P.A Reference Method 9. If visible emissions are detected, adjustments shall be made to the unit to eliminate the visible emissions or a certified smoke reader shall be used to determine the opacity of the emissions.

8. The boiler is not subject to any requirements of 40 CFR 63 Subpart DDDDD as defined in 40 CFR 63.7506(c)(2).

9. The Permittee shall monitor and record monthly fuel usage and keep documenting the sulfur content of fuel oil.

10. The Permittee shall keep records of the daily visual checks for the boiler.

11. All records shall be kept for a period of five years and produced upon request.

12. Any violation of an emission limitation shall be reported by phone call or facsimile transmission to AMS within 24 hours of detection and followed by written notification within thirty-one days.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

February 6, 2012

Charles D. Barksdale
Sunoco Schuylkill River Tank Farm
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 1501

Re: Installation Permit for Boiler

Dear Mr. Barksdale

Enclosed is a copy of signed and final installation permit for a boiler located at 3144 Passyunk Avenue. For your records, also enclosed is a receipt for payment of the application fee.

If you have any questions I can be reached at 215-685-9429 or via email at rahel.gerbekidan@phila.gov.

Sincerely,

Rahel Gebrekidan
Environmental Engineer

Enclosure

City of Philadelphia
Department of Public Health
Air Management Services.

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit No. 08044

Sunoco, Inc. (R&M)
Philadelphia Refinery
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: February 21, 2008
Expiration Date: August 21, 2009

FILE COPY

City of Philadelphia
Department of Public Health
Air Management Services.

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on February 21, 2008, approved plans for the modification of Tank PB TK 843 (16,788,679 gallons) to place the tank in crude tank prep service (mixture of crude oil and water) and install an additional controlled (sleeved) slotted gauge well.

Facility:	**Sunoco, Inc. (R&M) Philadelphia Refinery** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Owner:	**Sunoco, Inc. (R&M) Philadelphia Refinery** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Plant ID:	**01501**
Facility Contact:	**Scott Baker** **(215) 339-2074**
Permit Contact:	**Scott Baker** **(215) 339-2074**

Environmental Engineer _____

Issue Date _____

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on December 29, 2008. If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

August 19, 2013

Charles Barksdale
Philadelphia Energy Solutions
Refining and Marketing LLC.
3144 Passyunk Avenue
Philadelphia PA. 19145

PLID: 01501

RE: Installation Permit 13178

Dear Mr. Barksdale,

AMS has received and reviewed your permit application for the modification of South Yard North Flare at your facility. Enclosed is the permit along with its conditions.

If you have any question, please contact me by email at Biji.Pandisseril@phila.gov or by phone at (215) 685-9427.

Sincerely,

Biji Pandisseril
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit No.: 13178 Date: August 19, 2013

Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passuynk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Charles Barksdale
Environmental Engineer

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on August 19, 2013 approved plans for the installation and temporary operation of the air contamination device(s) described below:

South Yard North Yard Flare replacement of flare tip, replacement bottom igniter, and installation of retractable thermo wells. The project also includes minor maintenance to vessels and mechanical work that includes repairs to LDAR components that were on "Delay of Repair".

[All modification are restricted in accordance Condition 11and therefore will not trigger NSPS Ja]

This Installation Permit expires on August 19, 2014. If construction has not been completed by this date, an application for either an extension or a new installation permit application must be made.

The sources covered by this installation permit are subject to the conditions prescribed in the attachment.

Biji Pandisseril
Environmental Engineer
(215) 685-9427

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 13178
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The South Yard North Flare shall be operated and maintained in accordance with the manufacturer's specification, good engineering practices, and the specifications in the application (as approved herein).

2. Sulfur dioxide emission from the flare shall not exceed 0.05 percent by volume [AMR III Sec II.B]

3. Hydrogen Sulfide (H2S) content of the fuel gas burned in each flare shall not exceed 0.1 grains per dry standard cubic foot. [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1)]
   (a) The combustion of gases generated by the Startup, Shutdown, or Malfunction of the refinery process unit or releases to flare as a result of relief valve leakage or other emergency malfunction are exempt from the above requirement.

4. The flare shall be operated with no visible emission except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4), 40 CFR 60.18(c)(1)]
   (a) Vision emission shall be determined using EPA Method 22

5. The flare shall be operated and maintained in conformance with its design [40 CFR 63.11(b)(1)]

6. The flare shall be in operation at all time when gases are vented [40 CFR 63.643(a), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

7. Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18(c)(2), 40 CFR 60.18(f), 40 CFR 63.11(b)(5)]

8. The net heating value of gases combusted in the flare, as determined by the Methods in 40 CFR 60.18(f)(3) and 63.11(b)(6)(ii) shall be 300 BTU/scf or greater [40 CFR 60.18(c)(3)(ii), 40 CFR 63.11(b)(6)(ii)]

9. The exit velocity of the flare as determined by 40 CFR 60.18(f)(4) and 63.11(b)(7)(i), shall be:[40 CFR 60.18(c)(4), 40 CFR 63.11(b)(7)]
   (a) less than 18.3 m/sec (60 ft/sec) or
   (b) less than 122 m/sec (400 ft/sec) if the net heating value of the gas being combusted is greater than 1000 BTU/scf; or
   (c) less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5) and 63.11(b)(7)(iii), and less than 122 m/sec (400 ft/sec0.

10. The South Yard North Flare shall operate as a fuel gas combustion device. PES shall monitor flare steams into the flare header as described in Alternative Monitoring Protocol for Flares (AMP for flares) approved by EPA and subsequent approved revisions. [Consent Decree Order 05-CV-2866]

11. The modification to South Yard North Flare shall not include [40 CFR 60.100a (c)]
    (a) Physical alteration to increase the flow capacity of the flare.
    (b) Any new piping from the refining process, including ancillary equipment, or fuel gas system is physically connected to the flare (eg, for direct emergency relief or some form of continuous or intermittent venting).
    The following are not considered modifications of a flare:
    (i) Connections made to install monitoring systems to the flare.

(ii) Connections made to install a flare gas recovery system or connections made to upgrade or enhance components of a flare gas recovery system (*e.g.*, addition of compressors or recycle lines).
(iii) Connections made to replace or upgrade existing pressure relief or safety valves, provided the new pressure relief or safety valve has a set point opening pressure no lower and an internal diameter no greater than the existing equipment being replaced or upgraded.
(iv) Connections made for flare gas sulfur removal.
(v) Connections made to install back-up (redundant) equipment associated with the flare (such as a back-up compressor) that does not increase the capacity of the flare.
(vi) Replacing piping or moving an existing connection from a refinery process unit to a new location in the same flare, provided the new pipe diameter is less than or equal to the diameter of the pipe/connection being replaced/moved.
(vii) Connections that interconnect two or more flares.

12. PES shall monitor the fuel type, fuel usage and sulfur content of the fuel burned in the pilot on a daily basis.

13. PES shall monitor the feed to the flare has not exceeded the worst case scenario used in the modeling demonstration. SO2 emissions shall be determined using the same analysis and calculations used in the modeling demonstration. [SO2 Operating Permit]

14. PES shall keep records of the following;
    (a) Continuous records of presence of flame
    (b) Fuel types, fuel usage, and sulfur content of fuel in the pilot daily
    (c) Date, time, duration, and calculated emission of any exceedance.
    (d) Manufacture's and operating specifications.

15. PES shall submit excess emission and continuous monitoring system performance report and /or a summary report to the EPA and AMS semi-annually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

16. PES shall submit all reports to EPA and AMS as required by the Consent Decree Order 05-CV-2866

cc: AMS Conformance File.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

February 19, 2014

Mr. Charles Barksdale
Philadelphia Energy Solutions Refining and Marketing LLC (PES)
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: Plan Approval Application No. 12195 and RACT Plan Approval Amendment for the Modification of Seven (7) Heaters

Dear Mr. Barksdale,

The comment period has ended for Plan Approval Application No. 12195 and the RACT Plan Approval Amendment for the modification of seven (7) heaters. Enclosed are the final issued plan approval, amended RACT plan approval, and comment response document.

If you have any questions, please contact me at (215) 685-9426 or edward.wiener@phila.gov .

Sincerely,

Edward Wiener
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

Plan Approval

Approval No: 12195

Plant ID: 01501

Owner : Philadelphia Energy Solutions Refining and Marketing LLC (PES)
Address: 3144 Passyunk Avenue
Philadelphia, PA 19145

Attention: Mr. Charles Barksdale
Manager, Environmental Department
(215) 339-2074

Source: Philadelphia Energy Solutions Refining and Marketing LLC (PES)

Location: 3144 Passyunk Avenue
Philadelphia, PA 19145

In accordance with provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of Philadelphia Air Pollution Control Board and the Pennsylvania Department of Environmental Protection (PADEP), the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on February 19, 2014, approved plans for the modification and temporary operation of the air contamination device(s) described below:

- Replace the MMBTU per hour firing rate limits with MMBTU per rolling 365-day period limits for the following seven (7) process heaters:
  - Unit 231 B101 Heater (rated capacity 104.5 MMBTU/hr)
  - Unit 865 11H1 Heater (rated capacity 87.3 MMBTU/hr)
  - Unit 865 11H2 Heater (rated capacity 64.2 MMBTU/hr)
  - Unit 210 H101 Heater (rated capacity 192.0 MMBTU/hr)
  - Unit 210 H201A/B Heater (rated capacity 254.0 MMBTU/hr)
  - Unit 866 12H1 Heater (rated capacity 61.2 MMBTU/hr)
  - Unit 868 8H101 Heater (rated capacity 60.0 MMBTU/hr)

- Install Ultra Low-NOx Burners (ULNBs) on the following process heaters:
  - Unit 231 B101 Heater
  - Unit 865 11H1 Heater

This plan approval expires August 19, 2015.

This plan approval is subject to conditions prescribed in the attachment.

Edward Wiener
Chief, Source Registration.

1. The heaters and crude units listed on the cover shall be operated in accordance with the specifications in the application (as approved herein).

2. Emissions from the heaters shall not exceed the following limits in tons per rolling 12-month period, calculated monthly: [Application]

	NOx	SO2	TPM/PM10/PM2.5	CO	VOC	GHG
231 B101 Heater	12.8	0.8	3.1	34.4	2.3	49,243
865 11H1 Heater	10.5	0.7	2.6	28.5	1.9	40,777
865 11H2 Heater	28.3	0.5	1.8	20.4	1.3	29,168
210 H101 Heater	73.1	2.7	6.1	66.9	4.4	95,847
210 H201 Heater	32.6	3.2	8.0	88.5	5.8	126,707
866 12H1 Heater	25.8	0.5	1.7	18.6	1.2	26,601
868 8H101 Heater	27.1	0.6	1.7	18.9	1.2	27,054

Total Particulate Matter (TPM), PM10, and PM2.5 emissions include both filterable (Method 5/ 201A) and condensable particulate (Method 202) for this condition.

Greenhouse Gas (GHG) emissions are expressed in terms of Carbon Dioxide Equivalent (CO_2e), based upon a global warming potential of CH_4 = 21 and N_2O = 310.

3. Nitrogen Oxides (NOx) emissions shall not exceed the following: [Application]

   a. 0.03 lbs/MMBTU for Unit 231 B101 Heater.
   b. 0.03 lbs/MMBTU for Unit 865 11H1 Heater.
   c. 0.113 lbs/MMBTU for Unit 865 11H2 Heater.
   d. 0.089 lbs/MMBTU for Unit 210 H101 Heater. [Case-by-case RACT Plan Approval dated August 1, 2000]
   e. 0.030 lbs/MMBTU for Unit 210 H201A/B Heater. [AMS Plan Approval No. 10180, dated 2/3/11]
   f. 0.113 lbs/MMBTU for Unit 866 12H1 Heater.
   g. 0.113 lbs/MMBTU for Unit 868 8H101 Heater.
   h. Compliance determination shall be based on a 365-day rolling average and NOx Continuous Emission Monitoring System (CEMS) data for Unit 210 H201A/B Heater. Compliance determination shall be based on three 60-minute test runs during an AMS-approved stack test for the other heaters.

4. Particulate Matter (PM) emissions shall not exceed the following:

   a. 0.20 lbs/MMBTU for Unit 231 B101 Heater. [AMR II, Section V.1 – assures compliance with 25 Pa. Code §123.11]
   b. 0.10 lbs/MMBTU for Unit 865 11H1 Heater. [AMR II, Section V.2 – assures compliance with 25 Pa. Code §123.11]
   c. 0.10 lbs/MMBTU for Unit 865 11H2 Heater. [AMR II, Section V.2 – assures compliance

with 25 Pa. Code §123.11]

d. 0.19 lbs/MMBTU for Unit 210 H101 Heater. [25 Pa. Code §123.11 – assures compliance with AMR II, Section V.1]
e. 0.10 lbs/MMBTU for Unit 210 H201A/B Heater. [AMR II, Section V.2 – assures compliance with 25 Pa. Code §123.11]
f. 0.10 lbs/MMBTU for Unit 866 12H1 Heater. [AMR II, Section V.2 – assures compliance with 25 Pa. Code §123.11]
g. 0.10 lbs/MMBTU for Unit 868 8H101 Heater. [AMR II, Section V.2 – assures compliance with 25 Pa. Code §123.11]

PM emissions include only filterable particulate (EPA Method 5) for this condition.

5. Carbon Monoxide (CO) emissions from each heater shall not exceed the following on an hourly basis. Application – Ensures compliance with AMR VIII, Section II.6 for each heater and AMS Installation Permit. 03054 dated July 29, 2003 for Unit 868 8H101 Heater]

   a. 8.6 lbs/hour for Unit 231 B101 Heater.
   b. 7.2 lbs/hour for Unit 865 11H1 Heater.
   c. 5.3 lbs/hour for Unit 865 11H2 Heater.
   d. 15.7 lbs/hour for Unit 210 H101 Heater.
   e. 20.8 lbs/hour for Unit 210 H201A/B.
   f. 5.0 lbs/hour for Unit 866 12H1 Heater.
   g. 4.9 lbs/hour for Unit 868 8H101 Heater.
   h. Compliance determination shall be based on three 60-minute test runs during an AMS-approved stack test.

6. Sulfur Dioxide (SO2) emissions from each heater shall not exceed 500 ppmvd. [25 Pa. Code §123.21(b)]

7. Each heater shall only burn refinery fuel gas.

   a. Each heater shall not burn any fuel gas that contains hydrogen sulfide (H2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104(a)(1), Consent Decree Order 05-CV-2866]

8. Each heater shall be limited to the following rolling 365-day heat input limits: [Application]

   a. Unit 231 B101 Heater shall not exceed 856,000 MMBTU on a rolling 365-day basis.
   b. Unit 865 11H1 Heater shall not exceed 699,000 MMBTU on a rolling 365-day basis.
   c. Unit 865 11H2 Heater shall not exceed 500,000 MMBTU on a rolling 365-day basis.
   d. Unit 210 H101 Heater shall not exceed 1,643,000 MMBTU on a rolling 365-day basis.
   e. Unit 210 H201A/B Heater shall not exceed 2,172,000 MMBTU on a rolling 365-day basis.

f. Unit 866 12H1 Heater shall not exceed 456,000 MMBTU on a rolling 365-day basis.
g. Unit 868 8H101 Heater shall not exceed 480,000 MMBTU on a rolling 365-day basis.

9. The Permittee shall Install Ultra Low-NOx Burners (ULNBs) on the Unit 231 B101 Heater and the Unit 865 11H1 Heater within 18 months of the issuance of this plan approval. Each heater must comply with its existing MMBTU/hr firing rate limit until it has ULNBs installed and has demonstrated compliance with the 0.03 lbs/MMBTU NOx emission limit through an AMS-approved stack test. The NOx emission limits in Conditions 2 and 3 for these heaters are not applicable until the ULNBs have been installed. [Application]

10. The Permittee shall operate the facility consistent and within the projected future actual emissions basis contained in the plan approval application. [Application]

11. The Permittee shall perform an annual adjustment or tuneup on each heater. This adjustment shall include, at a minimum, the following: [Case-by-case RACT, 25 Pa. Code §§129.91-95, Section 2E; 25 Pa. Code §129.93(b)(2) and (5)]

a. Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.
b. Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx, and to the extent practicable minimize emissions of CO.
c. Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.
d. For gas fired units requiring an annual adjustment or tuneup on the combustion process, the Permittee shall make the annual adjustment in accordance with the EPA document "Combustion Efficiency Optimization Manual for Operators of Oil and Gas-fired Boilers," September 1983 (EPA-340/1-83-023) or equivalent procedures approved in writing by the AMS.

12. Each heater shall comply with 40 CFR 63 Subpart DDDDD by no later than January 31, 2016. [40 CFR 63.7495(b)]

13. Within 180 days of the installation of ULNBs for the Unit 231 B101 Heater and the Unit 865 11H1 Heater and within 180 days of the issuance of this plan approval for the other heaters, the Permittee shall conduct the following performance tests:

a. NOx for each heater besides the Unit 210 H201A/B Heater, to determine compliance with NOx emission limits in Condition 2 of this plan approval and to use for determining compliance with the rolling 12-month NOx emission limit in Condition 3.

b. CO for each heater to determine compliance with the CO emission limits in Condition 5 and to use for demonstrating compliance with the rolling 12-month CO emission limit in Condition 3.
c. The NOx and CO tests must be conducted simultaneously.
d. Testing shall be conducted in accordance with 25 Pa. Code Chapter 139. The Permittee shall submit a test protocol to AMS for approval at least 30 days prior to the first test and shall submit a test report with the results no later than 60 days after completion of the last test. If at any time AMS has cause to believe that air contaminant emissions from the heaters for any pollutant may be in excess of the limitations specified in this plan approval, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

14. The Unit 210 Heater 201A/B shall be equipped with continuous monitors and recorders for NOx and O_2. The continuous monitors and recorders shall meet the requirements of 25 Pa. Code Chapter 139. [Consent Decree Order 05-CV-2866, 25 Pa. Code §123.51]

15. Compliance with the NOx limits in Condition 3 shall be based on a rolling 365-day average and NOx CEMS data for heaters with certified NOx CEMS and AMS-approved stack test data for the other heaters.

16. Compliance with the rolling 12-month limits in Condition 2 shall be monitored and recorded on a monthly basis for each heater and shall be based on heat input and the following:

    a. NOx CEMS data for heaters with certified NOx CEMS and the most recent AMS-approved stack test data for the other heaters. An AMS-approved method may be used for the period prior to the completion of the stack tests.
    b. CO limits shall be based on the most recent AMS-approved stack test data for each heater. An AMS-approved method may be used for the period prior to the completion of the stack tests.
    c. For the other pollutants, AMS-approved stack test data if a stack test is ever required. Otherwise, AP-42 or other or other AMS-approved emission factors shall be used.

17. Compliance with the NOx lbs/MMBTU emission limits for the heaters listed in Condition 3 shall be monitored by quarterly stack sampling with a portable NOx analyzer for any heater without a certified NOx CEMS. After one year of sampling, the Permittee may petition AMS for semiannual monitoring. AMS may, at any time, require three one-hour stack tests.

18. The Permittee shall utilize an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any of the heaters that meets the requirements of 25 Pa. Code Chapter 139. [40 CFR 60.105(a)(4)]

    a. The span value for this instrument is 425 mg/dscm H_2S.

b. Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.
c. The performance evaluations for the H_2S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations.
d. H2S shall be monitored at the locations listed in their Title V operating permit.

19. The Permittee shall operate a parametric emissions monitoring system (PEMS) on the 868 8H 101 heater (CU-129) for Carbon Monoxide. The chosen parameters and software CEM shall accurately predict the emissions. Accuracy of the system shall be demonstrated during a stack test. The parameters and predicted emissions shall be monitored and recorded continuously to ensure compliance with the Carbon Monoxide emission limitation of 400 ppmdv at 3% oxygen. [AMS Installation Permit. 03054 dated July 29, 2003]

20. The Permittee shall monitor and record the refinery fuel gas heating value and consumption daily, when each heater is in operation.

21. The Permittee shall monitor and record the MMBTU heat input for each heater hourly and on a rolling 365-day basis, calculated daily, to verify compliance with Condition 8.

a. Fuel gas BTU content shall be continuously monitored and recorded using the continuous heat input monitor at the 862 Unit or tested and recorded daily. The 862 Unit continuous heat input monitor shall meet the requirements of 25 Pa. Code Chapter 139.

22. The Permittee shall monitor and record compliance with the rolling 12-month limits in Condition 2 on a monthly basis.

a. Compliance with NOx limits for heaters with a certified NOx CEMS shall be based on CEM data. Missing or invalid data shall be handled using the missing data substitution procedures of 40 CFR Part 75.
b. Compliance with NOx limits for the other heaters and CO limits for all heaters shall be based on the most recent AMS-approved stack test and heat input or other AMS-approved method for periods prior to the AMS-approved stack test.
c. Compliance with other limits shall be based on AP-42 or other AMS-approved emission factors and heat input.

23. The Permittee shall monitor and record the operating information and estimated emissions for all target heaters and ancillary units daily and on a rolling 12-month basis, calculated monthly, to demonstrate compliance with Condition 10. Calculations shall be based on AMS-approved stack test or CEM data when available. Otherwise, calculations shall use the methods in the plan approval application unless approved by AMS. Records shall be kept in an AMS-approved format that includes the following for each unit:

a. The projected future actual emissions listed in the application.
b. The emissions during the previous rolling 12-month period, calculated monthly.
c. The calculation method.

24. The Permittee shall keep records of all annual adjustments and tuneups required in Condition 11.

25. The Permittee shall submit quarterly reports to AMS for the continuous monitors required in Conditions 14, 18, and 21.a in accordance with 25 Pa. Code Chapter 139 and the Pennsylvania Continuous Source Monitoring Manual.

26. The Permittee shall report excess emission from the process heaters defined as follows: [40 CFR 60.105(e)]
    a. All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system 230 mg/dscm (0.10 gr/dscf).

27. The Permittee shall submit quarterly reports on the compliance with Condition 10 in an AMS-approved format.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

April 8, 2014

Charles Barksdale
Philadelphia Energy Solutions
Refining and Marketing LLC.
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: Butane Railcar Project Plan Approval 14045

Dear Mr. Barksdale,

Air Management Services (AMS) has received and review the permit applications for the Butane railcar project at the South Tank Field. Attached is the plan approval along with its conditions.

If you have any questions, please contact me at 215-685-9427 or Biji.Pandisseril@phila.gov.

Sincerely,

Biji Pandisseril
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit No.: 14045 Date: April 8, 2014

Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Charles Barksdale

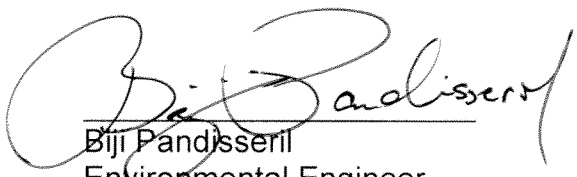
Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on April 8, 2014 approved plans for the installation and operation of the air contamination device(s) described below:

Butane Railcar Project at the South Tank Field, including:

- Railcar butane loading/unloading, to handle 36 rail cars per day (30-day average).
- A Vaporizer system using steam from the refinery steam system to support unloading of railcars via pressure transfer.
- The butane stream will be transferred to the new n-butane bullet (nominal 1100 barrels of storage) or to the Schuylkill River Tank Farm (SRTF) sphere tanks SR-73 - SR-78 through the Inter-refinery pipeline (IRPL)
- Project includes tie-ins to facilitate transfer from rail-cars to existing river crossing to SRTF and nine (9) electric pumps will used to transfer the butane.

This installation permit expires on April 8, 2015. If construction has not been completed by this date, an application for either an extension or new installation permit must be made. The conditions of this installation permit will remain in effect until they are incorporated in an operating permit.

This Installation Permit is subject to conditions prescribed in the attachment.



Biji Pandisseril
Environmental Engineer
(215) 685-9427

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 14045
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The railcar loading/unloading stations shall be installed, operated and maintained in accordance with both the manufacturer's specification and the specifications in the application (as approved herein).

2. Volatile Organic Compounds (VOC) emissions from the railcar butane loading/unloading operation shall be less than 2.7 tons on rolling 12-month period. [Plan Approval Exemption]

3. The Permittee shall only process butane/isobutane/n-butane/butylene streams at railcar loading/unloading stations.

4. The loading/unloading hoses and pipes shall be vented to the 1231/1232 flare and depressurized to 5 – 7 psig prior to disconnecting from the station.

5. All connections shall be equipped with fittings which shall be vapor tight and will automatically and immediately close upon disconnection so as to prevent organic material emissions.

6. No person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V Sec XIII]
   (a) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the AMS; or
   (b) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.

7. The Permittee shall monitor and keep records of VOC emissions on monthly and rolling 12-month basis. VOC emission shall be based on number of loading/unloading operations per day, number of venting to atmosphere, and the following emission factors or other AMS approved factors.
   a) Stinger: 0.008 lb/hose (all loading/unloading events)
   b) Vapor hose: 0.1 lb/hose (only when opening hose to atmosphere)
   c) Product hose: 0.2 lb/hose (only when opening hose to atmosphere)

8. The fugitive emission shall be monitored and recorded on quarterly basis in accordance with the LDAR program for all valves, flanges, and connectors in VOC service.

cc: AMS Conformance File

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Plan Approval No.:13260 Date: July 18, 2014

Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Charles Barksdale
215-339-2074

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of a plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health, Air Management Services (AMS) on January July 18, 2014 approved plans for the operation of the air contamination device(s) described below:

Reactivation of South Yard South Flare (P-643) (CD-112) with a dedicated IR camera to monitor the presence of a flare flame.

This Plan Approval expires on January 17, 2016. If reactivation has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

This Plan Approval is subject to conditions prescribed in the attachment.

7/18/14

Edward Wiener
Chief of Source Registration
(215)-685-9426

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 13260
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The South Yard South Flare shall be operated in accordance with the manufacturer's specifications and specifications in the application (as approved herein).

2. The South Yard South Flare shall comply will all applicable requirements set-forth in 40 CFR 60 Subpart A and J, 40 Subpart 63 Subpart A, and the Consent Decree.

Work Practice:

3. The Permittee shall not burn in flare any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf) on rolling 3-hour period. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt [40 CFR 60.104(a)(1), 40 CFR 60.105(e)(3)(ii)]

4. The flare shall be designed for and operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]

5. The flare shall be operated at all times when gases may be vented to them. The flare shall be operated with a minimum of a 98% Combustion Efficiency at all times when waste gases are vented to it. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

6. The flares shall be operated with a pilot flame present at all times. [40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]

7. The Permittee shall operate and maintain a flare gas recovery system to prevent continuous or routine combustion in the flare. [Consent Decree, Use of the flare gas recovery system obviates the need to continuously monitor emissions as otherwise required by 40 CFR 60.105(a)(4)]
   (a) Periodic maintenance shall be conducted for flare gas recovery systems.
   (b) All reasonable measures shall be taken to minimize emissions during the periodic maintenance on a flare gas recovery system is being performed.
   (c) The flare gas recovery system may be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes.

8. The flare (steam-assisted flare) shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]

9. The flare (steam-assisted flare) may be designed and operated with an actual exit velocity less than Vmax and less than 122m/sec (400 ft/sec) [40 CFR 60.18(c)(4)(iii)]
   (a) Actual exit velocity shall be determined in accordance with 40 CFR 60.18(f)(4)
   (b) Vmax shall be determined in accordance with 40 CFR 60.18(f)(5)

10. The Permittee shall implement good air pollution control practices to minimize Hydrocarbon Flaring Incidents in accordance with the procedures in the Consent Decree.

Testing Requirements:

11. Within 60 days of start-up of the flare, the Permittee shall conduct performance test as follows:

(a) Test Method 22 in Appendix A of 40 CFR 60 shall be used to determine the compliance of flares with the visible emission limitations. The observation period is 2 hours and shall be used according to Method 22. [40 CFR 63.11(b)(4), 40 CFR 60.18(f)(1)]

(b) The net heating value of the gas being combusted in a flare shall be calculated using the following equation [40 CFR 60.18(f)(3)]:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i=Concentration of sample component "i" in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

(c) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

(i) In lieu of conducting the velocity test , the Permittee may submit velocity calculations which demonstrate that the Flare meets the performance specification required by 40 CFR 60.18

(d) The maximum permitted velocity, V_{max}, for flares complying with 40 CFR 60.18(c)(4)(iii)) shall be determined by the following equation: [40 CFR 60.18(f)(5)]

$$\text{Log10}\,(V_{max}) = (HT + 28.8)/31.7$$

where:

V_{max}=Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T=The net heating value as determined in 40 CFR 60.18 (f)(3).

Monitoring and Recordkeeping Requirement:

12. The Permittee shall monitor the fuel type and fuels usage of the fuel burned for each flare pilot on a daily basis.

(a) H2S in the refinery fuel gas fired at the pilot shall be monitored using a continuous monitor and recorder at the Point Breeze Fuel Gas Mix Drum, ~~except when burning fuel gas that is inherently low in sulfur content, such as natural gas~~

13. The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO2 emissions using the same analysis and calculations used in the modeling demonstration. [SO2 Operating Permit]

14. The presence of a flare pilot flame shall be continuously monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]
    (a) The flare flame shall be monitored using an IR camera.

Reporting Requirements:

15. The Permittee shall follow the same investigation, reporting, and corrective action procedures as those set forth in Section V.K for Acid Gas Flaring Incidents of the Consent Decree. The results of this will be submitted with the Semi-Annual CD Report.

16. The Permittee shall submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

17. The Permittee shall submit CEM report for the H2S to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

18. The Permittee shall submit all calculation used to comply with Condition 11.

19. All notifications required, as a result of any condition herein should be directed to

    Chief of Source Registration
    Air Management Services
    321 University Avenue
    Philadelphia, PA 19104

    and all notifications required by the Consent Decree and NSPS Ja shall also be directed to EPA at:

    Associate Director
    Office of Enforcement and Compliance Assistance (3AP20)
    U.S. EPA Region III
    1650 Arch Street
    Philadelphia, PA 19103-2029

Future Requirements (no later than November 11, 2015):

20. The flare shall comply with all applicable requirements of 40 CFR 60 Subpart Ja.

21. The Permittee shall not burn any fuel gas containing H2S in excess of 162 ppmv in the flare. The H2S content in the fuel gas shall be determined hourly on a 3-hour rolling average basis [40 CFR 60.103a(h) and 40 CFR 60.103a(f)]
    (a) The combustion in the flare of process upset gases or fuel gas that is released to the flare as the result of relief valve leakage or other emergency malfunctions is exempt from the above limit.

22. The Permittee shall develop and implement a written flare management plan **no later than the November 11, 2015** in accordance with 40 CFR 60.103a

23. The Permittee shall conduct a root cause analysis and a corrective action analysis for each of the following [Consent Decree and 40 CFR 103a(c)]
    (a) Any time the SO2 emission exceeds 227 kilograms (kg) (500 lbs) in any 24-hour period

(b) Any discharge to the flare in excess of 14,160 standard cubic meter (m3) (500,000 standard cubic feet (scf)) above the baseline, determined in 40 CFR 60.103a(a)(4)

24. The Permittee shall complete a root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified Condition 23. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are as follows: [40 CFR 60.103a(d)]
    (a) If a single continuous discharge meets any of the conditions specified in Condition 23 for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.
    (b) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions in Condition 23(a) - (b), a single root cause analysis and corrective action analysis may be conducted.
    (c) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in 40 CFR 60.103a(a)(5) were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in §60.108a(c)(6) and reported as described in §60.108a(d)(5).
    (d) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in 40 CFR 60.103a(c)(1)(i)-(iii) in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted.
    (e) Except as provided above in Condition 24(d), if discharges occur that meet any of the conditions specified in Condition 23(a) - (b) for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

25. The Permittee shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to Condition 24 in accordance with the following applicable requirements: [40 CFR 60.103a(e)]
    (a) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the Permittee concludes that corrective action should not be conducted, the Permittee shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 CFR §60.108a(c)(6)(ix).
    (b) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.
    (c) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the Permittee shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 CFR§60.108a(c)(6)(x).

26. The Permittee shall keep records of discharges greater than 500 lb SO_2 in any 24-hour period from the flare. Records shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds. The records shall include information as required in 40 CFR 60.108a(c)(6). [Consent Decree and 40 CFR 60.108a(c)(6)]

27. The Permittee shall continuously monitor and record the H2S concentration for fuel gases being burned in the flare in accordance with 40 CFR 60.107a(a)(2).

28. The Permittee shall continuously monitor and record the flow rate of gas discharged to the flare. [40 CFR 60.107a(f)]

29. The total reduced sulfur concentration for each gas line directed to the flare shall be monitored in accordance with either paragraph 40 CFR 60.107a(e)(1), (e)(2) or (e)(3). [40 CFR 60.107a(e)]

30. The Permittee shall maintain a copy of the Flare Management Plan.[40 CFR 60.108a(c)(1)]

31. If the monitoring option in 40 CFR 60.107a(e)(2) is used, the Permittee shall keep records of the H_2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H_2S ratios, the calculated 10-day average total sulfur-to-H_2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H_2S ratio. [40 CFR 60.108a(c)(7)]

32. The Permittee shall submit the flare management plan to AMS and EPA in accordance with 40 CFR 60.103a(b) no later than November 11, 2015.

33. The Permittee shall submit an excess emissions reports for all periods of excess emissions as defined in 40 CFR 60.107a(i)(2)(i) in accordance with 40 CFR 60.108a(d)

34. All notifications required in 40 CFR 60 Subpart Ja shall be submitted to the following address: [40 CFR60.103a(b)(3)]

U.S. Environmental Protection Agency,
Office of Air Quality Planning and Standards, Sector Policies and Programs Division,
U.S. EPA Mailroom (E143-01),
Attention: Refinery Sector Lead,
109 T.W. Alexander Drive,
Research Triangle Park, NC 27711.

Electronic copies in lieu of hard copies may also be submitted to refinerynsps@epa.gov.

cc: AMS Conformance file

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
James W. Buehler, M.D.
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

August 11, 2014

Charles Barksdale
Philadelphia Energy Solutions
Refining and Marketing LLC.
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: Installation Permits 14219 and 14220

Dear Mr. Barksdale,

AMS has received and reviewed your permit applications for the two 460 BHP John Deere fire pumps that will be installed for the Butane Terminal Firewater System at PES. Enclosed is the permit along with its conditions.

If you have any questions, please contact me by email at laura.nikkel-dumyahn@phila.gov or by phone at (215) 685-9433.

Sincerely,

Laura Nikkel-Dumyahn

Laura Nikkel-Dumyahn
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit No.: 14219-14220 Date: August 11, 2014

Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Charles Barksdale
Environmental Engineer

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on August 11, 2014 approved plans for the installation and operation of the air contamination device described below:

Two (2) permanent Tier 4 diesel fired pumps for the Butane Terminal Firewater System.

1)	Engine Manufacturer: John Deere Engine Model # JX6H-UFADF0	Horsepower Rating: 460 hp Engine Manufactured Yr: 2014
2)	Engine Manufacturer: John Deere Engine Model # JX6H-UFADF0	Horsepower Rating: 460 hp Engine Manufactured Yr: 2014

This installation permit expires on August 11, 2015. If construction has not been completed by this date, an application for either an extension or new installation permit must be made. The conditions of this installation permit will remain in effect until they are incorporated in an operating permit.

This Installation Permit is subject to conditions prescribed in the attachment.

Laura Nikkel-Dumyahn
Environmental Engineer
(215) 685-9433

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 14219-14220
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The fire pumps shall be installed, operated, and maintained in accordance with both the manufacturer's specifications and the specifications in the application (as approved herein).

Emission Limits

2. Nitrogen Oxides (NOx) emissions from the fire pumps shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period. [Plan Approval Exemption, 25 Pa Code § 127.14(a)(8)]

3. Non-Methane Hydrocarbon and Nitrogen Oxides (NMHC + NOx) emission from the fire pumps shall not exceed 4.0 grams per kilowatt-hour (g/kW-hr) or 3.0 grams per horsepower-hour (g/hp-hr). [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2), and 40 CFR 89.112(a)]

4. Carbon Monoxide (CO) emissions from the fire pumps shall not exceed any of the following:
   (a) 3.5 g/kW-hr or 2.6 g/hp-hr; [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2), and 40 CFR 89.112(a)]
   (b) 1% by volume of exhaust gases. [AMR VIII]

5. Particulate Matter (PM) emissions from the fire pumps shall not exceed any of the following:
   (a) 0.20 g/kW-hr or 0.15 g/hp-hr; [40 CFR 60.4205(b), 40 CFR 60.4202(a)(2), and 40 CFR 89.112(a)]
   (b) 0.04 grain per dry standard cubic foot. [25 Pa Code §123.13(c)(1)(i)]

6. The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b) Equal to or greater than 60% at any time.

Work Practice Standards

7. The fire pumps shall be installed with a non-resettable hour meter. [40 CFR 60.4209(a)]

8. The fire pumps shall comply with the following requirements [Assures compliance with Condition 2]
   (a) Each fire pump shall operate less than 500 hours per rolling 12-month period.
   (b) Testing for each fire pump is limited to 30 minutes per week.

9. The fire pumps shall only burn diesel fuel. The diesel fuel used in the fire pumps shall meet the following requirements:
   [40 CFR 60.4207(b), 40 CFR 89.510(b)]
   (i) The maximum sulfur content of the diesel fuel shall be 15 parts per million (ppm);
   (ii) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

10. The fire pumps shall be operated only during emergencies, testing, and engine tuning. Emergencies are defined as the endangerment of lives, equipment, possessions, or inventories by fire.

11. During the ozone season (May 1 – September 30), the Permittee shall comply with the following requirements of Air Management Regulation (AMR) XV:
    (a) Testing of emergency engines during the ozone season (May 1 to September 30) shall only be done between the hours of 5 PM and 11 PM. Facilities that are able to demonstrate compliance with Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) can perform testing and/or tuning between the hours of 5:00pm and 7:30 am.
    (b) No testing and/or tuning of emergency engines shall be performed on a day for which an Air Quality Forecast has predicted an Air Quality Action Day or on an Air Quality Action Day during the ozone season. An Air Quality Action Day is defined when the Air Quality Index (AQI) for the Southeast Region of Pennsylvania has exceeded the National Ambient Air Quality Standards for ozone or fine particulate matter. An Air Action Day is represented by an AQI greater than 100.
    (c) Prior to testing during the ozone season, the Permittee shall check the AQI. The AQI forecast can be checked after 5 pm on the day prior to testing or on the day of testing. This can be done by either:
        i. Receiving daily forecasts by email from the Pennsylvania Air Quality Partnership, which can be subscribed to by registering at: http://www.dep.state.pa.us/aq_apps/aqpartners/emailadd.asp
        ii. Checking for the forecast at the following website: http://www.dep.state.pa.us/aq_apps/aqpartners/forecast.asp?vargroup=se
        iii. Calling the Pennsylvania Air Quality Partnership Hotline (Southeast Region) at 1-800-872-7261. The recorded message will indicate the forecast in terms of a color code. A color code of orange or red corresponds to an AQI above 100.
    (d) All fire pumps are exempt from the requirements of Conditions (a)-(c) above during emergencies or emergency repairs regardless of the air quality.

12. **Sound levels produced by each fire pump shall not exceed the following:
    (a) 5 decibels above background level measured at the property boundary of the nearest occupied residential property: or
    (b) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property
    [Philadelphia Code Title 10 Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

13. **Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

Monitoring and Recordkeeping requirements:

14. The Permittee shall monitor and keep records of the following:
    (a) For each engine, fuel type, amount of fuel used, fuel manifests documenting the sulfur content of fuel oil to demonstrate compliance with Condition 9.
    (b) For each engine, daily operating hours and operating hours per rolling 12-month period calculated monthly and operating hours during the ozone season to demonstrate compliance

with Conditions 8 and 11(a)-(d).

(c) Manufacturer's engine compliance certification or data to demonstrate compliance with the applicable emission standards in 40 CFR 60.4205(b) (Conditions 3, 4a, and 5a). [40 CFR 60.4211(b)]

(d) During the ozone season, the date and time of testing and/or tuning was performed on each engine and the AQI or color code during testing and/or tuning to demonstrate compliance with condition 11 for each engine.

15. All records shall be kept for two (2) years and be produced upon request to Air Management Services. [25 PA Code 129.95]

16. Any violation of an emission limitation shall be reported by phone call (215-685-7580, Fax 215-685-7593) or facsimile transmission to AMS within 24 hours of detection and followed by written notification within thirty-one days.

** This is a local requirement and is not federally enforceable.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
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Source Registration
321 University Avenue, 2nd Floor
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Telephone (215) 685-7572
Fax (215) 685-7593

August 29, 2014

Charles D. Barksdale
Philadelphia Energy Solution
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 1501

Re: General Plan approval for Tank PB-36 and Tank GP-285

Dear Mr. Barksdale

Enclosed are signed and final General Permit for Tank PB-36 and Tank GP-285 located at 3144 Passyunk Avenue.

If you have any questions I can be reached at 215-685-9429 or via email at rahel.gerbekidan@phila.gov.

Sincerely,

Rahel Gebrekidan
Environmental Engineer

Enclosure

City of Philadelphia
Department of Public Health
Air Management Services.

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) Nos. 14237

Philadelphia Energy Solution Refining & Marketing LLC (PES)
3144 Passyunk Ave
Philadelphia, PA 19145

Issuance Date: August 29, 2014
Expiration Date: February 27, 2016

City of Philadelphia
Department of Public Health
Air Management Services.

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **August 29, 2014** approved plans to **return Tank PB-36 (P-010) with external floating roofs to gasoline service. This Tank was closed In Place on August 16, 2012.**

Facility:	**Philadelphia Energy Solution Refining & Marketing LLC 3144 Passyunk Ave Philadelphia, PA 19145**
Owner:	**Philadelphia Energy Solution Refining & Marketing LLC 3144 Passyunk Ave Philadelphia, PA 19145**
Plant ID:	**01501**
Facility Contact:	**Charles D. Barksdale (215) 339-2074**
Permit Contact:	**Charles D. Barksdale (215) 339-2074**
Rahel Gebrekidan	Rahel Gebrekidan
Issue Date	8/29/14

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **February 27, 2016.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
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321 University Avenue, 2nd Floor
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Telephone (215) 685-7572
Fax (215) 685-7593

August 29, 2014

Charles D. Barksdale
Philadelphia Energy Solution
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 1501

Re: General Plan approval for Tank PB-36 and Tank GP-285

Dear Mr. Barksdale

Enclosed are signed and final General Permit for Tank PB-36 and Tank GP-285 located at 3144 Passyunk Avenue.

If you have any questions I can be reached at 215-685-9429 or via email at rahel.gerbekidan@phila.gov.

Sincerely,

Rahel Gebrekidan
Environmental Engineer

Enclosure

City of Philadelphia
Department of Public Health
Air Management Services.

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) Nos. 14228

Philadelphia Energy Solution Refining & Marketing LLC (PES)
3144 Passyunk Ave
Philadelphia, PA 19145

Issuance Date: August 29, 2014
Expiration Date: February 27, 2016

City of Philadelphia
Department of Public Health
Air Management Services.

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **August 29, 2014** approved plans the modification of **Tank P-015 (GP-285) with internal floating roofs & Nitrogen blanket system currently permitted to contain Naphtha to allow to hold UDEX temporarily between November 2014-November 2015) while Tank PB-121 is out of service:**

Facility:	**Philadelphia Energy Solution Refining & Marketing LLC 3144 Passyunk Ave Philadelphia, PA 19145**
Owner:	**Philadelphia Energy Solution Refining & Marketing LLC 3144 Passyunk Ave Philadelphia, PA 19145**
Plant ID:	**01501**
Facility Contact:	**Charles D. Barksdale (215) 339-2074**
Permit Contact:	**Charles D. Barksdale (215) 339-2074**
Rahel Gebrekidan	Rahel Gebrekidan
Issue Date	8/29/14

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **February 27, 2016.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee fro m its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

September 2, 2014

Mr. Charles Barksdale
Philadelphia Energy Solutions Refining and Marketing LLC (PES)
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: Plan Approval Application No. 14149 to Install a 350 MMBTU/hr boiler (Boiler 45)

Dear Mr. Barksdale,

The comment period has ended for Plan Approval Application No. 14149. Enclosed is the final issued plan approval.

If you have any questions, please contact me at (215) 685-9426 or edward.wiener@phila.gov .

Sincerely,

Edward Wiener
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Plan Approval No: 14149 Date: September 2, 2014

Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Charles Barksdale
Environmental Engineer

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on September 2, 2014, approved plans for the installation and operation of the air contamination device(s) described below:

A 350 MMBTU/hr boiler (Boiler # 45) burning refinery fuel gas (RFG) at 3 Boilerhouse with low NOx burners (LNB), flue gas recirculation (FGR), CO Oxidation catalyst, selective catalytic reduction (SCR) system, a wet electrostatic precipitator (WESP), and continuous oxygen trim system.

This Plan Approval expires on March 2, 2016. If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

9/2/14

Edward Wiener
Chief of Source Registration
(215) 685-9426

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 14149
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The boiler (Boiler # 45) shall be installed, maintained, and operated in accordance with the manufacturer's specifications and the specifications in the application (as approved herein).

2. Emissions from the Boiler #45 shall not exceed the following:

	lb/MMBTU [h]	*tons per year* [e]
Nitrogen Oxides (NOx)	0.0033[a]	5.06
Sulfur dioxide (SO_2)		15.15[b]
Carbon monoxide (CO)		5.69
Volatile Oxide Compounds (VOCs)	0.00094[a]	1.44
Particulate Matter ($PM/PM_{10}/PM_{2.5}$)[f]	0.0040 [a,g]	6.13
Sulfuric Acid (H_2SO_4)		2.32
Lead (Pb)		7.61E-04[c]
Ammonia		3.44[d]
Greenhouse Gas (GHG)		182,774 (as CO_2e)

Notes:
[a] *Based on application.BAT limits.*
[b] *Calculated using 60 ppmv of H_2S*
[c] *Calculated using AP-42 factors*
[d] *Calculated using ammonia slip and flue gas flow.*
[e] *NOx and SO_2 emission shall be based on rolling 365 day average.. All other emission are based on rolling 12-month average.*
[f] *PM emission are both filterable PM and condensable PM combines*
[g] *PM emissions are streamlined. The above BAT limit is more stringent than AMR II Sec. V.2 and 25 Pa Code 123.11(a)(3)*
h VOC and PM emission shall be based on 3-hour average stack test. NOx emission shall be based on hourly average and compliance shall be demonstrated using CEMs.

3. Emissions from the No. 3 Boilerhouse (Boiler #37, Boiler #39, Boiler # 40, and Boiler #45) shall not exceed the following in any rolling 12-month period.
   (a) 253.7 tons of NOx on rolling 12-month period
   (b) 152.5 tons of SO2 on rolling 12-month period
   (c) 416.8 tons of CO on rolling 12-month period
   (d) 50.6 tons of PM/PM10 on rolling 12-month period
   (e) 34.0 tons of VOC on rolling 12-month period

4. Carbon Monoxide emissions from the boiler (Boiler # 45) shall not exceed:
   (a) 3.90 ppmvd @ 7% O2 [25 PA Code 127.1]
   (b) 1% by volume of exhaust gases. [AMR VIII. Sec.II.6]

5. Ammonia slip from the boiler (Boiler # 45) shall not exceed 5.0 ppmvd @ 3% O2 [25 Pa Code 127.1]

6. The Permittee shall only burn refinery fuel gas (RFG) or natural gas in the boiler (Boiler # 45). The H_2S in the fuel gas burnt in the boiler shall not be in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and 60 ppmv determined daily on a 365 successive calendar day rolling average basis. [40 CFR 60.102a(g)(1)(ii)]

7. The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [*25 Pa Code §123.41*]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b) Equal to or greater than 60% at any time.

8. Total combined heat input to the No. 3 Boilerhouse (Boiler #37, Boiler #39, Boiler # 40, and Boiler

#45) shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis

9. The boiler (Boiler # 45) shall be installed and be operated with low NOx burners (LNB), flue gas recirculation (FGR), CO oxidation catalyst, selective catalytic reduction (SCR), and a wet electrostatic precipitator (WESP).

10. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration NOx and O2 emission discharged to the atmosphere. The CEMs shall meet NOx and O2 Performance Specs in 40 CFR 60 Appendix and 25 PA Code Chapter 139. [40 CFR 60.48b(b)]

11. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.107a(a)(2)

12. Beginning January 31, 2016, the Permittee shall conduct tune-up of the boiler (Boiler # 45) every 5 years to demonstrate continuous compliance as specified below.
    (a) Each tune-up shall include: [40 CFR 63.7540(a)(10)]
        (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). If entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;
        (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;
        (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).
        (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject;
        (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer;
            (A) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Condition 12(a)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]
            (B) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

13. The Permittee shall comply with requirement of NOx Budget Source in 25 Pa Code 145
    (i) The Permittee shall monitor and report NOx emissions in accordance with 40 CFR Part 96, Subpart HHHH (relating to monitoring and reporting), and establish a CAIR-authorized account representative and general account, in accordance with 40 CFR Part 96, Subparts BBBB and FFFF (relating to CAIR designated representative for CAIR NOx Ozone Season sources; and CAIR NOx Ozone Season Allowance Tracking System), incorporated into Subchapter D by reference, for the purposes of ensuring continued compliance with the non-EGU NOx Trading

Program budget limitation 25 Pa Code 145.8(d)(1) and of retiring CAIR NOx Ozone Season allowances. [25 Pa Code 145.8(d)(2)]

(ii) A CAIR-authorized account representative and general account shall be established in accordance with 40 CFR Part 96, Subparts BB and FF (relating to CAIR designated representative for CAIR NOx sources; and CAIR NOx allowance tracking system), incorporated into 25 Pa Code 145 Subchapter D by reference, for the purpose of retiring CAIR NOx allowances. [25 Pa Code 145.8(d)(3)]

(iii) If the combined NOx emissions from all units subject to 25 Pa Code 145 (in the state of Pennsylvania) exceed 3,438 tons in an ozone season, then a unit whose actual emissions exceed the unit's allowable emissions for that ozone season, as determined under 25 Pa Code 145.8(d)(5), shall surrender to the Pa DEP by April 30 of the year following the ozone season one CAIR NOx Ozone Season allowance and one CAIR NOx allowance for each ton of excess emissions. A unit whose excess emissions are 0.5 ton or greater of the next excess ton shall surrender 1 full ton of CAIR NOx allowances (banked or current) for that excess emission. Units under common ownership may include the allowable and actual emissions from multiple units to determine whether a unit must surrender allowances. [25 Pa Code 145.8(d)(6)]

(iv) If a facility's allowable emissions exceed the facility's actual emissions for an ozone season, the owner or operator may deduct the difference or any portion of the difference from the actual emissions of units under the facility's common control that are subject to § § 129.201—129.203 (relating to boilers; stationary combustion turbines; and stationary internal combustion engines). [25 Pa Code 145.8(d)(11)]

14. The Permittee shall conduct stack tests to determine compliance as follows:
    (a) CO, VOC, PM/PM10/PM2.5, and Ammonia emission limit in Condition 2, 4, 6, & 8 within 180 days of start-up
    (b) Compliance with CO, PM/PM10/PM2.5 and Ammonia emission shall be demonstrated every five years from the previous stack test.
    (c) The initial stack test shall establish the minimum voltage (6-minute average) required to assure compliance PM/PM10/PM2.5 emission limit
    (d) The initial stack test shall establish the maximum ammonia injection required to assure compliance with Ammonia slip and NOx emission limit.
    (e) The initial stack test shall determined minimum inlet temperature to the CO oxidation catalyst to assure compliance with CO emission limit.
    (f) The operating parameter (maximum voltage, maximum ammonia injection, and minimum inlet temperature) may be modified through subsequent AMS approved stack test.

15. The Permittee shall conduct annual checks of CO level in stack using handheld instrument to assure performance of CO oxidation catalyst.

16. The Permittee shall monitor and keep records of the following: *[25 Pa Code §127.12b(c)]*
    (a) Combined No. 3 Boilerhouse emissions to assure compliance with Condition 3
    (b) Combined heat input daily and rolling 365-day basis to determine compliance with Condition 8.
    (c) The NOx emissions daily on a rolling 365-day basis to demonstrate compliance with the emission limits. NOx emissions shall be determined based on CEM data. Other emissions shall be determined based on AMS-approved stack test data, AP-42 emissions factors, or other AMS-approved emission factors.
    (c) The SO2 emission daily on a rolling 365-day basis. SO2 emission shall be calculated on daily basis, based on H2S content in the fuel and the amount of fuel used.
    (d) All other emissions shall be calculated on monthly and rolling 12-month basis. Calculation shall be based on AMS approved stack test or AP-42 emission factors.
    (e) Daily fuel type and fuel usage.
    (f) Daily ammonia injection rate, voltage across the WESP, and inlet temperature of the oxidation

catalyst.

(g) ~~Annual~~ stack CO check using handheld instrument.

(h) Tune-up in accordance with 40 CFR 63 Subpart DDDDD

All records shall be kept for a period of five years and produced upon request by AMS.

All records shall be kept for a period of five years and produced upon request by AMS.

17. The Permittee shall, within two hours of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

cc: AMS Conformance file

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit No.: 13020B

Amend Date: **March 20, 2015**

Plant ID: 01501

Owner: Philadelhia Energy Solutions (PES) Holdings, LLC
Address: 3144 Passuynk Ave
Philadelphia, PA 19145

Source: North Yard Logistics, L.P
Address: 3144 Passuynk Ave
Philadelphia, PA 19145

Attention: Charles Barksdale
Environmental Engineer

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **June 10, 2014** approved plans for the installation of the air contamination device(s) described below:

Two Crude Rail Car Unloading facilities at Point Breeze (PB)

- Each with 14 units train /week capacity (each unit train = 120 railcars or 85,000 barrels)
- Each unloading area will include two (2) separate tracks with a manifold system. Each track accommodating 60 railcars.
- Operation involves gravity aided transfer of crude between Railcars to a Manifold System, using flexible hoses equipped dry disconnect and vapor tight fittings. Railcars are typically unloaded from bottom valve, with gravity to aid product flow.
- There will be six (6) electric pumps (3 for each manifold). Two (2) pumps will be used at time at each manifold and one (1) pump will be spare at each manifold.
- Three (3) electric pumps will used to transfer the crude from PB tanks to GP 137 Unit.

[This permit removes Condition 8 in AMS Installation Permit 13020, dated April 8, 2013, and combines permits AMS Installation Permits 13020, dated April 8, 2013 and AMS Installation Permit 14106, dated May 27, 2014]

[This permit was admended on **March 20, 2015** to incorporate a change of ownership from PES Refining and Marketing LLC (PES R&M) to North Yard Logistics, LP. North Yard Logistics, L.P is under control of PES Holdings, LLC which also owns PES R&M.]

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 13020B
COMPANY: NORTH YARD LOGISTICS, L.P

This Installation Permit expires on **June 10, 2015.** If construction has not been completed by this date, an application for a new Installation Permit must be made. The conditions of this Installation Permit will remain in effect until they are incorporated in an operating permit.

This installation permit is subject to conditions prescribed in the attachment.

Maryjoy Ulatowski 3/20/15

Maryjoy Ulatowski
Environmental Engineering Specialist
(215) 685-9475

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 13020B
COMPANY: NORTH YARD LOGISTICS, L.P

1. The above source shall be operated in accordance with the specifications in the application as approved herein.

2. Fugitive VOC emission from each crude rail car unloading facility shall not exceed 500 lbs per rolling 12-month period.

3. All pumps handling organic materials having a vapor pressure of 1.5 pounds per square inch absolute or greater at ambient conditions shall have mechanical seals, or other components of equal or greater efficiency approved by AMS. [AMR V Sec IV]

4. No person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V Sec XIII.A]
   (a) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the AMS;
      (i) Leak definition for valves and pumps shall comply with Global Consent Decree issued as part of Civil Action No. 05-02866
   (b) The VOC emission is in a liquid state at the point(s) of discharge into the atmosphere.

5. Any new equipment is subject to the Leak Detection and Repair requirements of the Global Consent Decree issued as part of Civil Action No. 05-02866 when those Consent Decree requirements are in effect at the refinery

6. PES shall only unload using vapor tight connections and when vapor recovery system is in operation.

7. PES shall take any steps necessary to eliminate any emission from this operation that could create odor beyond its facility boundary. [AMR V Sec XX]

8. PES shall incorporate all components of fugitive source into the Refinery's current Leak Detection and Repair Program. The leak inspection program shall be in accordance with 25 PA Code 129.58, AMR V, and the Consent Decree. A visual check for leaks shall be performed at the beginning of each transfer, and PES shall continue to visually monitor for leaks during the transfer.

9. PES shall monitor and record the following for crude oil transfer operations in a format that is acceptable to AMS:
   (a) On monthly basis monitor and record crude throughput at the 137 Crude Unit and the 210 Crude Unit.
   (b) Calculate monthly fugitive VOC emission from all valves, pumps, compressors, safety pressure relief devices or other process equipment components to demonstrate compliance with Condition 2.

(i) Verification shall be based on EPA 1995 Protocol for Equipment Leak Emission Estimates, Table 2-12, or subsequent AMS approved factors.

(c) On a monthly basis, record the following:
   (i) The true vapor pressure and Reid Vapor Pressure of the crude oil loaded.
   (ii) Any daily malfunctions that occur during the transfer operation
   (iii) Quantity of crude oil loaded during malfunctions

10. All records shall be kept for a minimum period of 5 years and produced upon request by AMS.

11. PES shall submit semi-annual reports as required by the Global Consent Decree issued as part of Civil Action No. 05-02866

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Approval No: 06050A

Amend Date: March 20, 2015

Plant ID: 01501
Owner: PES
Mailing Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: Philadelphia Energy Solutions (PES)
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Attention: Charles D. Barksdale Jr.
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on March 20, 2015 approved plans for the modification of the air contamination source(s) described below:

- Installation of ReVAP technology on the 433 Hydrofluoric Acid Alkylation Unit (HFAU), including new storage and receiving facility for the ReVAP additive and new cells for the 433 Cooling Tower.
- Increase the maximum daily alkylate throughput capacity of the 433 HFAU from 22,500 barrels per day to 30,000 barrels per day on a rolling 365-day average.
- Improvements to ancillary equipment and the 431 Depropanizer and Deisobutanizer.
- Increase the permitted maximum operating limit of the 433 Isostripper H-1 Heater from 243 MMBTU/hr to 260 MMBTU/hr (no physical modification required).

03/20/2015 – This amends the original Plan Approval No. 06050A issued December 4, 2006. The following are changes or revisions from the original Plan Approval No. 06050.

- **Replace the 0.035 lb/MMBtu NOx limit with a 5.0 lbs/hr NOx during periods of start-ups,shutdowns, chemical washings and dry-outs.**
- **Remove the fuel oil limits for #3 Boiler House with a condition that #3 Boiler House shall only burn refinery gas per Consent Decree dated May 24, 2005, Civil Action No. 05-02866.**

This plan approval expires on September 20, 2016. If modification has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating permit.

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 06050A
COMPANY: PES

The sources covered by this plan approval are subject to the conditions prescribed in the attachment.Wherever a conflict occurs between this installation permit and operating permit, construction permit, or any local, state, and federal regulations, the Permittee, shall in all cases, meet the more stringent requirement.

3/20/15

Edward Wiener
Chief, Source Registration

1. The HFAU shall be operated in accordance with the specifications in the application (as approved herein).

2. PES shall operate the HFAU in accordance with 40 CFR 60 Subparts A, GGG, 40 CFR 63 Subparts A, CC, PA DEP Title 25 Sections 127.1, 123.13, 123.22, 123.41, 129.55, 129,58, 129.91, and Air Management Regulation II, III and V whichever is more restrictive.

3. This plan approval may be terminated, suspended or revoked and reissued in accordance with 25 PA Code § 127.13a. If AMS or EPA determines that the owner or operator of PES is liable for violations of the New Source Review or Prevention of Significant Deterioration Requirements, PES shall submit an application to amend this plan approval and or any subsequently amended operating permit.

4. Upon notification, PES shall remodel for SO_2 to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) when AMS has cause to believe that the attainment or maintenance of the NAAQS is in jeopardy.

5. The allowable emissions for the H-1 Heater shall not exceed the following limits:

POLLUTANTS	EMISSION LIMITS		
	Concentration	(lbs/MMBTU)	Tons/year
Total PM/PM_{10}		0.00745	8.5
SO_2		0.033	37.6
CO		0.0985	112.2
NO_x		0.035[a]	39.9
VOC		0.0065	7.4

Notes:
a. Compliance with lbs/MMBTU emission limits shall be based on hourly continuous emission monitor data for NO_x and three one-hour stack tests, if required by AMS, for the other pollutants.
During periods of start-up and shutdown, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. Start up shall be defined as that period of time from initiation of the heater operation until the unit reaches steady state. Shutdown shall be defined as the cessation of the heater operation. Each period shall not exceed 8 hours. Shutdown and startup periods are limited to 40 hours per 12 month rolling period combined.

During periods of chemical washing of the 433 Unit, the 0.035 lb/MMBtu NOx limit is replaced with a 5.0 lbs/hr NOx limit. The total chemical washing and dryout periods shall not exceed 144 hours per rolling 24 month period. The air dry out period time is defined as the time required to operate the Heater at very low firing rates when compressed air or nitrogen is injected into the unit and the temperature increased to evaporate free water in the system. Free water must be removed prior to re-introducing acid into the unit, and is evidenced by no longer finding any water at low point bleeders.

b. Tons per year emission limits are on a rolling 365-day basis. Compliance with these limits shall be based on continuous emission monitor data for NO_x and stack test data (if required) or AP-42 emission factors, daily fuel usage, and fuel BTU content for the other pollutants.
c. Total PM/PM_{10} emission limits include filterable particulate, as measured by Method 5, and condensable particulate, as measured by Method 202.
d. PM, CO, and SO_2 concentration limits assure compliance with 25 PA Code §§ 123.11 & 123.22, AMR II § VII, and AMR VIII § II.

6. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]

    a. Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.

    b. Equal to or greater than 60% at any time.

7. PES shall not permit at any time the emission into the outdoor atmosphere of any malodorous air contaminants, in such a manner that malodors are detectable outside its boundary. [25 Pa Code §123.31(b)]

8. The HFAU production rate shall be limited to 30,000 barrels per day calculated on a 365-day rolling average basis.

9. The H-1 Heater shall operate with ultra low-NO_x burners and with a heat input limit of 260 MMBTU/hr (24-hour average).

10. The #3 Boiler House shall only burn refinery fuel gas [Consent Decree dated May 24, 2005, Civil Action No. 05-02866.]

11. PES shall meet the requirements of 40 CFR 60 Subpart GGG (references VV) for fugitives associated with the 433 HFAU. For equipment in organic HAP service, PES shall comply with the requirements for fugitives in 40 CFR 63 Subpart CC (references 40 CFR 60 Subpart VV).

12. In accordance with 25 PA Code Section 129.55(d), the purging of VOCs during a unit turnaround shall be performed in a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the initial pressure in such equipment reaches 19.7 psia.

13. If at any time AMS has cause to believe that air contaminant emissions from the H-1 Heater may be in excess of the limitations specified in Condition 5, PES shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s)

14. The H-1 Heater shall be equipped with NO_x and O_2 continuous emission monitors and recorders at the outlet for compliance determination with the NO_x emission limitation. The continuous monitors must conform to USEPA performance specifications in 25 Pa Code §123.31 and the PA DEP Continuous Source Monitoring Manual (PA CSMM). The Phase II performance testing of each continuous monitor shall occur within 60 days after achieving maximum production rate, but no later than 90 days after re-starting the unit.

15. PES shall record the HFAU production rate daily and on a 365-day rolling average, calculated daily.

16. PES shall record the H-1 Heater operating rate in MMBTU/hr hourly and on a 24-hour average, calculated hourly.

17. PES shall keep records of the dates and duration of each of shutdown and start-up periods to demonstrate compliance with the 40 hours per rolling 12 month period limit.

18. PES shall keep records of the dates and duration of each chemical washing and drying out to demonstrate compliance with the 144 hours per rolling 24-month period.

19. For #3 Boiler House PES keep records of refinery fuel gas usage and refinery fuel gas heating value for each boiler.

20. PES shall submit CEM and production reports to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

21. Any notifications required, as a result of any condition herein should be directed to Chief of Source Registration, Air Management Services, 321 University Avenue, Philadelphia, PA 19104.

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) No. 15101

Philadelphia Energy Solutions
Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: March 24, 2015
Expiration Date: September 24, 2016

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **March 24, 2015** approved plans for the **repair, modification, and reactivation of the following storage tanks located at the facility:**

GP 15101 – Repair, Modify, and Return Point Breeze Tank (PB) 36 (P-010) to Gasoline Service (Internal Floating Roof, Dome 3,410,400 gallons).

Facility:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Owner:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Plant ID:	**1501**
Facility Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**
Permit Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**

Maryjoy Ulatowski Maryjoy Ulatowski
Environmental Engineering Specialist

Issue Date **March 24, 2015**

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **September 24, 2016.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee fro m its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115b(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit Nos.: 15171, 15172, & 15182 Date: August 13, 2015

Plant ID: 01501

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: PES Philadelphia Refinery
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Attention: Charles Barksdale
Environmental Director

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **August 13, 2015** approved plans for the installation and temporary operation of the air contamination device(s) described below:

1) Installation and temporary operation of the air following contamination device(s):

Installation Permit No.	Source Description and Location
15171	Unit 867 Acid Gas Flare, 6F-371A (ID# P-646) Flare tip replacement & pilot assembly (in kind). No increase to flare capacity.
15172	Unit 867 Sour Water Stripper Gas Flare, 6F-371B (ID# P-646) - Flare tip replacement & pilot assembly (in kind). No increase to flare capacity.
15182	North Yard CD-104 Flare - Flare tip replacement & pilot assembly (in kind). No increase to flare capacity.

This Installation Permit expires on **August 13, 2016** . If construction has not been completed by this date, an application for either an extension or a new installation permit application must be made.
The sources covered by this installation permit are subject to the conditions prescribed in the attachment.

Maryjoy Ulatowski

Maryjoy Ulatowski
Environmental Engineer Specialist
(215) 685-9475

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NOs. 15171, 15172, & 15182
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The flare tips and pilot assemblies shall be installed, operated, and maintained in accordance with the manufacturer's specification, good engineering practices, and the specifications in the application (as approved herein).

2. Sulfur dioxide emission from each flare shall not exceed 0.05 percent by volume [AMR III Sec II.B]

3. Hydrogen Sulfide (H2S) content of the fuel gas burned in each flare shall not exceed 0.1 grains per dry standard cubic foot. [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1)]
   (i) The combustion of gases generated by the Startup, Shutdown, or Malfunction of the refinery process unit or releases to flare as a result of relief valve leakage or other emergency malfunction are exempt from the above requirement.

4. Each flare shall be operated with no visible emission except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4), 40 CFR 60.18(c)(1)]
   (i) Vision emission shall be determined using EPA Method 22

5. The flares shall be operated and maintained in conformance with its design [40 CFR 63.11(b)(1)]

6. The flares shall be in operation at all time when gases are vented [40 CFR 63.643(a), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

7. Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18(c)(2), 40 CFR 60.18(f), 40 CFR 63.11(b)(5)]

8. The net heating value of gases combusted in the flares, as determined by the Methods in 40 CFR 60.18(f)(3) and 63.11(b)(6)(ii) shall be 300 BTU/scf or greater [40 CFR 60.18(c)(3)(ii), 40 CFR 63.11(b)(6)(ii)]

9. The exit velocity of the flare as determined by 40 CFR 60.18(f)(4) and 63.11(b)(7)(i), shall be:[40 CFR 60.18(c)(4), 40 CFR 63.11(b)(7)]
   (i) less than 18.3 m/sec (60 ft/sec) or
   (ii) less than 122 m/sec (400 ft/sec) if the net heating value of the gas being combusted is greater than 1000 BTU/scf; or
   (iii)less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5) and 63.11(b)(7)(iii), and less than 122 m/sec (400 ft/sec0.

10. The flares shall operate as a fuel gas combustion device. PES shall monitor flare steams into the flare header as described in Alternative Monitoring Protocol for Flares (AMP for flares) approved by EPA and subsequent approved revisions. [Consent Decree Order 05-CV-2866]

11. PES shall monitor the fuel type, fuel usage and sulfur content of the fuel burned in each pilot on a daily basis.

12. PES shall monitor the feed to the flares has not exceeded the worst case scenario used in the

modeling demonstration. SO_2 emissions shall be determined using the same analysis and calculations used in the modeling demonstration. [SO_2 Operating Permit]

13. PES shall keep records of the following:
    (i) Continuous records of presence of flame;
    (ii) Fuel types, fuel usage, and sulfur content of fuel in each pilot daily;
    (iii) Date, time, duration, and calculated emission of any exceedance; and
    (iv) Manufacturer's and operating specifications.

14. PES shall submit excess emission and continuous monitoring system performance report and /or a summary report to the EPA and AMS semi-annually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

15. PES shall submit all reports to EPA and AMS as required by the Consent Decree Order 05-CV-2866

cc: AMS Conformance File.

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) No. 15322

Philadelphia Energy Solutions Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: 12/14/2015
Expiration Date: 6/14/2017

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **12/14/2015** approved plans for the **modification of the following storage tank located at the facility:**

GP 15322 – Permit Tank PB-36 (P-010) to Store Ethanol, Gasoline and Gasoline Components

Facility:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Owner:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Plant ID:	**1501**
Facility Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**
Permit Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**

Nicole Stilwell Nicole Stilwell
Graduate Environmental Engineer

Issue Date **12/14/2015**

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **6/14/2017.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **6/14/2016.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) No. IP-1600009

Philadelphia Energy Solutions Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: March 9, 2016
Expiration Date: September 9, 2017

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **March 9, 2016** approved plans for the **modification of the following storage tank located at the facility:**

IP-1600009 **Reactivate Tank PB-162 (P-537) to Gasoline and Gasoline Components Service.**

Facility: **PES, LLC**
3144 Passyunk Avenue
Philadelphia, PA. 19145

Owner: **PES, LLC**
3144 Passyunk Avenue
Philadelphia, PA. 19145

Plant ID: **1501**

Facility Contact: **Charles Barksdale, Jr.**
(215) 339-2074

Permit Contact: **Charles Barksdale, Jr.**
(215) 339-2074

Maryjoy Ulatowski
Engineering Supervisor Maryjoy Ulatowski

Issue Date **March 9, 2016**

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **September 9, 2017.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

PLID 01501

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

March 22, 2016

Mr. Charles Barksdale
Philadelphia Energy Solutions Refining and Marketing LLC (PES)
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: RACT Plan Approval

Dear Mr. Barksdale,

Enclosed is the latest RACT plan approval for your facility. It has been issued. Pursuant to § 5-1005 of the Philadelphia Home Rule Charter, an administrative appeal of this License may be filed with the Board of Licenses and Inspections Review (BLIR). Any such appeal should be filed within thirty (30) days, include a copy of this RACT plan approval and be directed to:

Board of License and Inspection Review
Municipal Services Building, 11th Floor
1401 JFK Blvd.
Philadelphia, PA 19102

If you have any questions, please contact me at (215) 685-9426 or edward.wiener@phila.gov .

Sincerely,

Edward Wiener
Environmental Engineer

03221600

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

RACT PLAN APPROVAL

Effective Date: February 9, 2016

Expiration Date: None

Replaces Permit Nos. PA Permit Numbers 51-1501 and 51-1517 dated August 1, 2000

In accordance with provisions of the Air Pollution Control Act, the Act of January 8, 1960, P.L. 2119, as amended, and after due consideration of a Reasonably Available Control Technology (RACT) proposal received under the Pennsylvania Code, Title 25, Chapter 129.91 thru 129.95, of the rules and regulations of the Pennsylvania Department of Environmental Protection (PADEP), Air Management Services (AMS) approved the RACT proposal of the Facility below for the source(s) listed in section 1.A. Emission Sources of the attached RACT Plan Approval.

Facility:	Philadelphia Energy Soultions Refining and Marketing LLC (PES)
Owner:	Philadelphia Energy Soultions Refining and Marketing LLC
Location:	Girard Point Processing Area located at 3001 Penrose Ave Point Breeze Processing Area located at 3144 Passyunk Ave
Mailing Address:	3144 Passyunk Ave., Philadelphia, PA 19145
SIC Code(s):	2911
Plant ID:	1501 and 1517
Facility Contact:	Charles Barksdale
Phone:	(215) 339-2074
Permit Contact:	Charles Barksdale
Phone:	(215) 339-2074
Responsible Official:	Nithia Thaver and Mark Brandon
Title:	General Managers

Edward Wiener, Chief of Source Registration

2/9/16
Date

The RACT plan approval is subject to the following conditions:

1. The purpose of this Plan Approval is to establish Nitrogen Oxides (NOx)/Volatile Organic Compound (VOC) Reasonably Available Control Technology (RACT) for PES Girard Point Processing Area and Point Breeze Processing Area. This includes the following emission sources and control equipment:

   A. Emission Sources

   (1) Process Heaters: Unit 137: F1 heater (415 MMBTU/hr)
   F2 heater (155 MMBTU/hr)
   F3 heater (60 MMBTU/hr)
   All three heaters burn refinery fuel gas.

   (2) Process Heater: Unit 231: B-101 heater (104.5 MMBTU/hr) fires refinery fuel gas.

   (3) Process Heater: Unit 433: H-1 heater (260 MMBTU/hr) Heater fires refinery fuel gas.

   (4) Process Heaters: Unit 1332: H-400 heater (186 MMBTU/hr)
   H-401 heater (233 MMBTU/hr)
   H-2 heater (60 MMBTU/hr)
   These heaters burn refinery fuel gas.

   (5) Process Heater: Unit 1232: B-104 heater (70 MMBTU/hr) Heater fires refinery fuel gas.

   (6) Boiler House #3: Boiler #37 (495 MMBTU/hr)
   Boiler #39 (495 MMBTU/hr)
   Boiler #40 (660 MMBTU/hr)
   These boilers fire refinery fuel gas.

   (7) Crude Unit 210: Section A HTR H101 (192.0 MMBTU/hr)
   Section B HTR H201 (254.0 MMBTU/hr
   Section C HTR 13H1 (235.4 MMBTU/hr)
   These heaters above fire refinery fuel gas.

   (8) Hydrocracker Unit 859: HTR 1H1 (98 MMBTU/hr – installed in 2009) Unit fires refinery fuel gas.

   (9) Reformer Unit 864: HTR PH1 (80 MMBTU/hr)
   HTR PH11 (74 MMBTU/hr)
   HTR PH12 (85.1 MMBTU/hr)
   These heaters fire refinery fuel gas.

   (10) Distillate HDS Unit 865: HTR 11H1 (87.3 MMBTU/hr after installation of ULNBs)
   HTR 11H2 (64.2 MMBTU/hr)
   These heaters fire refinery fuel gas.

   (11) Gas-Oil HDS Unit 866: HTR 12H1Heater (61.2 MMBTU/hr) fires refinery fuel gas

(12) Reformer Unit 860: HTR 2H3 (174.67 MMBTU/hr) Unit fires refinery fuel gas.
HTR 2H5 (155 MMBTU/hr) Unit fires refinery fuel gas.

HTR 2H2 (69.78 MMBTU/hr) Unit fires refinery fuel gas.
HTR 2H4 (99.44 MMBTU/hr) Unit fires refinery fuel gas.

HTR 2H7 (59 MMBTU/hr) Unit fires refinery fuel gas.

(13) 868 FCCU HTR 8H101 Unit fires refinery fuel gas

(14) 868 FCCU Catalyst Regenerator

(15) Cooling towers

(16) Fugitive leaks: valves, flanges, compressors, pumps, pipes.

(17) Unit 870: HTR H01 (97 MMBTU/hr)
HTR H02 (53 MMBTU/hr
These heaters fire refinery fuel gas.

(18) Unit 1232 FCCU

(19) Girard Point Barge Loading (P130)

(20) Point Breeze Marine Barge Loading (P636)

B. Control Equipment

(1) Ultra-low NOx burner (ULNB) systems are installed on the following sources to control NOx emissions:
Unit 433 H-1 heater
Unit 1232 B-104 heater
#3 Boiler House boilers #37, #39, and #40.
Unit 210 H201 heater
Unit 870 H01 and H02 heaters
Unit 859 1H1 heater
Unit 137 F-3 heater
Unit 1332 H-2 heater.

(2) Flue Gas Recirculation (FGR) is also installed on #3 Boiler House boilers #37, #39, and #40.

(3) Selective Catalytic Reduction (SCR) shall be installed on Unit 1332 H-400 and H-401 heaters. PES shall operate the SCR system while operating the heaters *(H-400/401)* except during times required to replace SCR catalyst or to do maintenance to the SCR/air pre-heater system or to operate the heaters at low firing rate during reformer catalyst regenerations. PES shall take a daily NOx sample during these maintenance periods when it is necessary to by-pass the *SCR/air* pre-heater system and the NOx CEM, and the heaters are operated in natural draft mode. During these natural draft operating periods the maximum allowable NOx limitation will be 0.15 lb/MMBTU on a daily average, as defined in Condition 4.B below. All emissions during the natural draft duration shall be counted in the rolling 365-day limit in Condition 4.B.

(4) Thermal Oxidizer shall be operated on Girard Point Barge Loading (CD-011).

2. This approval requires and authorizes:

A. The installation of Ultra Low NOx Burners on 231 B101 heater and 865 11H1 heater to comply with RACT requirements by August 19, 2015.

B. PES will use combustion tuning to comply with RACT requirements for the following heaters:

Unit 137: F1 heater, F2 heater, F3 heater
Unit 1332: H-400 heater, H-401 heater, H-2 heater
Crude Unit: 210A HTR H101, 210C HTR 13H1
Hydrocracker Unit 859: HTR 1H1
Reformer Unit 864: HTR PH1, HTR PH11, HTR PH12

Distillate HDS Unit 865: HTR 11H2
Reformer Unit 860: HTR 2H3, HTR 2H5, HTR 2H4, HTR 2H2, HTR 2H7
Gas Oil HDS Unit 866: HTR 12H1
Unit 868: HTR 8H101

C. All process heaters and boilers are limited to refinery fuel gas and will be capped at the heat input specified in the table below.

Process Unit	Source	Heat Input Cap (MMBTU/hr)
Unit 137:	F1 heater	415
	F2 heater	155
Unit 433:	H-1 heater	260
Unit 1332:	H-400 heater	186
Unit 1232:	B-104 heater	70
Boiler House #3:	Boilers #37, and #39	495
	Boiler #40	660

D. PES shall monitor all fuel input to all heaters and boilers with BTU limitations on a daily basis to insure capacity limits are not exceeded or PES shall install fuel limiting devices on the heaters or boilers to keep capacities below allowable.

E. The 868 FCCU NOx emissions shall be limited to 100 ppmdv @ 0% O_2 on a 7-day rolling average 130.2 tons per rolling 365-day period. PES shall follow good combustion practices controlling the level of excess oxygen and CO promoter in the regenerator to minimize NOx emissions from the regenerator. A NOx Continuous Emission Monitoring System (CEMS) shall be operated on the unit.

F. The 1232 FCCU shall have Selective Catalytic Reduction (SCR). NOx emissions shall not exceed 30 ppmdv @ 0% O_2 on a 7-day rolling average and 208.28 tons per rolling 365-day period. The 1232 FCCU shall be operated with good combustion practices. A NOx Continuous Emission Monitoring System (CEMS) shall be operated on the unit.

G. The 1232 FCCU shall vent to the CO Boiler when operating in partial-burn mode and shall follow good combustion practices.

H. PES shall utilize an equipment monitoring program in accordance with 40 CFR 63 subpart CC for VOC fugitive emissions from cooling towers.

I. Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder.

J. Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4 psi or greater. VOC emissions from Point Breeze Marine Barge Loading shall not exceed 25.99 tons per rolling 12-month period.

K. PES shall comply with the requirements of 25 Pa Code Section 129.58 for VOC fugitive emissions.

3. RACT Implementation Schedule

A. PES shall immediately begin the implementation of the measures necessary to comply with the approved RACT Plan Approval.

B. Sources proposing combustion tuning to comply with RACT requirements of 25 PA Code 129.91(f) shall perform the annual combustion tuning by December 31st of each year not to exceed 12 months between tunings.

C. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall complete the annual adjustment or tune-up by December 31st of each year not to exceed 12 months between tunings.

D. Sources proposing installing Ultra Low NOx Burners to comply with RACT requirements of 25 PA Code 129.91(f) shall perform combustion tuning annually by December 31st of each year not to exceed 12 months between tunings.

E. The 231 B101 heater shall be limited to 91 MMBTU/hr until the burners are installed. The 865 11H1 heater shall be limited to 72.2 MMBTU/hr until the burners are installed. The 0.03 lbs/MMBTU NOx emission limit listed below for each unit will not become applicable until the burners are installed.

4. Testing Requirements and Stack Emission Limitations

A. For units installing ULNB, PES shall conduct performance tests for NOx. The results of these tests have been submitted to AMS.

B. The final NOx RACT emission limits for the #3 Boiler House boilers, 137 Unit F1 heater, and Unit 210 H201 heater, have been established through the use of Department approved Continuous Emission Monitoring System (CEMS). Compliance with the limitations listed below will be on a 30-day rolling average based on hourly averages of CEM data for the Unit 137 F1 heater, on a daily average based on hourly averages of CEM data for limits noted as daily average, and on a 365-day rolling average based on hourly averages of CEM data for the other units. The limits for the Unit 231 B101 heater and Unit 865 11H1 heater are not applicable until the Ultra Low NOx Burners are installed.

Source	Limitation
Boiler House #3 – boilers #37, #39, and #40	0.040 lbs. NOx/MMBTU
Boiler House #3 – boilers #37, #39, and #40	0.10 lbs. NOx/MMBTU (daily average)
137 Unit F1 heater	0.230 lbs. NOx/MMBTU
Unit 210 H201 heater	0.03 lbs. NOx/MMBTU
Unit 231 B101 heater	0.03 lbs. NOx/MMBTU
Unit 865 11H1 heater	0.03 lbs. NOx/MMBTU
Process Heater Unit 1332 H-400 heater	0.06 lbs. NOx/MMBTU
Process Heater Unit 1332 H-401 heater	0.06 lbs. NOx/MMBTU
Process Heater Unit 1332 H-400 heater	0.15 lbs. NOx/MMBTU (daily average)
Process Heater Unit 1332 H-401 heater	0.15 lbs. NOx/MMBTU (daily average)

C. Compliance with emission limits for combustion sources listed below shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at any time, require three one-hour stack tests.

	Limitation (lbs. NOx/MMBTU
Source	Gas
Process Heater Unit 433 H-1 heater	0.035
Crude Unit 210A HTR H101	0.089
Crude Unit 210C HTR 13H1	0.104
F-2 @ 137 Unit	0.257
F-3 @ 137 Unit	0.060
B-101@ 231 Unit	0.122
H-2 @ 1332 Unit	0.040
B-104 @ 1232 Unit	0.177
1H-1 @ 859 Unit	0.020
PH-1 @ 864 Unit	0.167

PH-11 @ 864 Unit	0.145
PH-12 @ 864 Unit	0.119
11H-1 @ 865 Unit	0.113
2H-3 @ 860 Unit	0.163
2H-5 @ 860 Unit	0.163
2H-2 @ 860 Unit	0.350
2H-4 @ 860 Unit	0.270
2H-7 @ 860 Unit	0.157
Unit 865 11H2 heater	0.113
Unit 866 12H1 heater	0.113
Unit 868 8H101 heater	0.113
H01 @ 870 Unit	0.035
H02 @ 870 Unit	0.035

D. All annual combustion tuning shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5).

E. At least thirty (30) days prior to a performance NOx test, PES shall inform AMS of the date and time of the scheduled test.

F. PES shall conduct performance tests to determine compliance with the lbs NOx/MMBTU emission limits of this plan approval for the following heaters:

i. Within 180 days of the installation of ULNBs for the Unit 231 B101 Heater and the Unit 865 11H1 Heater.

ii. By June 08, 2016 for the Unit 210 H101 Heater, Unit 865 11H2 Heater, Unit 866 12H1 Heater, and Unit 868 8H101 Heater.

iii. Testing shall be conducted in accordance with 25 Pa. Code Chapter 139

G. The Unit 210 H201 Heater shall be equipped with continuous monitors and recorders for NOx and O_2. The continuous monitors and recorders shall meet the requirements of 25 Pa. Code Chapter 139.

H. Each heater listed below shall be limited to the following rolling 365-day heat input limits:

i. Unit 231 B101 Heater shall not exceed 856,000 MMBTU on a rolling 365-day basis.
ii. Unit 865 11H1 Heater shall not exceed 699,000 MMBTU on a rolling 365-day basis.
iii. Unit 865 11H2 Heater shall not exceed 500,000 MMBTU on a rolling 365-day basis.
iv. Unit 210 H101 Heater shall not exceed 1,643,000 MMBTU on a rolling 365-day basis.
v. Unit 210 H201A/B Heater shall not exceed 2,172,000 MMBTU on a rolling 365-day basis.
vi. Unit 866 12H1 Heater shall not exceed 456,000 MMBTU on a rolling 365-day basis.
vii. Unit 868 8H101 Heater shall not exceed 480,000 MMBTU on a rolling 365-day basis.

5. Recordkeeping and Reporting Requirements

A. The permittee shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements of 25 PA Code 129.91 - 129.94.

B. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91-129.94 are met.

C. Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

D. Records shall be retained for at least two years and shall be made available to the Department on request.

7. The company shall not impose conditions upon or otherwise restrict the Department's access to the aforementioned source(s) and/or any associated air cleaning device(s) and shall allow the Department to have access at any time to said source(s) and associated air cleaning device(s) with such measuring and recording equipment, including equipment

recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act.

8. Revisions to any conditions approved as RACT by EPA will require resubmission as revision to the PA State Implementation Plan. The applicant shall bear the cost of public hearing and notification required for EPA approval as stipulated in 25 PA Code §129.9(h).

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) No. IP-16000034

Philadelphia Energy Solutions
Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: April 27, 2016
Expiration Date: October 27, 2017

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **April 27, 2016** approved plans for the **modification of the following storage tank located at the facility:**

IP-16000034 Reactivate Tank GP 1212 (P-165) to Cumene Service.

Facility: **PES, LLC**
3144 Passyunk Avenue
Philadelphia, PA. 19145

Owner: **PES, LLC**
3144 Passyunk Avenue
Philadelphia, PA. 19145

Plant ID: **1501**

Facility Contact: **Charles Barksdale, Jr.**
(215) 339-2074

Permit Contact: **Charles Barksdale, Jr.**
(215) 339-2074

Maryjoy Ulatowski
Engineering Supervisor

Issue Date **April 27, 2016**

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **XXXXX.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Thomas A. Farley, MD MPH
Health Commissioner

Caroline C. Johnson, M.D.
Interim Deputy Health Commissioner

Air Management Services
Kassahun Sellassie, Ph.D., PE
Acting Director

Source Registration
321 University Avenue, 2nd floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

May 19, 2016

Mr. Charles Barksdale
Philadelphia Energy Solutions Refining and Marketing LLC (PES)
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: Plan Approval No. 15247 to Amend Plan Approval No. 14149

Dear Mr. Barksdale,

Enclosed is Plan Approval No. 15247 to modify some conditions in Plan Approval No. 14149 for Boiler No. 45. It has been issued. Pursuant to § 5-1005 of the Philadelphia Home Rule Charter, an administrative appeal of this License may be filed with the Board of Licenses and Inspections Review (BLIR). Any such appeal should be filed within thirty (30) days, include a copy of this RACT plan approval and be directed to:

Board of License and Inspection Review
Municipal Services Building, 11th Floor
1401 JFK Blvd.
Philadelphia, PA 19102

If you have any questions, please contact me at (215) 685-9426 or edward.wiener@phila.gov. .

Sincerely,

Edward Wiener
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Plan Approval No: 15247 Amendment Date: May 19, 2016
Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Charles Barksdale
Site Environmental Director

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on September 2, 2014, approved plans for the installation and operation of the air contamination device(s) described below:

A 350 MMBTU/hr boiler (Boiler # 45) burning refinery fuel gas (RFG) at 3 Boilerhouse with low NOx burners (LNB), flue gas recirculation (FGR), CO Oxidation catalyst, selective catalytic reduction (SCR) system, a wet electrostatic precipitator (WESP), and continuous oxygen trim system.

5/19/16 – This Plan Approval amends the original Plan Approval No. 14149 issued September 2, 2014. The following are changes or revisions from the original Plan Approval No. 014149.

- **Replace the 0.0033 lb/MMBtu NOx limit with a 30 day rolling average NOx limit of 0.012 lb/MMBTU. The 30 day rolling limit assures compliance with 40 CFR 60.102a(g)(2)(i).**
- **Allow a NOx emission limit of 10.0 lbs/hr during start-ups, shutdowns, and maintenance periods. Periods of start-up, shut-downs, and maintenance shall not exceed 200 hours per rolling 12 month period.**
- **Clarify emission limits, compliance methods, and calculation methods for emissions limits in Condition 2.**

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 15247
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

This Plan Approval expires on November 19, 2016. If construction or modification has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

5/19/16

Edward Wiener
Chief of Source Registration
(215) 685-9426

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 15247
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The boiler (Boiler # 45) shall be installed, maintained, and operated in accordance with the manufacturer's specifications and the specifications in the application (as approved herein).

2. Emissions from the Boiler #45 shall not exceed the following:

Table 1: Boiler 45 Emission limits

Pollutant	Emission Limit	Notes, Compliance Methods, Calculation Method
Nitrogen Oxides (NOx)	0.012 lb/MMBTU higher heating value basis determined daily on a 30 day rolling average. (Application, 25 PA Code 127.1 ,This assures compliance with 40 CFR 60.102a(g)(2)(ii))	30 day rolling average NOx emissions shall be based on hourly averages and compliance shall be determined by the NOx CEM data and boiler BTU of the fuel burned. Periods of start-up, shutdown and, maintenance shall be included in the 0.012 lb/MMBtu 30 day rolling average NOx average calculation.
	5.06 tons per year.	Based on a rolling 365 day average using CEM data.
Sulfur dioxide (SO_2)	15.15 tons per year.	Based on a rolling 365 day average, Calculated using 60ppm of H_2S.
Carbon monoxide (CO)	5.69 tons per rolling 12 month period.	Based on a 3-hr average stack test approved by AMS, calculated monthly.
Volatile Oxide Compounds (VOCs	1.44 tons per rolling 12 month period 0.00094 lb/MMBTU	Based on a 3-hr average stack test approved by AMS, calculated monthly. Based on a 3-hr average stack test approved by AMS. [Application, 25 PA Code 127.1]
Particulate Matter ($PM/PM_{10}/PM_{2.5}$) [b]	0.0040 lb/MMBTU 6.13 tons per rolling 12 month period.	Based on a 3-hr average stack test. [Application, 25 PA Code 127.1] Based on a 3-hr average stack test approved by AMS, calculated monthly.
Sulfuric Acid (H_2SO_4)	2.32 tons per rolling 12 month period.	
Lead (Pb)	7.61E-04 tons per rolling 12 month period.	Calculated using AP-42 factors.
Ammonia	3.44 tons per rolling 12 month period.	Based on stack test, calculated using ammonia slip and flue gas flow)
Greenhouse Gas (GHG)	182,774 tons per rolling 12 month period. (as CO_2e)	

(a) During periods of start-up, shutdown, and maintenance, the Selective Catalytic Reduction (SCR) catalyst is less than 530 degrees F, ammonia cannot be injected into the system to control NOx. Start- up shall be defined as that period of time from initiation of the boiler operation until the unit reaches steady state. Shutdown shall be defined as the cessation of the boiler operation.
(b) NOx emission during periods of start-up, shut-down, and maintenance shall not exceed 10.0 lbs/hr.
(c) Periods of star-up, shut-down, and maintenance shall not exceed 200 hours per rolling 12 month period.

3. Emissions from the No. 3 Boilerhouse (Boiler #37, Boiler #39, Boiler # 40, and Boiler #45) shall not exceed the following in any rolling 12-month period.
   (a) 253.7 tons of NOx on rolling 12-month period;
   (b) 152.5 tons of SO2 on rolling 12-month period;
   (c) 416.8 tons of CO on rolling 12-month period;
   (d) 50.6 tons of PM/PM10 on rolling 12-month period;
   (e) 34.0 tons of VOC on rolling 12-month period.

4. Carbon Monoxide emissions from the boiler (Boiler # 45) shall not exceed any of the following:
   (a) 3.90 ppmvd @ 7% O2 [25 PA Code 127.1]
   (b) 1% by volume of exhaust gases. [AMR VIII. Sec.II.6]

5. Ammonia slip from the boiler (Boiler # 45) shall not exceed 5.0 ppmvd @ 3% O2 [25 Pa Code 127.1]

6. The Permittee shall only burn refinery fuel gas (RFG) or natural gas in the boiler (Boiler # 45). The H_2S in the fuel gas burned in the boiler shall not be in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and 60 ppmv determined daily on a 365 successive calendar day rolling average basis. [40 CFR 60.102a(g)(1)(ii)]

7. The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [*25 Pa Code §123.41*]
   (a)Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b)Equal to or greater than 60% at any time.

8. Total combined heat input to the No. 3 Boilerhouse (Boiler #37, Boiler #39, Boiler # 40, and Boiler #45) shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis

9. The boiler (Boiler # 45) shall be installed and be operated with low NOx burners (LNB), flue gas recirculation (FGR), CO oxidation catalyst, selective catalytic reduction (SCR), and a wet electrostatic precipitator (WESP).

10. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration NOx and O2 emission discharged to the atmosphere. The CEMs shall meet NOx and O2 Performance Specs in 40 CFR 60 Appendix and 25 PA Code Chapter 139. [40 CFR 60.48b(b)]

11. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.107a(a)(2)

12. Beginning January 31, 2016, the Permittee shall conduct tune-up of the boiler (Boiler # 45) every 5 years to demonstrate continuous compliance as specified below.
   (a) Each tune-up shall include: [40 CFR 63.7540(a)(10)]
      (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). If entry into a piece of process equipment or into a storage vessel is required to

complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject;

(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer;

(A) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Condition 12(a)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(B) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

13. The Permittee shall comply with requirement of NOx Budget Source in 25 Pa Code 145.

(i) The Permittee shall monitor and report NOx emissions in accordance with 40 CFR Part 96, Subpart HHHH (relating to monitoring and reporting), and establish a CAIR-authorized account representative and general account, in accordance with 40 CFR Part 96, Subparts BBBB and FFFF (relating to CAIR designated representative for CAIR NOx Ozone Season sources; and CAIR NOx Ozone Season Allowance Tracking System), incorporated into Subchapter D by reference, for the purposes of ensuring continued compliance with the non-EGU NOx Trading Program budget limitation 25 Pa Code 145.8(d)(1) and of retiring CAIR NOx Ozone Season allowances. [25 Pa Code 145.8(d)(2)]

(ii) A CAIR-authorized account representative and general account shall be established in accordance with 40 CFR Part 96, Subparts BB and FF (relating to CAIR designated representative for CAIR NOx sources; and CAIR NOx allowance tracking system), incorporated into 25 Pa Code 145 Subchapter D by reference, for the purpose of retiring CAIR NOx allowances. [25 Pa Code 145.8(d)(3)]

(iii) If the combined NOx emissions from all units subject to 25 Pa Code 145 (in the state of Pennsylvania) exceed 3,438 tons in an ozone season, then a unit whose actual emissions exceed the unit's allowable emissions for that ozone season, as determined under 25 Pa Code 145.8(d)(5), shall surrender to the Pa DEP by April 30 of the year following the ozone season one CAIR NOx Ozone Season allowance and one CAIR NOx allowance for each ton of excess emissions. A unit whose excess emissions are 0.5 ton or greater of the next excess ton shall surrender 1 full ton of CAIR NOx allowances (banked or current) for that excess emission. Units under common ownership may include the allowable and actual emissions from multiple units to determine whether a unit must surrender allowances. [25 Pa Code 145.8(d)(6)]

(iv) If a facility's allowable emissions exceed the facility's actual emissions for an ozone season, the owner or operator may deduct the difference or any portion of the difference from the actual emissions of units under the facility's common control that are subject to § § 129.201—129.203 (relating to boilers; stationary combustion turbines; and stationary internal combustion engines). [25 Pa Code 145.8(d)(11)]

14. The Permittee shall conduct stack tests to determine compliance as follows:
    (a) CO, VOC, PM/PM10/PM2.5, and Ammonia emission limit in Condition 2, 4, 6, & 8 within 180 days of start-up.
    (b) Compliance with CO, PM/PM10/PM2.5 and Ammonia emission shall be demonstrated every five years from the previous stack test.
    (c) The initial stack test shall establish the minimum voltage (6-minute average) required to assure compliance PM/PM10/PM2.5 emission limit
    (d) The initial stack test shall establish the maximum ammonia injection required to assure compliance with Ammonia slip and NOx emission limit.
    (e) The initial stack test shall determined minimum inlet temperature to the CO oxidation catalyst to assure compliance with CO emission limit.
    (f) The operating parameter (maximum voltage, maximum ammonia injection, and minimum inlet temperature) may be modified through subsequent AMS approved stack test.

15. The Permittee shall conduct annual checks of CO level in stack using handheld instrument to assure performance of CO oxidation catalyst.

16. The Permittee shall monitor and keep records the following: *[25 Pa Code §127.12b(c)]*
    (a) Combined No. 3 Boilerhouse emissions to assure compliance with Condition 3.
    (b) Combined heat input daily and rolling 365-day basis to determine compliance with Condition 8.
    (c) Emission calculations to demonstrate compliance with Condition 2, Table 1.
    (d) Date, time, and duration of starup, shut down, and maintenance to demonstrate compliance with conditions 2(a)-(c).
    (e) Daily fuel type and fuel usage.
    (f) Daily ammonia injection rate, voltage across the WESP, and inlet temperature of the oxidation catalyst.
    (g) Annual stack CO check using handheld instrument.
    (h) Tune-up in accordance with 40 CFR 63 Subpart DDDDD.

    All records shall be kept for a period of five years and produced upon request by AMS.

17. The Permittee shall, within two hours of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

cc: AMS Conformance file

PLID 01501

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Approval No: 15253
Plant ID: 01501

Date: September 22, 2016

Source: Philadelphia Energy Solutions (PES) Refining and Marketing LLC
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Owner: Philadelphia Energy Solutions (PES)
Mailing Address: 3144 Passyunk Ave
Philadelphia, PA 19145
Attention: Charles D. Barksdale Jr.
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **September 22, 2016** approved plans for the modification, installation, and operation of the air contamination source(s) described below for the Tier 3 Project.

The Tier 3 Projects will make several operational and process changes to comply with the U.S.E.P.A. Tier 3 gasoline standards. The changes will allow PES to meet the regulatory standards by performing additional sulfur-removal from finished gasoline, straight run naphtha, and other gasoline blending streams currently generated and processed at the refinery. The changes are not expected to provide for increased net production of gasoline, but rather will provide more intensive processing of existing refinery streams.

Plan Approval No. 15253:

1. The modifications to the Unit 864 Naphtha Hydrotreating Unit will include the following:
    - Re-piping and piping sweet naphtha to tankage.
    - Replacement-in-kind of approximately the top half of tower OPV-38.
    - Replacing the existing burners with Low NOx Burners (LNB) and adding firing rate limits to Unit 864 PH-1 (613,200 MMBTU/year), Unit 864 PH-7 (332,880 MMBTU/year), Unit 864 PH-11 (508,080 MMBTU/year), and Unit 864 PH-12 (551,880 MMBTU/year).
2. The modifications to the Unit 870 Low Sulfur Gasoline (LSG) Unit will include the following:

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• Install a new splitter tower between the reactors where splitter tower light ends will go to gasoline blending while the splitter tower bottoms will be further desulfurized within the unit. • Adding pumps and rerouting pipes. • Installing new heat exchangers.
3. The modifications to the Unit 1332 hydrobon reactor system will include the following: • Rerouting the hydrobon stripper bottoms to the sweet naphtha storage tanks. • Rerouting the pre-fractionator overhead to the Unit 1232 FCCU Debutanizer feed for recovery in the existing unit recovery section. • Adding/replacing valves, pumps and rerouting pipes. • Installing new heat exchangers.
4. Install Unit 870 H-3 Heater (91.0 MMBTU/hr). The heater will burn refinery fuel gas or natural gas. The installation will include the following: • 870 H-3 Heater is an idle unit from the former Sunoco Inc. (R&M) Eagle Point Refinery in New Jersey and is equipped with ultra-low NOx burners (ULNB). • Install a new H_2S CEMs to demonstrate compliance with the 40 CFR 60.104(a)(1) emission limit to be used for all three 870 Unit Heaters. • Install fugitive equipment components such as valves, pressure relief devices, and flanges/connections associated with the project modifications

This Plan Approval expires on **March 22, 2018.** If modification has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating permit.

The sources covered by this plan approval are subject to the conditions prescribed in the attachment. Wherever a conflict occurs between this Plan Approval and operating permit, construction permit, or any local, state, and federal regulations, the Permittee, shall in all cases, meet the more stringent requirement.

9/22/16

Edward Wiener
Chief, Source Registration

1. Each combustion device, piping, pumps, valves, or control device shall be installed, maintained, and operated in accordance with the manufacturer's specifications and the specifications in the application (as approved herein).

2. The Permittee shall comply with the following requirements of 25 PaCode 127.206:
   (a) PES shall secure the appropriate ERC which are suitable for use at the specific facility. The ERC shall be properly generated, certified by the PADEP and processed through the registry no later than the date approved for commencement of operation of the proposed new or modified facility. [25 Pa Code §127.206(d)]
   (b) PES may not commence operation of the new equipment or increase emissions until 45.1 tons of NOx offsets (34.7 tons of NOx emissions at 1.3:1 ratio and 38.1 tons of VOC or equivalent pollutant offsets (29.3 tons of VOC emissions at 1.3:1 ratio) are certified and registered by the Pennsylvania Department of Environmental Protection (PADEP). [25 Pa Code §127.206(d)(2)]

Emission and Operation Limits

3. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b) Equal to or greater than 60% at any time.

4. Carbon Monoxide (CO) emissions for fuel combustion unit may not exceed 1% by volume of exhaust gases. [AMR VIII, Section II]

5. Emissions from the 864 PH-7 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-7	NOx Emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu higher heating value basis determined by the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 9.99 tons per rolling 12 month period.	Application. Compliance determination shall be an AMS approved stack test.
	CO emissions	(c) CO emissions shall not exceed 13.59 tons per rolling 12 month period.	Application. Initial compliance demonstration shall be demonstrated by an AMS approved stack test.

	Operation al Limits	(d) Firing duty shall not exceed 45.5 MMBTU/hr on a daily basis. (e) Firing duty shall not exceed 332,880 MMBtu per rolling 365-day period.	Application.

6. Emissions from the 864 PH-1 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-1	NOx emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed than 18.40 tons per rolling 12 month period.	Application
	CO emissions	(c) CO emissions shall not exceed 25.04 tons per rolling 12 month period.	Application. Initial compliance demonstration shall be demonstrated by an AMS approved stack test.
	Operation al Limits	(d) Firing duty shall not exceed 80.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 613,200 MMBtu per rolling 365-day period.	Application

7. The 864 PH-11 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-11	NOx emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.

		(b) NOx emissions shall not exceed 15.24 tons per rolling 12 month period.	Application
	CO emissions	(c) CO emission shall not exceed 20.75 tons per rolling 12 month period.	Application. Initial compliance demonstration shall be demonstrated by an AMS approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 74.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 508,080 MMBtu per rolling 365-day period.	Application

8. The 864 PH-12 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-12	NOx emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 16.56 tons per rolling 12 month period.	Application.
	CO emissions	(c) CO emissions shall not exceed 22.54 tons per rolling 12 month period.	Application. Initial compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall be less than 85.1 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 551,880 MMBtu per rolling 365-day period.	Application

9. The 870 H-1 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 870 LSG Unit listed above including the installation of the new splitter tower is complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
870 H-1	NOx emissions	(a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs.	Plan Approval No. 02184. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 12.32 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 0.17 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 97.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 849,720 MMBtu on a rolling 365-day basis.	Application

10. The 870 H-2 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 870 LSG Unit listed above including the installation of the new splitter tower is complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
870 H-2	NOx emissions	(a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs.	Plan Approval No. 02184. Compliance shall be demonstrated by an AMS-approved stack test.

		(b) NOx emissions shall not exceed 6.50 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 0.21 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 53.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94
		(e) Firing duty shall not exceed 464,280 MMBtu per rolling 365-day period.	Application.

11. The 870 H-3 heater shall not exceed the following limits:

Source	Parameter	Limit	Notes
870 H-3	NOx emissions	(a) NOx emissions shall not exceed 0.03 lb/MMBtu based on the average of three stack test runs.	Best Available Technology (BAT), assures compliance with 40 CFR 60.102a(g)(2)(i)(B). Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 11.96 tons per rolling 12 month period.	Application. Initial compliance determination shall be demonstrated by an AMS-approved stack test.
	CO emissions	(c) CO emissions not exceed 11.96 tons per rolling 12 month period.	Application. Initial compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 91.0 MMBtu/hr on a daily average basis.	Application.

		(e) Firing duty shall not exceed 797,160 MMBtu per rolling 365-day period.	

12. The 1332 H-2 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 1332 hydrobon reactor system listed above are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
1332 H-2	NOx emissions	(a) NOx emissions shall not exceed 0.04 lb/MMBtu based on the average of three stack test runs. (b) NOx emissions shall not exceed 10.51 tons per rolling 12-month period.	Plan Approval No. 05124. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 1.36 tons per rolling 12-month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 60.0 MMBtu per rolling 365-day period.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94
		(e) Firing duty shall not exceed 525,600 MMBtu per rolling 365-day period.	Application.

13. The 1332 H-3 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 1332 hydrobon reactor system listed above are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
1332 H-3	NOx emissions	(a) NOx emissions shall not exceed 17.67 tons per rolling 12-month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(b) VOC emissions shall not exceed 0.97 tons per rolling 12-month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.

	Operational Limits	(c) Firing duty shall not exceed 43.0 MMBtu/hr on a daily average basis	Application.
		(d) Firing duty shall not exceed 376,680 MMBtu per rolling 365-day period.	Application.

14. PES shall not permit at any time the emission into the outdoor atmosphere of any malodorous air contaminants, in such a manner that malodors are detectable outside its boundary. [25 Pa Code §123.31(b)]

Work standard practices

15. The Permitee shall operate the facility consistent and within the projected future actual emission basis contained in the Plan Approval Application.

16. Each process heater or combustion unit shall only burn natural or refinery gas.
    (a) Each heater shall not burn any fuel has that contains H_2S in excess of 230 milligrams per dry standard cubic meter (mg/dscm) or 0.10 grains per dry standard cubic feet (gr/dscf). [40 CFR 60.104(a)(1), Consent Decree Order 05-CV-02866]
    (b) The span value for this instrument is 425 mg/dscm H_2S.

17. The 870 H-3 Heater shall be installed with ULNB meeting the NOx emission limit in Condition 11(a). [Best Available Technology (BAT), 25 Pa. Code §127.1]

18. Heaters 864 PH-1, 864 PH-7, 864 PH-11, and 864 PH-12 shall be each be installed with low NOx burners (LNB) meeting the NOx emission limits of Conditions 5(a), 6(a), 7(a), and 8(a). [Application] .

19. Pumps handling volatile organic compounds with a vapor pressure of greater than 1.5 psi (10.3) at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100 Fahrenheit shall be used. [25 Pa Code §129.55(b)]

20. Purging of volatile organic compounds during depressurization of reactors, fractionating columns, pipes or vessels during shutdown, repair, inspection or startup shall be performed in a manner as to direct the volatile vapors to a fuel gas system, flare, or recovery system until the internal pressure in such equipment reaches 19.7 psia (136 kilopascals) [25 Pa Code §129.55(d)]

21. The Permittee shall conduct a tune-up on each process heater annually as specified in 40 CFR 63.7540. For new heaters, this requirement begins within 180 days of start-up.
    (a) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). If entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment.

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject.

(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

(A) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Condition 19(a)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(B) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

22. PES shall comply with the following for fugitive sources:

(a) No person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V, XIII]

(i) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the Department; or

(ii) The VOC emission is in a liquid state at the point(s)of discharge into the atmosphere.

(b) PES shall comply with the requirements of 25 PA Code §129.58.

Testing Requirements

23. For each of the Unit 864 heaters (PH-1, PH-7, PH-11, and PH-12), within 60 days of achieving maximum capacity, but no longer after 180 days of installing the low NOx burners, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emission limits in Conditions 5(a), 5(c), 6(a), 6(c), 7(a), 7(c), 8(a), and 8(c). NOx and CO tests must be conducted simultaneously.

24. For Unit 870 H-1 and H-2 Heaters, within 60 days of completion of the Tier 3 project, the Permittee shall conduct NOx and VOC tests to verify that emissions do not exceed the emission factors in Conditions 9 and 10.

25. For Unit 870 H-3 Heater, within 60 days of achieving maximum capacity, but no longer than 180 days after start-up, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emissions limits in Conditions 11(a), 11(b), and 11(c). The NOx and CO tests must be conducted simultaneously.

26. For the Unit 1332 H-2 and H-3 Heaters, within 60 days of completion of the Tier 3 project, the Permittee shall conduct NOx and VOC tests to verify that emissions do not exceed the emission factors in Conditions 12 and 13.

27. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 PA Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test. The following performance tests methods shall be used to demonstrate compliance with the emission limitations:
    (a) U.S.E.P.A. Reference Method 7E shall be used for nitrogen oxides.
    (b) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.
    (c) U.S.E.P.A. Reference Method 25A shall be used for volatile organic compounds.

28. If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in the Plan Approval may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

Monitoring and Recordkeeping Requirements

29. The Permittee shall operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.106(e)(1) and 25 PA Code Chapter 139.
    (a) The Permittee shall install a new continuous H_2S monitor and recorder for the fuel gases burned in the 870 Heaters H-1, H-2, and H-3. A Phase I application will be submitted to and approved by AMS prior to installation in accordance with 25 PA Code Chapter 139 and the PA Continuous Monitoring Manual, Revision 7.
    (b) Fuel gas combustion devices having a common source of fuel gas may be

monitored at one location if monitoring at this location accurately represents the concentration of H_2S in the fuel gas burned.

(c) The performance evaluation of the H_2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.

30. The Permitee shall monitor and keep record the following:

(a) For the 864 Heaters PH-1, PH-7, PH-11, and PH-12, rolling 12-month NOx and CO emissions calculated monthly to demonstrate compliance with the 12 month rolling period emission limits for NOx and CO. Compliance determination shall be based on AMS-approved stack tests.

(b) For the 870 H-1 and H-2 Heaters, monthly records to demonstrate compliance with Conditions 9 and 10. Compliance determination shall be based on AMS-approved stack tests.

(c) For the 870 H-3 Heater, rolling 12-month NOx and CO emissions to demonstrate compliance with Conditions 11(b) and 11(c). Compliance determination shall be based on AMS-approved stack tests.

(d) For the 1332 H-2 and H-3 Heaters, monthly records to demonstrate compliance with Conditions 12 and 13. Compliance determination for the NOx and VOC emission limits shall be based on AMS-approved stack tests.

(e) The performance evaluation of the H_2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.

(f) The Permittee shall monitor the refinery fuel gas heating value and consumption daily, when each heater is in operation.

(g) The Permitee shall keep records to demonstrate compliance with Condition 15 on a monthly basis in an AMS-approved format. Records shall include the projected future actual emissions listed in the Plan Approval Application, monthly emissions, rolling 12-month emissions, and the calculation method.

(i) For units where potential emissions were used as projected actual emissions in the application, monthly and rolling 12-month emissions are only needed if there was a malfunction or other incident during the period where actual emissions were higher than the emission factor in the application. Otherwise, potential emission calculations are sufficient.

(h) For tune-ups conducted on the heaters as per Condition 19: [40 CFR 63.7540(a)(10)(vi)]

(i) Maintain on-site and submit, if requested by EPA or AMS, a report containing the following information:

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

All records shall be kept for a period of five years.

Reporting Requirements

31. PES shall submit CEM and production reports to Air Management Services on a quarterly basis in accordance with 25 PA Code Chapter 139 and the PA Continuous Source Monitoring Manual.

32. Notifications required under 40 CFR 63 Subpart DDDDD, 40 CFR 60 Subpart J, and 40 CFR 60 Subpart Ja.

33. Any notifications required, as a result of any condition herein should be directed to Chief of Source Registration, Air Management Services, 321 University Avenue, Philadelphia, PA 19104.

PLID 01501

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Approval No: IP16000142

Plant ID: 01501

Owner: Philadelphia Energy Solutions Refining and Marketing LLC
Address: 3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Attention: Charles Barksdale, Jr.
Site Environmental Director

Source: Philadelphia Energy Solutions Refining and Marketing LLC (PES)

Location: 3144 Passyunk Avenue
Philadelphia, PA 19145-5299

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health, Air Management Services (AMS) on October 17, 2016 approved plans for the installation of the air contamination source(s) described below:

> Replace six (6) Zeeco Ultra-Low NOx Burners (ULNB) 1332 CRU on the H-2 Hydrocarbon Heater. The heater will continue to burn refinery fuel gas and have a capacity of 60 MMBTU/hr.

This installation permit expires on October 17, 2017. If construction has not been completed by this date, an application for either an extension or a new installation permit must be made. The conditions in this installation permit will remain in effect until they are incorporated in an operating permit.

The sources covered by this plan approval are subject to the conditions prescribed in the attachment.

10/17/16

Edward Wiener
Chief, Source Registration

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INSTALLATION PERMIT CONDITIONS
INSTALLATION PEMRIT NO. IP16000142
PES

1. The above source shall be installed in accordance with the specifications in the application (as approved herein).

2. The heater shall fire only refinery fuel gas. The firing rate shall not exceed 60 MMBTU/hr on a daily average basis.

3. The heater shall be equipped with Ultra Low NOx burners and shall achieve a NOx emission rate of 0.04 lbs/MMBTU at 3% oxygen at full design load, 3-run average. [Plan Approval No. 05124 dated 10/4/05]

4. Carbon Monoxide (CO) emissions from the heater shall not exceed 400 ppmdv at 3% oxygen, 3-run average. [Plan Approval No. 05124 dated 10/4/05]

5. Particulate matter emissions from the heater shall not exceed 0.10 lbs/MMBTU gross heat input. [AMR II. Section V.2]

6. Sulfur Dioxide (SO2) emissions from the heater shall not exceed 0.53 lbs/MMBTU at any time or 0.33 lbs/MMBTU on a rolling 365-day average. [SO2 Operating Permit No. SO2-95-039]

7. The Hydrogen Sulfide content of refinery fuel gas burned in the heater shall not exceed 0.10 grains per dry standard cubic foot. [40 CFR 60.104(a)(1) – assures compliance with Condition 6]

8. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.

   (b) Equal to or greater than 60% at any time.

9. The heater shall be installed, maintained, and operated in accordance with manufacturer's specifications.

10. PES shall conduct annual tune-ups on the heater meeting the requirements of 40 CFR 63.7549(a)(10).

11. Within 60 days of achieving maximum production rate but no later than 180 days after re-starting the heater, PES shall conduct performance tests to demonstrate compliance with the Nitrogen Oxide emission limit specified in Condition 3 and the Carbon Monoxide emission limit specified in Condition 4. The NOx and CO stack tests must be conducted simultaneously. The stack test protocol shall be submitted to AMS for approval at least 30 days before the test date and the test results shall be submitted within 60 days after the test.

12. PES shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 40 CFR 60.105(a)(4) and 25 PA Code Chapter 139.

13. PES shall install and operate a fuel flow monitor on the heater.

14. PES shall analyze fuel gas samples for heating value daily.

15. PES shall keep the following records for the heater:

    (a) Continuous Hydrogen Sulfide monitoring system records.

    (b) Records of daily refinery fuel gas consumption, heating value, and sulfur content.

    (c) Stack test results.

    These records shall be kept for a minimum of 5 years and produced upon request by AMS.

16. PES shall submit all notifications required by 40 CFR 63.7545.

17. PES shall submit excess emissions reports in accordance with 40 CFR 60.7(c), including all rolling 3-hour periods during which the average concentration of H2S in fuel gas burned in the heater exceeded 0.1 grains per dscf. [40 CFR 60.105(e)(3)]

18. PES shall submit annual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD.

19. PES shall within two hours of knowledge of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7580 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

PLID 01501

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Approval No: IP16-000264

Source: Philadelphia Energy Solutions Refining and Marketing LLC (PES)

Plant ID: 01501

Owner: Philadelphia Energy Solutions Refining and Marketing LLC
Address: 3144 Passyunk Avenue Philadelphia, PA 19145-5299

Location: 3144 Passyunk Avenue Philadelphia, PA 19145

Attention: Charles Barksdale, Jr.

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health, Air Management Services (AMS) on December 30, 2016 approved plans for the modification of the air contamination source(s) described below:

- #3 Boilerhouse Boiler #37 - Accept emission limits of 0.25 lbs/MMBTU Nitrogen Oxides (NOx) on a rolling 30 operating day average and 1 ton of Volatile Organic Compounds (VOCs) per rolling 12-month period.
- #3 Boilerhouse Boiler #39 - Accept emission limits of 0.25 lbs/MMBTU Nitrogen Oxides (NOx) on a rolling 30 operating day average and 1 ton of Volatile Organic Compounds (VOCs) per rolling 12-month period.
- #3 Boilerhouse Boiler #40 - Accept emission limits of 0.25 lbs/MMBTU Nitrogen Oxides (NOx) on a rolling 30 operating day average and 2.7 tons of Volatile Organic Compounds (VOCs) per rolling 12-month period.
- Unit 137 F-1 Heater – Modify a lbs/MMBTU NOx limit to a rolling 30 operating day average.
- Unit 137 F-2 Heater – Modify NOx emission limit to 0.25 lbs/MMBTU on a rolling 30 operating day average.
- Unit 210 H101 Heater – Reduce VOC emission limit to 1 ton per rolling 12-month period.
- Unit 210 H201 Heater – Accept NOx emission limit to 0.25 lbs/MMBTU on a rolling 30 operating day average and reduce VOC emission limit to 1 ton per rolling 12-month period.
- Unit 231 B101 Heater – Reduce VOC emission limit to 1 ton per rolling 12-month period.
- Unit 433 H-1 Heater – Accept NOx emission limit of 0.25 lbs/MMBTU on a rolling 30 operating day average.

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- Unit 860 2H2 Heater – Reduce NOx emission limit from 0 35 lbs/MMBTU to 0.25 lbs/MMBTU.
- Unit 860 2H4 Heater - Reduce NOx emission limit from 0.27 lbs/MMBTU to 0.25 lbs/MMBTU.
- Unit 865 1H1 Heater – Reduce VOC emission limit from 1.9 tons per rolling 12-month period to 1 ton per rolling 12-month period.
- Unit 865 11H2 Heater – Reduce VOC emission limit from 1.3 tons per rolling 12-month period to 1 ton per rolling 12-month period.
- Unit 866 12H1 Heater – Reduce VOC emission limit from 1.2 tons per rolling 12-month period to 1 ton per rolling 12-month period.
- Unit 868 8H101 Heater – Reduce VOC emission limit from 1.2 tons per rolling 12-month period to 1 ton per rolling 12-month period.
- Unit 1332 H-2 Heater – Reduce VOC emission limit from 1.36 Tons per rolling 12-month period to 1 ton per rolling 12-month period.
- Unit 1332 H-400 Heater – Accept NOx emission limit of 0.25 lbs/MMBTU on a rolling 30 operating day average.
- Unit 1332 H-401 Heater – Accept NOx emission limit of 0.25 lbs/MMBTU on a rolling 30 operating day average.

This installation permit expires on December 30, 2017. If construction has not been completed by this date, an application for either an extension or a new installation permit must be made. The conditions in this installation permit will remain in effect until they are incorporated in an operating permit.

The sources covered by this installation permit are subject to the conditions prescribed in the attachment.

12/30/16

Edward Wiener
Chief, Source Registration

INSTALLATION PERMIT CONDITIONS
INSTALLATION PEMRIT NO. IP16-000268
PES – Refinery

1. The above source shall be installed in accordance with the specifications in the application (as approved herein).

2. NOx emissions from each of the following units shall not exceed 0.25 lbs/MMBTU heat input on a rolling 30 operating day average: [Application]

   (a) #3 Boilerhouse Boiler #37
   (b) #3 Boilerhouse Boiler #39
   (c) #3 Boilerhouse Boiler #40
   (d) Unit 137 F-2 Heater
   (e) Unit 210 H201 Heater
   (f) Unit 433 H-1 Heater
   (g) Unit 1332 H-400 Heater
   (h) Unit 1332 H-401 Heater

3. NOx emissions from Unit 137 F-1 Heater shall not exceed 0.23 lbs/MMBTU heat input on a rolling 30 operating day average. [Application]

4. NOx emissions from each of the following units shall not exceed 0.25 lbs/MMBTU heat input: [Application]

   (a) Unit 860 2H2 Heater
   (b) Unit 860 2H4 Heater

5. VOC emissions from each of the following units in the table below shall be less than 1 ton per rolling 12-month period. [Application]

   (a) #3 Boilerhouse Boiler #37
   (b) #3 Boilerhouse Boiler #39
   (c) Unit 210 H101 Heater
   (d) Unit 210 H201 Heater
   (e) Unit 231 B101 Heater
   (f) Unit 865 11H1 Heater
   (g) Unit 865 11H2 Heater
   (h) Unit 866 12H1 Heater
   (i) Unit 868 8H101
   (j) Unit 1332 H-2 Heater

6. VOC emissions from #3 Boilerhouse Boiler #40 shall be less than 2.7 tons per rolling 12-month period. The VOC emissions from the #3 Boilerhouse Boiler #40 is based on PES emissions factors based on DATE stack testing results of 0.0004 lb VOC/MMBtu. This factor will be used for calculating monthly VOC emissions for this boiler. AMS may approve or require the use of different emission factors based AMS-approved stack test data if determined appropriate. [Application]

7. PES shall install, maintain and operate #3 Boilerhouse Boiler #40 in accordance with the manufacturer's specifications and with good operating practices. [25 Pa Code §129.97(c)(2)]

8. Compliance with Conditions #2 and #3 shall be determined for each unit using an AMS-approved Continuous Emissions Monitoring System (CEMS) that meets the requirements of 25 Pa Code Chapter 139, the Pennsylvania Continuous Source Monitoring Manual (Revision 7), and 25 Pa Code

§129.100(a)(1).

9. Compliance with Condition #4 shall be determined for each unit based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual.

10. Compliance with Condition #5 shall be monitored for each unit on a monthly basis based on heat input and emission factors based on AMS-approved stack tests meeting the requirements of 25 Pa Code Chapter 139 and the Pennsylvania Source Testing Manual.

11. PES shall keep records demonstrating compliance with the requirements of this installation permit as per 25 Pa Code §129.100(d).

12. PES shall within two hours of knowledge of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7580 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

PLID 01501

City of Philadelphia
Department of Public Health
Air Management Services.

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) Nos. IP17000004

Philadelphia Energy Solution Refining & Marketing LLC (PES)
3144 Passyunk Ave
Philadelphia, PA 19145

Issuance Date: January 20, 2017
Expiration Date: July 20, 2018

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City of Philadelphia
Department of Public Health
Air Management Services.

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **January 20, 2017,** approved plans to **reactivate Tank GP R 1208 (P-026) and GP R 1209 (P-163) both with internal floating roof tank to store benzene.**

Facility:	Philadelphia Energy Solution Refining & Marketing LLC 3144 Passyunk Ave Philadelphia, PA 19145
Owner:	Philadelphia Energy Solution Refining & Marketing LLC 3144 Passyunk Ave Philadelphia, PA 19145
Plant ID:	01501
Facility Contact:	Charles D. Barksdale (215) 339-2074
Permit Contact:	Charles D. Barksdale (215) 339-2074

Rahel Gebrekidan 

Issue Date 1/20/17

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **July 20, 2018.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

Plan Approval

Approval No: 15271 Amendment Date: April 25, 2017
Plant ID: 01501 Original Issue Date: December 29, 2003

Owner: Philadelphia Energy Solutions Refining and Marketing, LLC (PES)

Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: PES
Address: 3144 Passyunk Ave
Philadelphia, PA 19145
Email: Charles.Barksdale@pes-companies.com

Attention: Mr. Chuck Barksdale
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of the Plan Approval application and its associated SO_2 modeling results received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health Air Management Services (AMS) on XXXX, approved plans for the installation of the air contamination device(s) described below:

A Tier II low sulfur gasoline Hydrodesulfurization Plant including:

- Process Heater H1- 97 Million British Thermal Unit per hour (MMBTU/hr)
- Process Heater H2 - 53 MMBTU/hr
- One 136,000 barrels (bbl) Refurbished Gasoline Tank

April 25, 2017 – This amends and replaces the original Plan Approval No. 02184 issued December 29, 2003 and amended May 12, 2004. The following are changes or revisions from the original Plan Approval No. 02184.

- **Include work standards practices standards of 40 CFR 63 Subpart DDDDD, Table 3 for the H1 and H2 Heaters.**
- **Update the Plan Approval with the Tier 3 emissions (AMS Plan Approval No. 15253 dated 9/22/2016) for the 870 H1 and H2 Heaters .**
- **Modify Condition 23 to allow subsequent CO performance tests to be repeated every five years instead of every year. The protocol shall be submitted at least 30 days prior to testing.**
- **Incorporate the permit requirements for South Flare. The South Flare was reactivated and is covered under Plan Approval 13260 dated July 18, 2014.**

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 15271
COMPANY: PES

This plan approval expires on October 25, 2018. If modification has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating permit.

Edward Wiener

Chief, Source Registration

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 15271
COMPANY: PES

1. The sources covered by this plan approval shall be installed in accordance with the specifications in the application (as approved herein).

2. PES shall operate the Hydrodesulfurization Plant and associated equipment in accordance with 40 CFR 60.18, 40 CFR 60 Subparts J, GGG, and QQQ, 40 CFR 61 Subpart FF, 40 CFR 63.11, 40 CFR 63 Subpart CC, 40 CFR 63 Subpart DDDDD, PA DEP Title 25 Sections, 127.12.a.5, 123.41, 129.55, 129.56, 129,58, and Air Management Regulation (AMR) II and III, whichever is more restrictive.

3. This plan approval may be terminated, suspended or revoked and reissued in accordance with 25 PA Code § 127.13a. If AMS or EPA determines that the owner or operator of PES is liable for violations of the New Source Review (NSR) or Prevention of Significant Deterioration (PSD) Requirements, PES shall submit an application to amend this plan approval and or any subsequently amended operating permit.

4. Upon notification, PES shall remodel for Sulfur Dioxide (SO_2) to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) when AMS has cause to believe that the attainment or maintenance of the NAAQS is in jeopardy.

5. The Permittee shall comply with the following:
   (a) Emissions from the Tier 2 Project shall not exceed those listed in the Table 1a:

Table 1a: Emission Limits and Increases for Tier 2 - Project [AMS Plan Approval No. 02184]

Source	NOx		CO		VOC		SO2		PM/PM10	
	Lb/hr	tpy*	Lb/hr	tpy*	Lb/hr	tpy*	Lb/hr	tpy*	Lb/hr	tpy*
Heater H1	3.40	14.87	14.04	61.50	0.52	2.29	3.88	16.99	0.18	0.79
Heater H2	1.86	8.12	4.37	19.13	0.29	1.25	2.12	9.29	0.1	0.43
Tank TK178	na	na	na	na	2.12	9.28	na	na	na	na
Flare (PB So.)	0.12	0.53	0.66	2.88	0.25	1.09	8.53	37.36	na	na
Fugitives	na	na	na	na	0.31	1.38	na	na	na	na
Ancilliary										
No. 3 BH	3.45	15.11	1.90	8.30	0.12	0.54	0.92	4.03	0.04	0.19
Cooling Tower	na	na	na	na	0.39	1.71	na	na	0.22	0.98
SRU	0.02	0.10	0.02	0.09	<0.01	0.01	0.21	0.92	<0.01	<0.01
Total		38.73		91.90		17.55		68.59		2.39

* All annual limits are 12 month rolling averages

(b) Emissions from the 870 H-1 heater shall not exceed the following limits in Table 1(b). These limits will not go into effect until the modifications to the Unit 870 LSG Unit listed above including the installation of the new splitter tower is complete and the unit has commenced operation in the Tier 3 configuration. [AMS Plan Approval No. 15253 dated September 22, 2016]

Table 1(b): 870 H-1: Tier 3 Emission Limits

Source	Parameter	Limit	Notes
870 H-1	NOx emissions	(a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs.	Plan Approval No. 02184. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 12.32 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 0.17 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 97.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 849,720 MMBtu on a rolling 365-day basis.	Application

(c) The 870 H-2 heater shall not exceed the following limits in Table 1(c). These limits will not go into effect until the modifications to the Unit 870 LSG Unit listed under Plan Approval No. 15253 including the installation of the new splitter tower is complete and the unit has commenced operation in the Tier 3 configuration.

Table 1(c): 870 H-2 Tier 3 Emission Limits

Source	Parameter	Limit	Notes
870 H-2	NOx emissions	(a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs.	Plan Approval No. 02184. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 6.50 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 0.21 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 53.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94
		(e) Firing duty shall not exceed 464,280 MMBtu per rolling 365-day period.	Application.

Table 2: Tier 2, Contemporaneous emission changes for NSR

Year	Project	NOx tpy	VOC tpy
2000	Benzene RR car unloading	0	0.01
2002	Unit 868 Modification	0	3.60
2003	Unit 1232 Maintenance work	0	0.38
2004	Tier II (current application)	38.73	17.55
	Netting Total	38.73	21.54
2004	Internal offset (1.3 X 38.73) from operating restrictions at No.3 Boilerhouse**	-50.35	0
	Net change	-11.62	21.54

** From operating restrictions for emission limit specified in Condition 6.

Table 3: Tier 2, Emission change for PSD

Project	NO2 tpy	SO2 tpy	CO tpy	PM/PM10 tpy
Tier II Project	38.73	68.59	91.90	2.39/2,39
Heater 13H1 Fuel Switch		-29.70***		
Net change	38.73	38.89	91.90	2.39/2.39

*** From operating restrictions specified in Condition 7.

6. Nitrogen Oxides (NOx) emissions from No.3 Boilerhouse shall not exceed 970.5 tons in any rolling 12-month period.

7. PES shall burn only refinery fuel gas and/ or natural gas in the 210 Unit 13H1 Heater from the date of issuance of this plan approval. The SO_2 emissions from this heater shall not exceed 11.01 tons in any rolling 12-month period.

8. The NOx emissions from heaters H1 and H2 shall not exceed 0.035 lb/MMBTU.

9. The opacity of visible emissions from the heaters and the flare shall not be:
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour
   (b) Equal to or greater than 60% at any time [25 PA Code § 123.41]
   (c) For the South Flare, The flare shall be designed for and operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)] [AMS Plan Approval No. 13260 dated July 18, 2014]

10. Carbon Monoxide emissions from heaters H1 and H2 shall not exceed 400 ppmdv at 3% oxygen. [25 PA Code 127.1 (BAT)]

Work Practice Standards

11. PES shall operate and maintain the sources in accordance with the manufacturer's specifications and good engineering and air pollution control practices.

12. Heaters H1 and H2 shall be equipped with ultra low NOx burners with internal flue gas recirculation and combust refinery fuel gas and/or natural gas only. The heat input shall not exceed 97 MMBTU/hr to H1 and 53 MMTU/hr to H2. [25 PA Code § 127.12(a)(5)]

13. The Permittee shall not burn any fuel gas containing H2S in excess of 162 ppmv in the flare. The H2S content in the fuel gas shall be determined hourly on a 3-hour rolling average basis. The combustion in the flare of process upset gases or fuel gas that is released to the flare as the result of relief valve leakage or other emergency malfunctions is exempt from the above limit .[40 CFR 60.103a(h) and 40 CFR 60.103a(f)]

14. Hydrogen Sulfide content of the fuel gas burned in the heaters shall not exceed 0.1 grains per dry standard cubic foot or the concentration of SO_2 emissions in the stack gases shall not exceed 20 ppmv (dry basis, zero percent excess air) [40 CFR 60.104(a)(1)]

15. The South Yard Flare shall comply with the following work standard requirements: [AMS Plan Approval No. 13260 dated July 18, 2014]

    (a) The South Yard South Flare shall be operated in accordance with the manufacturer's specifications and specifications in the Plan Approval Application.
    (b) The South Yard South Flare shall comply will all applicable requirements set-forth in 40 CFR 60 Subpart A and Ja, 40 Subpart 63 Subpart A, and the Consent Decree.
    (c) The flare shall be operated at all times when gases may be vented to them. The flare shall be operated with a minimum of a 98% Combustion Efficiency at all times when waste gases are vented to it. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]
    (d) The flares shall be operated with a pilot flame present at all times. [40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]
    (e) The Permittee shall operate and maintain a flare gas recovery system to prevent continuous or routine combustion in the flare. [Consent Decree, Use of the flare gas recovery system obviates the need to continuously monitor emissions as otherwise required by 40 CFR 60.105(a)(4)]
        (i) Periodic maintenance shall be conducted for flare gas recovery systems.
        (ii) All reasonable measures shall be taken to minimize emissions during the periodic maintenance on a flare gas recovery system is being performed.
        (iii) The flare gas recovery system may be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes.
    (f) The flare (steam-assisted flare) shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]
    (g) The flare (steam-assisted flare) may be designed and operated with an actual exit velocity less than Vmax and less than 122m/sec (400 ft/sec) [40 CFR 60.18(c)(4)(iii)]
        (i) Actual exit velocity shall be determined in accordance with 40 CFR 60.18(f)(4)
        (ii) Vmax shall be determined in accordance with 40 CFR 60.18(f)(5)
    (h) The Permittee shall implement good air pollution control practices to minimize Hydrocarbon Flaring Incidents in accordance with the procedures in the Consent Decree.
    (i) The Permittee shall develop and implement a written flare management plan no later than the November 11, 2015 in accordance with 40 CFR 60.103a .
        (i) The Permittee shall conduct a root cause analysis and a corrective action analysis for each of the following [Consent Decree and 40 CFR 103a(c)]
        (ii) Any time the SO2 emission exceeds 227 kilograms (kg) (500 lbs) in any 24-hour period
        (iii) Any discharge to the flare in excess of 14,160 standard cubic meter (m3) (500,000 standard cubic feet (scf)) above the baseline, determined in 40 CFR 60.103a(a)(4)
    (j) The Permittee shall complete a root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified Condition (j) above . Special circumstances affecting the number of root cause analyses and/or corrective action analyses are as follows: [40 CFR 60.103a(d)]

(i) If a single continuous discharge meets any of the conditions specified in Condition 23(i)(i)-(iii) for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.

(ii) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions in Condition (i)(i) - (iii), a single root cause analysis and corrective action analysis may be conducted.

(iii) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in 40 CFR 60.103a(a)(5) were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in §60.108a(c)(6) and reported as described in §60.108a(d)(5).

(iv) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in 40 CFR 60.103a(c)(1)(i)-(iii) in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted.

(v) Except as provided above in Condition (j) above, if discharges occur that meet any of the conditions specified in Condition (i above for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(k) The Permittee shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to Condition (j) above in accordance with the following applicable requirements: [40 CFR 60.103a(e)]

(i) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the Permittee concludes that corrective action should not be conducted, the Permittee shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 CFR §60.108a(c)(6)(ix).

(ii) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(iii) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the Permittee shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 CFR§60.108a(c)(6)(x).

17. The storage tank shall be external floating roof construction meeting specifications in 40 CFR § 60.112b(a)(2)(i) through (iii). The tank shall be in conformance with 40 CFR § 63.646.

18. PES shall not store VOC liquids that have a reid vapor pressure greater than 10 psia in the storage tank.

19. PES shall comply with fugitive emission requirements specified in 25 PA Code § 129.58, 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC.

20. PES shall identify and list components of the Hydrodesulfurization Plant that are in Hydrogen service, prior to issuance of an operating permit.

21. All new and existing wastewater drain systems utilized for this project shall comply with 40 CFR 60 Subpart QQQ, 40 CFR 61 Subpart FF and 40 CFR 63 Subpart CC.

22. For H1 and H2 Heaters, the Permittee shall comply with the following work standard practices of 40 CFR 63, Subpart DDDDD, Table 3.
    (a) Conduct a tune-up of the boiler or process heater annually as specified in §63.7540. Each annual tune-up specified in §63.7540(a)(10) must be conducted no more than 13 months after the previous tune-up.
    (b) Each boiler must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table, satisfies the energy assessment requirement. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items a. to e. appropriate for the on-site technical hours listed in §63.7575:

a. A visual inspection of the boiler or process heater system.
b. An evaluation of operating characteristics of the boiler or process heater systems, specifications of energy using systems, operating and maintenance procedures, and unusual operating constraints.
c. An inventory of major energy use systems consuming energy from affected boilers and process heaters and which are under the control of the boiler/process heater owner/operator.
d. A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage.
e. A review of the facility's energy management practices and provide recommendations for improvements consistent with the definition of energy management practices, if identified.
f. A list of cost-effective energy conservation measures that are within the facility's control.
g. A list of the energy savings potential of the energy conservation measures identified.
h. A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

Testing

23. The Permittee shall comply with the following testing requirements:
    (a) Tier 2 - Testing Requirements
        (i) Within sixty (60) days after achieving maximum production rate but not later than one hundred and eighty (180) after the initial startup of the 870 Unit Hydrodesulfurization plant PES shall conduct performance test(s) as per Sections 40 CFR 60.8, 40 CFR Part 60, Subpart J and 25 PA Code Chapter139 on each to demonstrate compliance with emission increases specified in Conditions 8 and 10 and to establish emission factors to demonstrate compliance with emissions limits specified in Tables 1a. [AMS Plan Approval No.02184 dated December 29, 2003 and amended May 12, 2004;
        (ii) The stack test for CO shall be repeated every five years or upon request from AMS.[Plan Approval Application No. 15271 to modify CO testing frequency from annually to every five year.]
    (b) Tier 3 Testing Requirements.

(i) For Unit 870 H-1 and H-2 Heaters, within 60 days of completion of the Tier 3 project, the Permittee shall conduct NOx and VOC tests to verify that emissions do not exceed the emission factors in Conditions 5(b) and 5(c). [AMS Plan Approval No. 15253 dated September 9, 2016]

(c) Prior to any testing, a stack test protocol shall be submitted to AMS at least 30 days before the test. Stack test results shall be submitted within 60 days after the test.

24. For the storage tank, PES shall follow testing procedures specified in 40 CFR 60.113b. If a failure is detected, PES shall repair the items or empty and remove the storage vessel from service within 45 days. If this cannot be done in 45 days, AMS shall be notified and a 30-day extension may be requested from AMS. PES shall assure that either the equipment is repaired or the tank is emptied within the 30 additional days.

25. For the South Flare, PES shall comply with the following: [AMS Plan Approval No. 13270 dated July 18, 2014]

(a) Within 60 days of start-up of the flare, the Permittee shall conduct performance test as follows:

(i) Test Method 22 in Appendix A of 40 CFR 60 shall be used to determine the compliance of flares with the visible emission limitations. The observation period is 2 hours and shall be used according to Method 22. [40 CFR 63.11(b)(4), 40 CFR 60.18(f)(1)]

(ii) The net heating value of the gas being combusted in a flare shall be calculated using the following equation [40 CFR 60.18(f)(3)]:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i=Concentration of sample component "i" in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

(iii) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

(i) In lieu of conducting the velocity test , the Permittee may submit velocity calculations which demonstrate that the Flare meets the performance specification required by 40 CFR 60.18

(iv) The maximum permitted velocity, V_{max}, for flares complying with 40 CFR 60.18(c)(4)(iii)) shall be determined by the following equation: [40 CFR 60.18(f)(5)]

$$\text{Log10}\ (V_{max}) = (HT + 28.8)/31.7$$

where:

V_{max}=Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T=The net heating value as determined in 40 CFR 60.18 (f)(3).

Monitoring

26. PES shall on a daily basis monitor and record the quantity and heating value of the refinery fuel gas that is combusted in heaters 210 Unit 13 H1, 870 Unit H1, 870 Unit H2, and the flare. Fuel consumption in Boilerhouse No.3 shall be monitored daily.

27. NOx emissions from Boilerhouse No.3 shall be monitored using a continuous emission monitoring system.

28. PES shall monitor and record the concentration (dry basis) of Hydrogen Sulfide in fuel gases burned in Heaters H1, H2, and the flare using a continuous monitoring system to ensure compliance with Condition 14. As an alternative PES may monitor and record the concentration by volume (dry basis, zero percent excess air) of SO_2 emissions in the stacks using a continuous emission monitoring and recording system. The system shall include an oxygen monitor for correcting the data for excess air. [40 CFR § 60.105(A)(4)]

29. For the South Flare, the Permittee shall monitor the following:
    (a) The Permittee shall continuously monitor and record the H2S concentration for fuel gases being burned in the flare in accordance with 40 CFR 60.107a(a)(2).
    (b) The Permittee shall continuously monitor and record the flow rate of gas discharged to the flare. [40 CFR 60.107a(f)]
    (c) The total reduced sulfur concentration for each gas line directed to the flare shall be monitored in accordance with either paragraph 40 CFR 60.107a(e)(1), (e)(2) or (e)(3). [40 CFR 60.107a(e)]

30. The Permittee shall submit the flare management plan to AMS and EPA in accordance with 40 CFR 60.103a(b) no later than November 11, 2015.

31. PES shall monitor all equipment associated with this plan approval for leaks in accordance with 25 PA 129.58 and 40 CFR subpart GGG.

32. For the South Flare, PES shall monitor the following [AMS Plan Approval No. 13260 dated July 14, 2014]:
    (a) Fuel type and fuels usage of the fuel burned for each flare pilot on a daily basis.
    (b) H2S in the refinery fuel gas fired at the pilot shall be monitored using a continuous monitor and recorder at the Point Breeze Fuel Gas Mix Drum.
    (c) The feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO2 emissions using the same analysis and calculations used in the modeling demonstration. [SO2 Operating Permit]
    (d) The presence of a flare pilot flame shall be continuously monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]
    (e) The flare flame shall be monitored using an IR camera.

Recordkeeping

33. PES shall on a monthly basis keep records of the emissions from all new or reactivated sources covered by this plan approval to demonstrate compliance with the emission limits listed in Table 1a.

34. PES shall maintain records to demonstrate compliance with the NOx emission limits for Boilerhouse No. 3, specified in Condition 6, on a monthly basis. NOx emissions shall be calculated based on CEM data. When CEM data is not available, the highest hourly value out of the most recent 365-day period of available NOx CEM data shall be used.

35. PES shall keep the following records for the flare:
    (a) Continuous record of the presence of a pilot flame;
    (b) Fuel types and fuel usage on a daily basis;
    (c) The date, time, and duration of each flaring incident, the cause of the flaring incident, the flow rate of gases being sent to the flare during each flaring incident, and the amount of each pollutant emitted during each incident.
    (d) Discharges greater than 500 lb SO_2 in any 24-hour period from the flare. Records shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds. The records shall include information as required in 40 C_FR 60.108a(c)(6). [Consent Decree and 40 CFR 60.108a(c)(6)]
    (e) A copy of the Flare Management Plan.[40 CFR 60.108a(c)(1)]
    (f) If the monitoring option in 40 CFR 60.107a(e)(2) is used, the Permittee shall keep records of the H_2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H_2S ratios, the calculated 10-day average total sulfur-to-H_2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H_2S ratio. [40 CFR 60.108a(c)(7)]
        (i) Root cause analysis
        (ii) Stack tests conducted on the flare.

36. PES shall maintain the following records:
    (a) Continuous H_2S or stack SO_2 monitoring records for heaters (H1 H2).
    (b) Monthly records for heater 13H1 to demonstrate compliance with the emission limit specified in Condition 7 based on daily analysis of H_2S content in the refinery fuel gas used.
    (c) Records of stack test results;
    (d) Records of maintenance per Condition 11;
    (e) Manufacturer's specifications and recommendations;
    (f) Records of the components in Hydrogen service.
    (g) Annual tune ups conducted on each heater;
    (h) Energy assessments conducted on each heater.

37. All records shall be kept for minimum five (5) years and produced upon request by AMS.

Reporting

38. PES shall submit an excess emission and continuous monitoring system performance report and/or a summary report to AMS and the EPA Administrator semiannually. The report shall include when and how long the pilot flame was not present in the flare. [63.10(e)(3)]

39. PES shall report semiannually all rolling 3-hour periods during which the average concentration of H_2S in fuel gas exceeded 0.1 grains per dscf or all rolling 3-hour periods during which the average concentration of SO_2 in the stack exceeded 20 ppmv (dry basis, zero percent excess air).
    [40 CFR 60.105(e)(3), 40 CFR 60.7(c)]

40. For the storage tank, PES shall follow reporting procedures specified in 40 CFR 60.115b and 116b.

41. PES shall, within two hours of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

42. For the South Flare,
    (a) PES shall submit an excess emissions reports for all periods of excess emissions as defined in 40 CFR 60.107a(i)(2)(i) in accordance with 40 CFR 60.108a(d)
    (b) All notifications required in 40 CFR 60 Subpart Ja shall be submitted to the following address: [40 CFR60.103a(b)(3)]

U.S. Environmental Protection Agency,
Office of Air Quality Planning and Standards, Sector Policies and Programs Division,
U.S. EPA Mailroom (E143-01),
Attention: Refinery Sector Lead,
109 T.W. Alexander Drive,
Research Triangle Park, NC 27711.

Electronic copies in lieu of hard copies may also be submitted to refinerynsps@epa.gov

    (c) The Permittee shall follow the same investigation, reporting, and corrective action procedures as those set forth in Section V.K for Acid Gas Flaring Incidents of the Consent Decree. The results of this will be submitted with the Semi-Annual CD Report.
    (d) The Permittee shall submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]
    (e) The Permittee shall submit CEM report for the H2S to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Approval No: 16013
Plant ID: 01501

Source: Philadelphia Energy Solutions Refining and Marketing LLC (PES)
Location: 3144 Passyunk Avenue. Philadelphia, PA 19145-5299

Attention: Ms. Janet Ferris, Environmental Manager
Address: 3144 Passyunk Avenue. Philadelphia, PA 19145-5299
Phone: 215-339-2074
Email: Janet.Ferris@pes-companies.com

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health, Air Management Services (AMS) on **July 11, 2017** approved plans for the modification of the air contamination source(s) described below:

- Modify Condition 11 of Plan Approval No. 05214 dated October 4, 2005 to allow hydrogen Sulfide (H_2S) monitoring of the fuel gas supplied to the 1332 H2 Heater (CU0009) at the Girard Point Mix Drum (V-10001) in lieu of the original H_2S CEM installed at 1332 H-2 Heater under Plan Approval No. 05214. Plan Approval No. 05214 was to replace the 1332 CRU H-2 Hydrocarbon Heater with a new unit. Both the original unit and the replacement unit burn refinery fuel gas and have a capacity of 60 MMBTU/hr.

- The original H_2S CEM installed at the 1332 H2 Heater is currently referenced in the H_2S CEMS Location Table in the Title V Permit number V06-16, Group 2, Monitoring Requirements, Condition 1, item (iv) This Plan Approval allows the removal of the H_2S CEM at the 1332 H2 Heater Unit.

- The Girard Point Mix Drum is the only fuel source that is supplied to the 1332- H2 Heater and the GP Mix Drum shall be equipped with a certified H_2S CEM to monitor the H_2S of fuel gas.

- Incorporate the RACT Plan Approval Requirements dated 2/19/2016 for the 1332 H2 Heater in Condition 13 of this Plan Approval.

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 16013
PES

This plan approval expires on January 11, 2019. If modification has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating per. The sources covered by this plan approval are subject to the conditions prescribed in the attachment.

_____
Edward Wiener
Chief, Source Registration

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 16013
PES

1. The above source shall be installed in accordance with the specifications in the application (as approved herein).

2. The heater shall fire only refinery fuel gas. The firing rate shall not exceed 60 MMBTU/hr.

3. The heater shall be equipped with Ultra Low NOx burners and shall achieve a NOx emission rate of 0.04 lbs/MMBTU at 3% oxygen at full design load, 3-run average. [25 PA Code § 127.1, assures compliance with the RACT Plan Approval dated 2/19/2016]

4. Carbon Monoxide (CO) emissions from the heater shall not exceed 400 ppmdv at 3% oxygen, 3-run average. [40 CFR 63 Subpart DDDDD, Table 1]

5. Particulate matter emissions from the heater shall not exceed 0.10 lbs/MMBTU gross heat input.
   [AMR II. Section V.2]

6. Sulfur Dioxide (SO2) emissions from the heater shall not exceed 0.53 lbs/MMBTU at any time or 0.33 lbs/MMBTU on a rolling 365-day average. [SO2 Operating Permit No. SO2-95-039]

7. The Hydrogen Sulfide content of refinery fuel gas burned in the heater shall not exceed 0.10 grains per dry standard cubic foot. [40 CFR 60.104(a)(1) – assures compliance with Condition 6]

8. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.

   (b) Equal to or greater than 60% at any time.

9. The heater shall be installed, maintained, and operated in accordance with manufacturer's specifications.

10. Within 180 days after initial start up, PES shall conduct performance tests to demonstrate compliance with the Nitrogen Oxide emission limit specified in Condition 3 and the Carbon Monoxide emission limit specified in Condition 4. The CO performance test shall meet the requirements of 40 CFR 63.7520 and Table 5 of 40 CFR 63 Subpart DDDDD. The stack test protocol shall be submitted to AMS for approval at least 30 days before the test date and the test results shall be submitted within 60 days after the test.

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 16013
PES

11. PES shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 40 CFR 60.105(a)(4) and 25 PA Code Chapter 139.
    (a) The H_2S in the refinery fuel used for the 1332 H2 heater has shall be monitored at the H2S CEM at the GP Mix Drum (V-100010) and shall be certified [Application].
    (b) The Girard Point fuel gas shall be the only source of fuel supplied to the 1332 H-2 Heater. [Application]

12. PES shall install and operate a fuel flow monitor on the heater.

13. PES shall comply with the RACT Permit requirements for the 1332 H-2 Heater.[RACT Plan Approval dated 2/9/2016]
    (a) PES will use combustion tuning to comply with RACT requirements for the 1332 H-2 Heater.
    (b) PES shall monitor all fuel input to all heaters and boilers with BTU limitations on a daily basis to insure capacity limits are not exceeded or PES shall install fuel limiting devices on the heaters or boilers to keep capacities below allowable.
    (c) Compliance with emission limits for 1332 H2 Heater (0.040 lbs/MMBTU/hr) shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at any time, require three one-hour stack tests.

14. PES shall analyze fuel gas samples for heating value daily.

15. PES shall keep the following records for the heater:

    (a) Continuous Hydrogen Sulfide monitoring system records.

    (b) Records of daily refinery fuel gas consumption, heating value, and sulfur content.

    (c) Stack test results.

    These records shall be kept for a minimum of 5 years and produced upon request by AMS.

16. PES shall submit all notifications required by 40 CFR 63.7545.

17. PES shall submit excess emissions reports in accordance with 40 CFR 60.7(c), including all rolling 3-hour periods during which the average concentration of H2S in fuel gas burned in the heater exceeded 0.1 grains per dscf. [40 CFR 60.105(e)(3)]

18. PES shall submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD.

19. PES shall submit immediate startup, shutdown, and malfunction repots in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 16013
PES

20. PES shall within two hours of knowledge of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Permit No.: IP17-000086

Date: October 17, 2017

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: PES Philadelphia Refinery
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Attention: Janet Ferris
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of a plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on October 17, 2017 approved plans for the installation and modification of the air contamination device(s) described below:

Modification of Plan Approval No. 03163 issued on 02/5/2004 for the reactivation of the 869 Alkylation units. Modification includes the following:

- Increase the 869 Alkylation Unit daily Olefin feed rate from 7,500 barrels per day to 8,500 barrels a day. The Olefin feed rate shall remain at 2,737,500 barrels per rolling twelve month period.
- Modify Condition 9 to specify the calculation method for VOC.

This Plan Approval expires on April 17, 2019. If construction or modification has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

This Plan Approval is subject to conditions prescribed in the attachment.
This Plan Approval will supersede and replace the previous Plan Approval No. 03163 dated 02/5/2004.

_____
Edward Wiener
Chief of Source Registration
(215) 685-9426

PLAN APPROVAL PERMIT CONDITIONS
PLAN APPROVAL PERMIT NO. IP17-000086
COMPANY: PHILADELPHIA ENERGY SOLUTIONS (PES)

1. Volatile Organic compound (VOC) emission from unit 869 Alkylation plant (P662) shall not exceed 15.44 tons per rolling 12-month period [AMS Plan Approval 03163, dated 2/5/04].
2. For Unit 869 Alkylation plant, Olefin feed shall not exceed 8,500 barrels per day and 2,737,500 barrels in any 12-month rolling period.
3. For 869 Alkylation Unit P662 - Individual Drain System Requirements [40 CFR 60 Subpart QQQ]
   (a) The Permittee may elect to construct and operate a completely closed drain system. [40 CFR 60.693-1(a)]
   (b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device (flare). [40 CFR 60.693-1(b)]
   (c) The Permittee must notify the EPA Administrator and AMS in the report required in 40 CFR 60.7 that they have elected to construct and operate a completely closed drain system. [40 CFR 60.693-1(c)]
   (d) If the Permittee elects to comply with the provisions of section 40 CFR 60.693-1, then they do not need to comply with the provisions of 40 CFR 60.692-2 or 40 CFR 60.694. [40 CFR 60.693-1(d)]
4. For 869 Alkylation Unit P662 - If the alternative is not done as per 40 CFR 60.693-1 then the following standards for individual drain systems shall take place:
   (a) Each drain shall be equipped with water seal controls. [40 CFR 60.692-2(a)(1)]
   (b) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls. [40 CFR 60.692-2(a)(2)]
   (c) Except as provided in 40 CFR 60.692-2(a)(4), each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions. [40 CFR 60.692-2(a)(3)]
   (d) As an alternative to the requirements in 40 CFR 60.692-2(a)(3), if the Permittee elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed. [40 CFR 60.692-2(a)(4)]
   (e) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(a)(5)]
   (f) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter. [40 CFR 60.692-2(b)(1)]
   (g) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. [40 CFR 60.692-2(b)(2)]
   (h) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge. [40 CFR 60.692-2(b)(3)]

(i) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(b)(4)]

(j) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.692-2(c)(1)]

(k) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.692-2(c)(2)]

(l) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(c)(3)]

(m) Except as provided in 40 CFR 60.692-2(e), each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section. [40 CFR 60.692-2(d)]

(n) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin. [40 CFR 60.692-2(e)]

5. For 869 Alkylation Unit P662 - Sewer Lines.

(a) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.693-1(e)(1)]

(b) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.693-1(e)(2)]

(c) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-1(e)(3)]

6. For 869 Alkylation Unit P662 - Access doors and other openings

(a) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions. [40 CFR 60.693-2(a)(5)(i)]

(b) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-2(a)(5)(ii)]

(c) The Permittee must notify the EPA Administrator and AMS in the report required by 40 CFR 60.7 that they have elected to construct and operate a floating roof. [40 CFR 60.693-2(b). This permit condition assures compliance with 25 Pa Code 129.55(a)(2)]

(d) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof

meeting the requirements of 40 CFR 60.692-3(a) shall be installed. [40 CFR 60.693-2(c). This permit condition assures compliance with 25 Pa Code 129.55(a)(1)]

(e) Except as provided in 40 CFR 60.693-2(c), if a Permittee elects to comply with the provisions of 40 CFR 60.693-2, then the Permittee does not need to comply with the provisions of 40 CFR 60.692-3 or 40 CFR 60.694 applicable to the same facilities. [40 CFR 60.693-2(d)]

(f) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA Administrator and AMS which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]

7. Gas components routed to a flare shall go to a flare that conforms to HAP control requirements under 40 CFR §63.11(b).

Monitoring Requirements

8. The Permittee shall monitor the following:

(a) The Permittee shall monitor VOC emissions from 869 Alkylation plant. EPA's Emissions Estimation Protocol for Petroleum Refineries, Table 2.2 "Methodology Rank 2 for equipment leaks'' shall be used to calculate the VOC emission from the unit.

(b) The Permittee shall monitor daily and rolling 12-month 869 Alkylation plant olefin feed rate calculated monthly.

Recordkeeping Requirements

9. The Permittee shall keep the following records:

(a) VOC emission calculations to show compliance with Condition 1. [AMS Plan Approval 03163, dated 2/5/04].

(b) Daily Olefin feed rate and rolling 12-month feed rate calculated monthly to demonstrate compliance with Condition 2. [AMS Plan Approval 03163, dated 2/5/04].

(c) For sewer lines subject to 40 CFR 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.693-1(e) when a problem is identified that could result in VOC emissions. [40 CFR 60.697(b)(3)]

(d) For completely closed drain systems subject to 40 CFR 60.693-1, the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions. [40 CFR 60.697(d)]

(e) Delay of Repair

(i) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded. [40 CFR 60.697(e)(1)]

(ii) The reason for the delay shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time. [40 CFR 60.697(e)(2)]

(iii) The signature of the Permittee (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded. [40 CFR 60.697(e)(3)]

(iv) The date of successful repair or corrective action shall be recorded. [40 CFR 60.697(e)(4)]

(f) A copy of the design specifications for all applicable equipment shall be kept for the life of the source in a readily accessible location. [40 CFR 60.697(f)(1)]

(g) The following information pertaining to the design specifications shall be kept. [40 CFR 60.697(f)(2)]

(i) Detailed schematics and piping and instrumentation diagrams. [40 CFR 60.697(f)(2)(i)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.697(f)(2)(ii)]

(h) If the Permittee elects to install a tightly sealed cap or plug over a drain that is out of active service, the Permittee shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains. [40 CFR 60.697(g)]

Reporting Requirements

10. The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]
11. A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]
12. If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]
13. The Permittee shall submit an excess emission and continuous monitoring system performance report and or a summary report to AMS and EPA semiannually. [AMS Plan Approval 03163 dated 2/5/04]
14. All records shall be kept for a minimum period of 5 years and produced upon request by AMS.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Approval No: IP16-000234 Date: December 20, 2017
Plant ID: 01501

Source: Philadelphia Energy Solutions (PES) Refining and Marketing LLC
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Owner : Philadelphia Energy Solutions (PES)
Mailing Address: 3144 Passyunk Ave
Philadelphia, PA 19145
Attention: Charles D. Barksdale Jr.
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **December 20, 2017** approved plans for the modification, installation, and operation of the air contamination source(s) described below for the Tier 3 Project.

The Tier 3 Projects will make several operational and process changes to comply with the U.S.E.P.A. Tier 3 gasoline standards. The changes will allow PES to meet the regulatory standards by performing additional sulfur-removal from finished gasoline, straight run naphtha, and other gasoline blending streams currently generated and processed at the refinery. The changes are not expected to provide for increased net production of gasoline, but rather will provide more intensive processing of existing refinery streams.

Plan Approval No. IP16-000234 amends Plan Approval No. 15253 to add Conditions 34-44 to retire the Emission Reduction Credits (ERCs) that PES was required to purchase in Condition 2.

Plan Approval No. 15253:

1. The modifications to the Unit 864 Naphtha Hydrotreating Unit will include the following:
    - Re-piping and piping sweet naphtha to tankage.
    - Replacement-in-kind of approximately the top half of tower OPV-38.
    - Replacing the existing burners with Low NOx Burners (LNB) and adding firing rate limits to Unit 864 PH-1 (613,200 MMBTU/year), Unit 864 PH-7 (332,880 MMBTU/year), Unit 864 PH-11 (508,080 MMBTU/year), and Unit 864 PH-12 (551,880 MMBTU/year).
2. The modifications to the Unit 870 Low Sulfur Gasoline (LSG) Unit will include the following:

• Install a new splitter tower between the reactors where splitter tower light ends will go to gasoline blending while the splitter tower bottoms will be further desulfurized within the unit. • Adding pumps and rerouting pipes. • Installing new heat exchangers.
3. The modifications to the Unit 1332 hydrobon reactor system will include the following: • Rerouting the hydrobon stripper bottoms to the sweet naphtha storage tanks. • Rerouting the pre-fractionator overhead to the Unit 1232 FCCU Debutanizer feed for recovery in the existing unit recovery section. • Adding/replacing valves, pumps and rerouting pipes. • Installing new heat exchangers.
4. Install Unit 870 H-3 Heater (91.0 MMBTU/hr). The heater will burn refinery fuel gas or natural gas. The installation will include the following: • 870 H-3 Heater is an idle unit from the former Sunoco Inc. (R&M) Eagle Point Refinery in New Jersey and is equipped with ultra-low NOx burners (ULNB). • Install a new H_2S CEMs to demonstrate compliance with the 40 CFR 60.104(a)(1) emission limit to be used for all three 870 Unit Heaters. • Install fugitive equipment components such as valves, pressure relief devices, and flanges/connections associated with the project modifications

This Plan Approval expires on **June 20, 2019.** If modification has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating permit.

The sources covered by this plan approval are subject to the conditions prescribed in the attachment. Wherever a conflict occurs between this Plan Approval and operating permit, construction permit, or any local, state, and federal regulations, the Permittee, shall in all cases, meet the more stringent requirement.

10/7/16 – Corrects error in Condition 12(d).

Edward Wiener
Chief, Source Registration

1. Each combustion device, piping, pumps, valves, or control device shall be installed, maintained, and operated in accordance with the manufacturer's specifications and the specifications in the application (as approved herein).

2. The Permittee shall comply with the following requirements of 25 PaCode 127.206:
   (a) PES shall secure the appropriate ERC which are suitable for use at the specific facility. The ERC shall be properly generated, certified by the PADEP and processed through the registry no later than the date approved for commencement of operation of the proposed new or modified facility. [25 Pa Code §127.206(d)]
   (b) PES may not commence operation of the new equipment or increase emissions until 45.1 tons of NOx offsets (34.7 tons of NOx emissions at 1.3:1 ratio and 38.1 tons of VOC or equivalent pollutant offsets (29.3 tons of VOC emissions at 1.3:1 ratio) are certified and registered by the Pennsylvania Department of Environmental Protection (PADEP). [25 Pa Code §127.206(d)(2)]

Emission and Operation Limits

3. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b) Equal to or greater than 60% at any time.

4. Carbon Monoxide (CO) emissions for fuel combustion unit may not exceed 1% by volume of exhaust gases. [AMR VIII, Section II]

5. Emissions from the 864 PH-7 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-7	NOx Emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu higher heating value basis determined by the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 9.99 tons per rolling 12 month period.	Application. Compliance determination shall be an AMS approved stack test.

	CO emissions	(c) CO emissions shall not exceed 13.59 tons per rolling 12 month period.	Application. Initial compliance demonstration shall be demonstrated by an AMS approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 45.5 MMBTU/hr on a daily basis. (e) Firing duty shall not exceed 332,880 MMBtu per rolling 365-day period.	Application.

6. Emissions from the 864 PH-1 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-1	NOx emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed than 18.40 tons per rolling 12 month period.	Application
	CO emissions	(c) CO emissions shall not exceed 25.04 tons per rolling 12 month period.	Application. Initial compliance demonstration shall be demonstrated by an AMS approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 80.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 613,200 MMBtu per rolling 365-day period.	Application

7. The 864 PH-11 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-11	NOx emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu based	Application. Compliance shall be demonstrated by

		on the average of three stack test runs.	an AMS-approved stack test.
		(b) NOx emissions shall not exceed 15.24 tons per rolling 12 month period.	Application
	CO emissions	(c) CO emission shall not exceed 20.75 tons per rolling 12 month period.	Application. Initial compliance demonstration shall be demonstrated by an AMS approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 74.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 508,080 MMBtu per rolling 365-day period.	Application

8. The 864 PH-12 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 864 Naphtha Hydrotreating Unit listed above including the installation of LNB are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
864 PH-12	NOx emissions	(a) NOx emissions shall not exceed 0.06 lb/MMBtu based on the average of three stack test runs.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 16.56 tons per rolling 12 month period.	Application.
	CO emissions	(c) CO emissions shall not exceed 22.54 tons per rolling 12 month period.	Application. Initial compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall be less than 85.1 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).

		(e) Firing duty shall not exceed 551,880 MMBtu per rolling 365-day period.	Application

9. The 870 H-1 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 870 LSG Unit listed above including the installation of the new splitter tower is complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
870 H-1	NOx emissions	(a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs.	Plan Approval No. 02184. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 12.32 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 0.17 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 97.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94 for (d).
		(e) Firing duty shall not exceed 849,720 MMBtu on a rolling 365-day basis.	Application

10. The 870 H-2 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 870 LSG Unit listed above including the installation of the new splitter tower is complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes

870 H-2	NOx emissions	(a) NOx emissions shall not exceed 0.035 lb/MMBtu based on the average of three stack test runs.	Plan Approval No. 02184. Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 6.50 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 0.21 tons per rolling 12 month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 53.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94
		(e) Firing duty shall not exceed 464,280 MMBtu per rolling 365-day period.	Application.

11. The 870 H-3 heater shall not exceed the following limits:

Source	Parameter	Limit	Notes
870 H-3	NOx emissions	(a) NOx emissions shall not exceed 0.03 lb/MMBtu based on the average of three stack test runs.	Best Available Technology (BAT), assures compliance with 40 CFR 60.102a(g)(2)(i)(B). Compliance shall be demonstrated by an AMS-approved stack test.
		(b) NOx emissions shall not exceed 11.96 tons per rolling 12 month period.	Application. Initial compliance determination shall be demonstrated by an AMS-approved stack test.
	CO emissions	(c) CO emissions not exceed 11.96 tons per rolling 12 month period.	Application. Initial compliance shall be demonstrated by an

			AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 91.0 MMBtu/hr on a daily average basis. (e) Firing duty shall not exceed 797,160 MMBtu per rolling 365-day period.	Application.

12. The 1332 H-2 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 1332 hydrobon reactor system listed above are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
1332 H-2	NOx emissions	(a) NOx emissions shall not exceed 0.04 lb/MMBtu based on the average of three stack test runs. (b) NOx emissions shall not exceed 10.51 tons per rolling 12-month period.	Plan Approval No. 05124. Compliance shall be demonstrated by an AMS-approved stack test.
	VOC emissions	(c) VOC emissions shall not exceed 1.36 tons per rolling 12-month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(d) Firing duty shall not exceed 60.0 MMBtu/hr on a daily average basis.	Reasonably Available Control Technology (RACT) 25 Pa. Code §§129.91 through 129.94
		(e) Firing duty shall not exceed 525,600 MMBtu per rolling 365-day period.	Application.

13. The 1332 H-3 heater shall not exceed the following limits. These limits will not go into effect until the modifications to the Unit 1332 hydrobon reactor system listed above are complete and the unit has commenced operation in the Tier 3 configuration.

Source	Parameter	Limit	Notes
1332 H-3	NOx emissions	(a) NOx emissions shall not exceed 17.67 tons per rolling 12-month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.

	VOC emissions	(b) VOC emissions shall not exceed 0.97 tons per rolling 12-month period.	Application. Compliance shall be demonstrated by an AMS-approved stack test.
	Operational Limits	(c) Firing duty shall not exceed 43.0 MMBtu/hr on a daily average basis	Application.
		(d) Firing duty shall not exceed 376,680 MMBtu per rolling 365-day period.	Application.

14. PES shall not permit at any time the emission into the outdoor atmosphere of any malodorous air contaminants, in such a manner that malodors are detectable outside its boundary. [25 Pa Code §123.31(b)]

Work standard practices

15. The Permitee shall operate the facility consistent and within the projected future actual emission basis contained in the Plan Approval Application.

16. Each process heater or combustion unit shall only burn natural or refinery gas.
    (a) Each heater shall not burn any fuel has that contains H_2S in excess of 230 milligrams per dry standard cubic meter (mg/dscm) or 0.10 grains per dry standard cubic feet (gr/dscf). [40 CFR 60.104(a)(1), Consent Decree Order 05-CV-02866]
    (b) The span value for this instrument is 425 mg/dscm H_2S.

17. The 870 H-3 Heater shall be installed with ULNB meeting the NOx emission limit in Condition 11(a). [Best Available Technology (BAT), 25 Pa. Code §127.1]

18. Heaters 864 PH-1, 864 PH-7, 864 PH-11, and 864 PH-12 shall be each be installed with low NOx burners (LNB) meeting the NOx emission limits of Conditions 5(a), 6(a), 7(a), and 8(a). [Application] .

19. Pumps handling volatile organic compounds with a vapor pressure of greater than 1.5 psi (10.3) at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100 Fahrenheit shall be used. [25 Pa Code §129.55(b)]

20. Purging of volatile organic compounds during depressurization of reactors, fractionating columns, pipes or vessels during shutdown, repair, inspection or startup shall be performed in a manner as to direct the volatile vapors to a fuel gas system, flare, or recovery system until the internal pressure in such equipment reaches 19.7 psia (136 kilopascals) [25 Pa Code §129.55(d)]

21. The Permittee shall conduct a tune-up on each process heater annually as specified in 40 CFR 63.7540. For new heaters, this requirement begins within 180 days of start-up.
    (a) Each tune-up shall include: [40 CFR 63.7540(a)(10)]
        (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). If entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment.
        (ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
        (iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).
        (iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject.
        (v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.
            (A) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Condition 19(a)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]
            (B) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

22. PES shall comply with the following for fugitive sources:
    (a) No person shall cause, suffer, allow or permit volatile organic compounds (VOC) to be emitted from leaking flanges, gaskets, seals, connections, joints, fittings or other process equipment components not involving moving parts, nor shall any person cause, suffer, allow or permit VOC to be emitted from leaking valves, pumps, compressors, safety pressure relief devices or other process equipment components involving moving parts such that: [AMR V, XIII]
    (i) The VOC emission from any leaking process equipment component results in a VOC in air concentration of 10,000 parts per million by volume (ppmv), or greater, when measured by test methods approved by the Department; or
    (ii) The VOC emission is in a liquid state at the point(s)of discharge into the atmosphere.

(b) PES shall comply with the requirements of 25 PA Code §129.58.

Testing Requirements

23. For each of the Unit 864 heaters (PH-1, PH-7, PH-11, and PH-12), within 60 days of achieving maximum capacity, but no longer after 180 days of installing the low NOx burners, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emission limits in Conditions 5(a), 5(c), 6(a), 6(c), 7(a), 7(c), 8(a), and 8(c). NOx and CO tests must be conducted simultaneously.

24. For Unit 870 H-1 and H-2 Heaters, within 60 days of completion of the Tier 3 project, the Permittee shall conduct NOx and VOC tests to verify that emissions do not exceed the emission factors in Conditions 9 and 10.

25. For Unit 870 H-3 Heater, within 60 days of achieving maximum capacity, but no longer than 180 days after start-up, the Permittee shall conduct NOx and CO stack tests to determine compliance with the emissions limits in Conditions 11(a), 11(b), and 11(c). The NOx and CO tests must be conducted simultaneously.

26. For the Unit 1332 H-2 and H-3 Heaters, within 60 days of completion of the Tier 3 project, the Permittee shall conduct NOx and VOC tests to verify that emissions do not exceed the emission factors in Conditions 12 and 13.

27. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 PA Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test. The following performance tests methods shall be used to demonstrate compliance with the emission limitations:
    (a) U.S.E.P.A. Reference Method 7E shall be used for nitrogen oxides.
    (b) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.
    (c) U.S.E.P.A. Reference Method 25A shall be used for volatile organic compounds.

28. If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in the Plan Approval may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

Monitoring and Recordkeeping Requirements

29. The Permittee shall operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.106(e)(1) and 25 PA Code Chapter 139.
    (a) The Permittee shall install a new continuous H_2S monitor and recorder for the fuel gases burned in the 870 Heaters H-1, H-2, and H-3. A Phase I application

will be submitted to and approved by AMS prior to installation in accordance with 25 PA Code Chapter 139 and the PA Continuous Monitoring Manual, Revision 7.

(b) Fuel gas combustion devices having a common source of fuel gas may be monitored at one location if monitoring at this location accurately represents the concentration of H_2S in the fuel gas burned.

(c) The performance evaluation of the H_2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.

30. The Permitee shall monitor and keep record the following:

(a) For the 864 Heaters PH-1, PH-7, PH-11, and PH-12, rolling 12-month NOx and CO emissions calculated monthly to demonstrate compliance with the 12 month rolling period emission limits for NOx and CO. Compliance determination shall be based on AMS-approved stack tests.

(b) For the 870 H-1 and H-2 Heaters, monthly records to demonstrate compliance with Conditions 9 and 10. Compliance determination shall be based on AMS-approved stack tests.

(c) For the 870 H-3 Heater, rolling 12-month NOx and CO emissions to demonstrate compliance with Conditions 11(b) and 11(c). Compliance determination shall be based on AMS-approved stack tests.

(d) For the 1332 H-2 and H-3 Heaters, monthly records to demonstrate compliance with Conditions 12 and 13. Compliance determination for the NOx and VOC emission limits shall be based on AMS-approved stack tests.

(e) The performance evaluation of the H_2S monitor shall use Performance Specification 7, Method 11 shall be used for conducting the relative accuracy evaluations.

(f) The Permittee shall monitor the refinery fuel gas heating value and consumption daily, when each heater is in operation.

(g) The Permitee shall keep records to demonstrate compliance with Condition 15 on a monthly basis in an AMS-approved format. Records shall include the projected future actual emissions listed in the Plan Approval Application, monthly emissions, rolling 12-month emissions, and the calculation method.

(i) For units where potential emissions were used as projected actual emissions in the application, monthly and rolling 12-month emissions are only needed if there was a malfunction or other incident during the period where actual emissions were higher than the emission factor in the application. Otherwise, potential emission calculations are sufficient.

(h) For tune-ups conducted on the heaters as per Condition 19: [40 CFR 63.7540(a)(10)(vi)]

(i) Maintain on-site and submit, if requested by EPA or AMS, a report containing the following information:

(A) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical

operating load, before and after the tune-up of the boiler or process heater;

(B) A description of any corrective actions taken as a part of the tune-up; and

(C) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

All records shall be kept for a period of five years.

Reporting Requirements

31. PES shall submit CEM and production reports to Air Management Services on a quarterly basis in accordance with 25 PA Code Chapter 139 and the PA Continuous Source Monitoring Manual.

32. Notifications required under 40 CFR 63 Subpart DDDDD, 40 CFR 60 Subpart J, and 40 CFR 60 Subpart Ja.

33. Any notifications required, as a result of any condition herein should be directed to Chief of Source Registration, Air Management Services, 321 University Avenue, Philadelphia, PA 19104.

Retirement of ERCs – Plan Approval No. IP16-000234

34. This plan approval is granted solely to amend Plan Approval No. 15253 for the transfer and use of ERCs according to 25 Pa. Code § 127.208(2), and does not authorize a person to construct, modify, or reactivate an air contaminant source or allow for the installation of an air cleaning device on an air contaminant source.

35. This plan approval authorizes the transfer and use of 10.52 tpy of VOC ERCs from FXI Inc. to PES to meet the emissions offset requirements of 25 Pa. Code Chapter 127.

36. This plan approval authorizes the transfer and use of 6.00 tpy of VOC ERCs from Honeywell International, Inc. to PES to meet the emissions offset requirements of 25 Pa. Code Chapter 127.

37. This plan approval authorizes the transfer of 24.03 tpy of VOC ERCs from Northville Setauket Terminal to PES and the use of 21.58 tpy VOC ERCs by PES to meet the emissions offset requirements of 25 Pa. Code Chapter 127. PES has 2.45 tpy VOC ERCs remaining from this transaction.

38. PES created NOx ERCs from shutdown of sources at their refinery in Marcus Hook, Pennsylvania. The 45.1 tpy of NOx ERCs were generated from shutdown of sources on December 31, 2011**.**

39. FXI Inc. created VOC ERCs from shutdown of sources at their plant in Delaware County, Pennsylvania. The 10.52 tpy of VOC ERCs were generated from shutdown of sources on December 31, 2008.

40. Honeywell International, Inc. created VOC ERCs from shutdown of sources at their plant in Delaware County, Pennsylvania. The 6.00 tpy of VOC ERCs were generated from shutdown of sources on March 27, 2007.

41. Northville Setauket Terminal created VOC ERCs from their facility in Suffolk County, New York. The 24.03 tons of VOCs were generated from the over controlling VOC emissions and a process change at their facility on January 5, 2006.

42. These ERCs are to be used to satisfy emissions offset requirements of Plan Approval No. 15253 in accordance with 25 Pa. Code §§ 127.206 through 127.210, for the NOx and VOC emissions increases from the proposed facility. [25 Pa. Code §127.208]

43. Upon the issuance of this plan approval, the ERCs are no longer subject to expiration under 25 Pa. Code § 127.206(f), except as specified in 25 Pa. Code § 127.206(g). If the NOx and VOC ERCs identified in this plan approval are not used and subsequently re-entered into the ERC registry, the applicable 10-year expiration date may not be extended.

44. This approval satisfies the requirements of 25 Pa. Code Chapter 127, Subpart E (relating to new source review) including §§ 127.205(4), 127.208(2), 127.209(c) and 127.210.

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) No. IP17-000514

Philadelphia Energy Solutions Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: 01/08/2018
Expiration Date: 07/08/2019

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **01/08/2018** approved plans for the **modification of the following storage tank located at the facility:**

GP IP17-000514 – Reactivate Tank PB 848 (P-595) for distillate oil service

Facility:	**Philadelphia Energy Solutions Refining & Marketing (PES) LLC 3144 Passyunk Avenue Philadelphia, PA. 19145**
Owner:	**Philadelphia Energy Solutions Refining & Marketing (PES) LLC 3144 Passyunk Avenue Philadelphia, PA. 19145**
Plant ID:	**1501**
Facility Contact:	**Janet Ferris (215) 339-7146**
Permit Contact:	**Janet Ferris**
Phone:	**(215) 339-7146**
Email:	**Janet.Ferris@pes-companies.com**

Krystal Stankunas _____
Environmental Engineer

Issue Date **01/08/2018**

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on 07/08/2019. If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Permit No.: IP16-000225 Date: April 30, 2018

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Janet Ferris
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of a plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on April 30, 2018 approved plans for the installation and modification of the air contamination device(s) described below:

- Installation of a permanent ammonia injection system on 868 Fluidized Catalytic Cracking Unit (FCCU) to reduce opacity in the flue gas.
- Modify 868 FCCU emission limits listed in Condition D.21(a)(1) of the Title V Operating Permit No. V06-016 to include new permit limits, correct language incorporated from Plan Approval No. 00184, and incorporate EPA policy on emission limit exemptions during start-up, shut-down, and malfunctions.

This Plan Approval expires on October 30, 2019. If construction or modification has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

This Plan Approval is subject to conditions prescribed in the attachment.

_____
Edward Wiener
(215) 685-9426

PLAN APPROVAL PERMIT CONDITIONS
PLAN APPROVAL PERMIT NO. IP16-000225
COMPANY: PHILADELPHIA ENERGY SOLUTIONS (PES)

1. The ammonia injection system shall be installed and operated in accordance with the specifications in the application as approved herein.

2. Ammonia slip may not exceed 5.55 lb/hr. [Application]

3. Ammonia emissions from the 868 FCCU shall not exceed 16.6 tons per rolling 12-month period. [Application]

4. The 868 FCCU NO_x emissions shall be limited to 100 ppmdv @ 0% O_2 on a 7-day rolling average and 130.2 tons per rolling 365-day period. [Case-by-Case RACT Plan Approval February 9, 2016]

5. The allowable emission for 868 FCCU shall not exceed the limitations in the following table;

		Emission Limitation		
Pollutants	**Concentration**	**Lbs/hr**	**Lbs/day**	**Tons/yr****
Particulate	1 lb/1000 lb coke	25*	600	95
SO_2	25 ppmvd @ 0% O_2 on 365-day rolling average, and 50 ppmvd @0% O2 on 7-day rolling average	358	5880	600
CO	500 ppmvd	54*	1,300	100
NOx	100 ppmdv @0%O_2 on a 7-day rolling average	221	5,304	130.2
HC	N/A	5	123	23

* The 25 lbs/hr Particulate emission limit in this condition comes from Plan Approval No. 00184 and does not apply during start-up and shut-down. The 54 lbs/hr Carbon Monoxide emission limit in this condition comes from Plan Approval No. 00184 and does not apply during start-up, shut-down, and hot standby. The other emission limits in this condition apply at all times. The Particulate Matter emission limit in Condition 6 applies at all times. The Permittee shall comply with Condition 8 during start-up, shut-down, and hot standby as a surrogate for Carbon Monoxide (concept borrowed from 40 CFR 63.1565(a)(5)(ii)).

** Tons per year shall be calculated on the calendar and the daily rolling average.

NOTE: [Plan Approval No. 00184 dated March 22, 2003. This streamlined permit condition assures compliance with Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H, SO2 Operating Permit No. SO2-95-039, NSPS Subpart J, MACT Subpart UUU, AMS Approval letter dated November 22, 1999 (Item 3) and Case-by-Case RACT Plan Approval February 9, 2016]

6. At all times, Particulate Matter emissions from the 868 FCCU shall not exceed 40 pounds per hour. [AMR II, Section VII]

7. The Permittee shall maintain the inlet velocity to the primary internal cyclones of the catalytic cracking unit catalyst regenerator at or above 20 feet per second (hourly average) during startup and shutdown. [Application]

8. The Permittee shall maintain the hourly average oxygen (O_2) concentration in the exhaust gas from the 868 FCCU catalyst regenerator at or above 1 volume percent (dry basis) during start-up, shut-down, and hot standby. [Application]

9. The 868 FCCU CO emissions shall be limited to 100 ppmvd at 0% O_2 on a 365-day rolling average basis. [Consent Decree Order 05-02866, on March 21, 2006]

10. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41 – assures compliance with 40 CFR 63 Subpart UUU Table 2, Item 1]
    (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour;
    (b) Equal to or greater than 60% at any time.

11. PES shall follow good combustion practices controlling the level of excess oxygen and CO promoter in the regenerator to minimize NOx emissions from the regenerator. A NOx Continuous Emission Monitoring System (CEMS) shall be operated on the unit. [Case-by-Case RACT Plan Approval February 9, 2016]

12. The Permittee shall not permit, cause, suffer, or allow an emission of odor beyond the perimeter of the facility. [AMR V, Sec XX]

13. PES shall prepare an operation, maintenance, and monitoring plan according to the requirements in 40 CFR 63.1574(f) and operate at all times according to the procedures in the plan. [40 CFR 63.1564(a)(3) & 63.1565(a)(3)]

14. PES shall conduct a performance test at the exhaust stack to establish emission factors and demonstrate compliance with Condition 2 for NH3. NH3 emissions shall be determined using the average of 3 one-hour tests per the EPA Reference Method CTM 027 or ASTM Method D6348-03.The performance test shall be conducted no later than 90 days after start-up. PES shall submit a stack test protocol to Air Management Services (AMS) at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing. If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, PES shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates.
    (a) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, PES must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher

rate.

(b) The 19% ammonia solution injection rate may not exceed a rate established under an AMS approved stack test that assures the ammonia slip level is not exceeded. The initial maximum rate shall be 7 gallons/hr until a different rate is established and approved by AMS. The ammonia slip rate (lb/hr) is expected to vary with injection rate. Therefore, compliance with the 12-month rolling ammonia limit (Condition 3) will be based upon source test results and a method approved by AMS.

(c) If no NH3 is being added, NH3 emissions are assumed to be negligible.

15. PES shall monitor and keep records of ammonia emissions on a monthly basis to demonstrate compliance with Condition 3. The compliance demonstration shall be based on AMS-approved stack tests.

15. PES shall monitor and record daily ammonia usage, and continuously monitor and record the ammonia injection rate to ensure compliance with Condition 2.

16. PES shall keep the ammonia stack test records.

17. The FCCU Unit 868 shall be equipped with continuous monitors and recorders for stack flow rate, NOx (including NO2), SO_2, CO, and Opacity for compliance determination with the emission limitations [AMS Plan Approval No. 00184, dated March 22, 2002]

    (a) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

18. The Permittee shall install instrument to continuously monitor O_2 level in the regenerator exhaust for correcting the data for excess air.

19. The Permittee shall demonstrate compliance with the SO_2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 25 PA Code Chapter 139 procedures. [Permit No. SO2-95-039]

20. The Permittee shall monitor the process rate on a daily basis. [Permit No. SO2-95-039]

21. The Permittee shall keep continuous emission records for FCCU 868.

22. The Permittee shall keep continuous emission records for O_2 level in the regenerator exhaust.

23. The Permittee shall continuously monitor and record the inlet velocity to the primary cyclones of the catalytic cracking unit catalyst regenerator during periods of start-up, shut-down and hot standby for the 868 FCCU.

24. The Permittee shall keep records of all periods of start-up, shut-down, and hot standby for the 868 FCCU.

25. The Permittee shall keep records demonstrating compliance with the emission limits in this plan approval.
    (a) Compliance with ammonia, PM, and HC limits shall be based on AMS-approved stack tests.
    (b) Compliance with SO_2, CO, and NOx limits shall be based on CEMS and continuous flow monitor data. Records shall be in the same units and averaging periods as the emission limits.

26. All records shall be kept for a minimum period of 5 years and produced upon request by AMS.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit Nos.:IP18-000260 & IP18-000263 Date: **September 26, 2018**

Plant ID: 01501

Owner:	PES Refining and Marketing	Source:	PES Philadelphia Refinery
Address:	3144 Passyunk Ave Philadelphia, PA 19145	Location:	3144 Passyunk Ave Philadelphia, PA 19145

Attention: Janet Ferris
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on September 26, 2018 approved plans for the installation and temporary operation of the air contamination device(s) described below:

Installation and temporary operation of the following contamination device(s):

- Closure of 867 (P-646) (PB) Sour Water Stripper (SWS) flare and the Acid Gas flare Sour Water flare and relocate the flare line to the existing South Yard North Flare P-642 (PB), and the South Yard South Flare P-643 (PB). No increase to flare capacity.
- Unit 1231 Flare tip replacement & associated smokeless assembly injection system. No increase to flare capacity.
- Incorporate 40 CFR 63 Subpart CC for Flares as applicable.
- Incorporate 40 CFR 60 Subpart Ja as applicable.

This Installation Permit expires on **September 26, 2019**. If construction has not been completed by this date, an application for either an extension or a new installation permit application must be made.

The sources covered by this installation permit are subject to the conditions prescribed in the attachment.

Rahel Gebrekidan

Rahel Gebrekidan
Engineering Supervisor
(215) 685-9429

1. Each Flare shall be operated and maintained in accordance with the manufacturer's specification, good engineering practices, and the specifications in the application (as approved herein).

Emission limitation

2. For each flare, emissions of sulfur oxides shall not exceed 0.05 percent by volume. [AMR III, Section II.B]
3. For each flare; Hydrogen Sulfide (H2S) content of the fuel gas burned in each flare shall not exceed 230 mg/dscm (0.10 grains per dry standard cubic foot). [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1), AMS Plan Approval 02184 dated 8/12/04]
   (a) The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from Condition 3. [40 CFR 60.104 (a)(1)]

Work Practice Standard

4. Each flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]
5. Each flare shall be operated and maintained in conformance with their design. [40 CFR 60.18(d), 40 CFR 63.11(b)(1)]
6. Each flare shall be operated at all times when gases may be vented to them. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]
7. Each flare shall be operated with a pilot flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]
8. Each flare shall be operated with a pilot flame present at all times. [40 CFR 60.18(c)(2)]
9. The Permittee has the choice of adhering to either the heat content specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or adhering to the requirements in 40 CFR 60.18(c)(3)(i). [40 CFR 60.18(c)(3)]
10. Steam-assisted flares shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]
11. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided below: [40 CFR 60.18(c)(4)]
    (a) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c)(4)(ii)]
    (b) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c)(4)(iii)]

12. The Permittee shall investigate the cause of Hydrocarbon Flaring, Acid Gas Flaring and Tail Gas incidents, take reasonable steps to correct and minimize the conditions that have caused or contributed to Hydrocarbon Flaring, Acid Gas Flaring and Tail Gas incidents. [Consent Decree Order 05-CV-2866]

Flares Subject to 40 CFR 60 Subpart Ja
(South Yard North Flare (P-642), South Yard South Flare (P-643), 1231 (P-117) Flare, Girard Point 1232 (P-118) Flare, Point Breeze North Yard LPG Flare (CD-104), and Girard Point 433 Flare (P-119)) Flares constructed, reconstructed or modified – after June 24, 2008

13. The Permittee shall not burn any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit. [40 CFR §60.103a(h)]
14. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2)]
    (a) The Permittee shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H2S.
    (b) The Permittee shall conduct performance evaluations for each H_2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.
    (c) The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.
    (d) Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in the flares.
    (e) The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H_2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph §§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument required in paragraph (e)(1) is used to demonstrate compliance with the H_2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).
    (f) The owner or operator of modified flare that meets the following all three criteria shall comply with the requirements of Condition 14(a)-(e) no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans pursuant to §60.13(i) until the flare is in compliance with requirements of Condition 14(a)-(e).
        (i) The flare was an affected facility subject to subpart J of this part prior to becoming an affected facility under §60.100a.

(ii) The owner or operator had an approved alternative monitoring plan or plans pursuant to §60.13(i) for all fuel gases combusted in the flare.

(iii) The flare did not have in place on or before September 12, 2012 an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases that is capable of complying with the requirements of Condition 14(a)-(e).

15. The Permittee is not required to comply with Condition 14(a)-(f) for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the following requirements shall be considered inherently low in sulfur content. [40 CFR §60.107a(3)]
    (a) Pilot gas for heaters and flares.
    (b) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.
    (c) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.
    (d) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in Condition 16.
        (i) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in Condition 16(c). [40 CFR §60.107a(b)(3)]
16. *Exemption from H_2S monitoring requirements for low-sulfur fuel gas streams.* The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H2S monitoring requirements in Condition 13 for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs in 40 CFR 60§ 107a (a)(1) and (2) until there are changes in operating conditions or stream composition. [40 CFR §60.107a(b)]
    (a) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:
        (i) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;
        (ii) A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);
        (iii) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;
        (iv) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv H_2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless other additional information would support

reduced sampling. The owner or operator shall use detector tubes ("length-of-stain tube" type measurement) following the "Gas Processors Association Standard 2377-86 (incorporated by reference - see §60.17), using tubes with a maximum span between 10 and 40 ppmv inclusive when 1≤N≤10, where N = number of pump strokes, to test the applicant fuel gas stream for H_2S; and

(v) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H_2S content in the fuel gas stream going to the loading rack flare).

(b) The effective date of the exemption is the date of submission of the information required in Condition 16(a). [40 CFR 60§ 107a (b)(1)]

(c) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in Conditions 16(c)(i), 16(c)(ii), or (c)(iii). [40 CFR §60.107a (b)(3)(i), (b)(3)(ii), or (b)(3)(iii)]

(i) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H_2S test on a grab sample and record the results as proof that the concentration is still within the range.

(ii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of Condition 16(a) within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(iii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H_2S monitoring using daily stain sampling to demonstrate compliance using length-of-stain tubes with a maximum span between 200 and 400 ppmv inclusive when 1≤N≤5, where N = number of pump strokes. The owner or operator must begin monitoring according to the requirements in paragraphs §60.107a(a)(1) or (a)(2) as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H_2S concentration limit. The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H_2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

17. *Sulfur monitoring for assessing root cause analysis threshold for affected flares.* Except as described in Condition 17(d), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either Conditions 17(a), (b) or (c). Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either Conditions 17(a), (b) or (c), the owner or operator of a modified flare must comply with the requirements related to either Conditions 17(a), (b) or (c)

upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either Conditions 17(a), (b) or (c), the owner or operator of a modified flare must comply with the requirements related to either Conditions 17(a), (b) or (c) of no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(e)]

(a) *Total reduced sulfur monitoring requirements*. The owner or operator shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(i) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this paragraph and paragraph (a)(2) of §60 107a provided the applicable span specifications are met.

(ii) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to this part. The owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each total reduced sulfur monitor.

(b) *H_2S monitoring requirements.* The owner or operator shall install, operate, calibrate, and maintain an instrument or instruments for continuously monitoring and recording the concentration of H_2S in gas discharged to the flare according to the requirements in Condition 17(b)(i)-(iii) and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in Conditions 17(b)(iv)-(ix).

(i) The owner or operator shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H_2S monitor may be used to comply with the requirements of this paragraph and Condition 14 provided the applicable span specifications are met.

(ii) The owner or operator shall conduct performance evaluations of each H_2S monitor according to the requirements in §60.13(c) and Performance Specification 7 of appendix B to this part. The owner or operator shall use EPA Method 11, 15 or 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference - see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative

accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(iv) In the first 10 operating days after the date the flare must begin to comply with §60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in Condition 17(b)(ix).

(v) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of appendix A-5 to part 60, EPA Method 16A of appendix A-6 to part 60, ASTM Method D4468-85 (Reapproved 2006) (incorporated by reference - see §60.17) or ASTM Method D5504-08 (incorporated by reference - see §60.17).

(vi) The owner or operator shall develop a 10-day average total sulfur-to-H_2S ratio and 95-percent confidence interval as follows:

(A) Calculate the ratio of the total sulfur concentration to the H_2S concentration for each day during which samples are collected.

(B) Determine the 10-day average total sulfur-to-H_2S ratio as the arithmetic average of the daily ratios calculated in Condition 17(b)(vi)(A).

(C) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios based on the 10 individual daily ratios using Equation 14 of §60.107a.

$$AR = Ratio_{Avg} \pm 2.262 \times SDev \qquad \text{(Eq. 14)}$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

RatioAvg = 10-day average total sulfur-to-H2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H_2S concentration ratios used to develop the 10-day average total sulfur-to-H_2S concentration ratio, unitless.

(vii) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the total sulfur concentration using the measured total sulfur concentration measured for that day.

(viii) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H_2S ratio by the daily average H_2S concentrations obtained using the monitor as required by paragraph Condition 17(b)(i) through (iii) to estimate total sulfur concentrations.

(ix) If the total sulfur-to-H_2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(c) *SO_2 monitoring requirements.* The owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of SO_2

from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of 60§ 107a, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of 60§ 107a, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of this section, and calculate the total sulfur content (as SO2) in the fuel gas using Equation 15 of 60§ 107a.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG} \qquad \text{(Eq. 15)}$$

Where:
TSFG = Total sulfur concentration, as SO2, in the fuel gas, ppmv.

CSO2 = Concentration of SO2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

Fd = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHVFG = Higher heating value of the fuel gas, MMBtu/scf.

(d) *Exemptions from sulfur monitoring requirements.* Flares identified in Conditions 17(d)(i) through (iv) are exempt from the requirements in Conditions 17(a) through (c). For each such flare, except as provided in Condition 17(d)(iv), engineering calculations shall be used to calculate the SO_2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(i) Flares that can only receive:
  (A) Fuel gas streams that are inherently low in sulfur content as described in Conditions 15(a) through (d); and/or
  (B) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H_2S monitoring requirements as described in Condition 16.

(ii) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition 19.

(iii) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition 19.

(iv) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO_2 emissions, regardless of whether or not the monitoring alternative in Condition 19 is selected for the secondary flare.

18. *Flow monitoring for flares.* Except as provided in Condition 18(b), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition 18(a), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f)]

(a) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.
  (i) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.
  (ii) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.
  (iii) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.
  (iv) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.
  (v) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

19. Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g).
20. *Excess emissions.* For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions 20(a) and (b). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages).
  (a) H_2S concentration limits for flares.
    (i) Each rolling 3-hour period during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under Condition 14 exceeds 162 ppmv.
  (b) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition 16(c)(iii), each day during which the daily concentration of H_2S exceeds 162 ppmv.

Flares Subject to 40 CFR 63 Subpart CC
(South Yard North Flare (P-642), South Yard South Flare (P-643), 1231 (P-117) Flare, Girard Point 1232 (P-118) Flare and Girard Point 433 Flare (P-119))
Each Flare at the facility listed above shall comply with the following requirement; [40 CFR Part 63 Subpart CC]

21. On or before January 30, 2019, the owner or operator of a flare used as a control device for an emission point subject to §63.670 shall meet the applicable requirements for flares as specified in paragraphs (a) through (q) of 40 CFR §63.670 and the applicable requirements in §63.671. The owner or operator may elect to comply with the requirements of paragraph §63.670(r) in lieu of the requirements in paragraphs (d) through (i), as applicable.

22. *Pilot flame presence:* The owner or operator shall operate each flare with a pilot flame present at all times when regulated material is routed to the flare. Each 15-minute block during which there is at least one minute where no pilot flame is present when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The owner or operator shall monitor for the presence of a pilot flame as specified in paragraph (g) of §63.670.
23. *Visible emissions:* The owner or operator shall specify the smokeless design capacity of each flare and operate with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare. The owner or operator shall monitor for visible emissions from the flare as specified in paragraph (h) of §63.670.
24. *Flare tip velocity:* For each flare, the owner or operator shall comply with either paragraph (d)(1) or (2) of §63.670, provided the appropriate monitoring systems are in-place, whenever regulated material is routed to the flare for at least 15-minutes and the flare vent gas flow rate is less than the smokeless design capacity of the flare.
    (a) Except as provided in paragraph (d)(2) of §63.670 , the actual flare tip velocity (Vtip) must be less than 60 feet per second. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670.
    (b) Vtip must be less than 400 feet per second and also less than the maximum allowed flare tip velocity (Vmax) as calculated according to the following equation. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670 and monitor gas composition and determine NHVvg using the procedures specified in paragraphs (j) and (l) of §63.670.

$$Log_{10}(V_{max}) = \frac{NHV_{vg} + 1{,}212}{850}$$

Where:
Vmax = Maximum allowed flare tip velocity, ft/sec.
NHVvg = Net heating value of flare vent gas, as determined by paragraph (l)(4) of §63.670 , Btu/scf.
1,212 = Constant.
850 = Constant.

25. *Combustion zone operating limits:* For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVcz as specified in paragraph (m) of §63.670.
26. *Dilution operating limits for flares with perimeter assist air.* For each flare actively receiving perimeter assist air, the owner or operator shall operate the flare to maintain the net heating value dilution parameter (NHVdil) at or above 22 British thermal units per square foot (Btu/ft 2) determined on a 15-minute block period basis when regulated material is being routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVdil as specified in paragraph (n) of §63.670.
27. *Pilot flame monitoring.* The owner or operator shall continuously monitor the presence of the pilot flame(s) using a device (including, but not limited to, a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of detecting that the pilot flame(s) is present.
28. *Visible emissions monitoring.* The owner or operator shall monitor visible emissions while regulated materials are vented to the flare. An initial visible emissions demonstration must be

conducted using an observation period of 2 hours using Method 22 at 40 CFR part 60, appendix A-7. Subsequent visible emissions observations must be conducted using either the methods in paragraph (h)(1) of §63.670 or, alternatively, the methods in paragraph (h)(2) of §63.670 . The owner or operator must record and report any instances where visible emissions are observed for more than 5 minutes during any 2 consecutive hours as specified in § 63.655(g)(11)(ii).

(a) At least once per day, conduct visible emissions observations using an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If at any time the owner or operator sees visible emissions, even if the minimum required daily visible emission monitoring has already been performed, the owner or operator shall immediately begin an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If visible emissions are observed for more than one continuous minute during any 5-minute observation period, the observation period using Method 22 at 40 CFR part 60, appendix A-7 must be extended to 2 hours or until 5-minutes of visible emissions are observed.

(b) Use a video surveillance camera to continuously record (at least one frame every 15 seconds with time and date stamps) images of the flare flame and a reasonable distance above the flare flame at an angle suitable for visual emissions observations. The owner or operator must provide real-time video surveillance camera output to the control room or other continuously manned location where the camera images may be viewed at any time.

29. *Flare vent gas, steam assist and air assist flow rate monitoring.* The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare header or headers that feed the flare as well as any supplemental natural gas used. Different flow monitoring methods may be used to measure different gaseous streams that make up the flare vent gas provided that the flow rates of all gas streams that contribute to the flare vent gas are determined. If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare. If pre-mix assist air and perimeter assist are both used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.

(a) The flow rate monitoring systems must be able to correct for the temperature and pressure of the system and output parameters in standard conditions (*i.e.,* a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere).

(b) Mass flow monitors may be used for determining volumetric flow rate of flare vent gas provided the molecular weight of the flare vent gas is determined using compositional analysis as specified in paragraph (j) of §63.670 so that the mass flow rate can be converted to volumetric flow at standard conditions using the following equation.

$$Q_{vol} = \frac{Q_{mass} \times 385.3}{MWt}$$

Where:
Qvol = Volumetric flow rate, standard cubic feet per second.
Qmass = Mass flow rate, pounds per second.
385.3 = Conversion factor, standard cubic feet per pound-mole.

MWt = Molecular weight of the gas at the flow monitoring location, pounds per pound-mole.

(c) Mass flow monitors may be used for determining volumetric flow rate of assist air or assist steam. Use equation in paragraph (i)(2) of §63.670 to convert mass flow rates to volumetric flow rates. Use a molecular weight of 18 pounds per pound-mole for assist steam and use a molecular weight of 29 pounds per pound-mole for assist air.

(d) Continuous pressure/temperature monitoring system(s) and appropriate engineering calculations may be used in lieu of a continuous volumetric flow monitoring systems provided the molecular weight of the gas is known. For assist steam, use a molecular weight of 18 pounds per pound-mole. For assist air, use a molecular weight of 29 pounds per pound-mole. For flare vent gas, molecular weight must be determined using compositional analysis as specified in paragraph (j) of §63.670.

30. *Flare vent gas composition monitoring.* The owner or operator shall determine the concentration of individual components in the flare vent gas using either the methods provided in paragraph (j)(1) or (2) of §63.670, to assess compliance with the operating limits in paragraph (e) of §63.670 and, if applicable, paragraphs (d) and (f) of §63.670 . Alternatively, the owner or operator may elect to directly monitor the net heating value of the flare vent gas following the methods provided in paragraphs (j)(3) of §63.670 and, if desired, may directly measure the hydrogen concentration in the flare vent gas following the methods provided in paragraphs (j)(4) of §63.670 . The owner or operator may elect to use different monitoring methods for different gaseous streams that make up the flare vent gas using different methods provided the composition or net heating value of all gas streams that contribute to the flare vent gas are determined.

(a) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring (*i.e.,* at least once every 15-minutes), calculating, and recording the individual component concentrations present in the flare vent gas.

(b) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, and maintain a grab sampling system capable of collecting an evacuated canister sample for subsequent compositional analysis at least once every eight hours while there is flow of regulated material to the flare. Subsequent compositional analysis of the samples must be performed according to Method 18 of 40 CFR part 60, appendix A-6, ASTM D6420-99 (Reapproved 2010), ASTM D1945-03 (Reapproved 2010), ASTM D1945-14 or ASTM UOP539-12 (all incorporated by reference - see § 63.14).

(c) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a calorimeter capable of continuously measuring, calculating, and recording NHVvg at standard conditions.

(d) If the owner or operator uses a continuous net heating value monitor according to paragraph (j)(3) of §63.670 , the owner or operator may, at their discretion, install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the hydrogen concentration in the flare vent gas.

(e) Direct compositional or net heating value monitoring is not required for purchased (“pipeline quality”) natural gas streams. The net heating value of purchased natural gas streams may be determined using annual or more frequent grab sampling at any one representative location. Alternatively, the net heating value of any purchased natural gas stream can be assumed to be 920 Btu/scf.

(f) Direct compositional or net heating value monitoring is not required for gas streams that have been demonstrated to have consistent composition (or a fixed minimum net heating value) according to the methods in paragraphs (j)(6)(i) through (v) of §63.670 .

(i) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(A) A description of the flare gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the flare gas stream/system and the affected flare(s) to be considered;

(B) A statement that there are no crossover or entry points to be introduced into the flare gas stream/system (this should be shown in the piping diagrams) prior to the point where the flow rate of the gas streams is measured;

(C) An explanation of the conditions that ensure that the flare gas net heating value is consistent and, if flare gas net heating value is expected to vary (*e.g.,* due to product loading of different material), the conditions expected to produce the flare gas with the lowest net heating value;

(D) The supporting test results from sampling the requested flare gas stream/system for the net heating value. Sampling data must include, at minimum, 2 weeks of daily measurement values (14 grab samples) for frequently operated flare gas streams/systems; for infrequently operated flare gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. If the flare gas stream composition can vary, samples must be taken during those conditions expected to result in lowest net heating value identified in paragraph (j)(6)(i)(C) of §63.670 . The owner or operator shall determine net heating value for the gas stream using either gas composition analysis or net heating value monitor (with optional hydrogen concentration analyzer) according to the method provided in paragraph (l) of §63.670 ; and

(E) A description of how the 2 weeks (or seven samples for infrequently operated flare gas streams/systems) of monitoring results compares to the typical range of net heating values expected for the flare gas stream/system going to the affected flare (*e.g.,* “the samples are representative of typical operating conditions of the flare gas stream going to the loading rack flare” or “the samples are representative of conditions expected to yield the lowest net heating value of the flare gas stream going to the loading rack flare”).

(F) The net heating value to be used for all flows of the flare vent gas from the flare gas stream/system covered in the application. A single net heating value must be assigned to the flare vent gas either by selecting the lowest net heating value measured in the sampling program or by determining the 95th percent confidence interval on the mean value of all samples collected using the t-distribution statistic (which is 1.943 for 7 grab samples or 1.771 for 14 grab samples).

(ii) The effective date of the exemption is the date of submission of the information required in paragraph (j)(6)(i) of §63.670 .

(iii) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (*e.g.,* the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in paragraph (j)(6)(iii)(A), (B), or (C) of §63.670 .

(A) If the operation change results in a flare vent gas net heating value that is still within the range of net heating values included in the original application, the owner or

operator shall determine the net heating value on a grab sample and record the results as proof that the net heating value assigned to the vent gas stream in the original application is still appropriate.

(B) If the operation change results in a flare vent gas net heating value that is lower than the net heating value assigned to the vent gas stream in the original application, the owner or operator may submit new information following the procedures of paragraph (j)(6)(i) of §63.670 within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(C) If the operation change results in a flare vent gas net heating value has greater variability in the flare gas stream/system such the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin monitoring the composition or net heat content of the flare vent gas stream using the methods in §63.670 (*i.e.,* grab samples every 8 hours until such time a continuous monitor, if elected, is installed).

31. *Calculation methods for cumulative flow rates and determining compliance with Vtip operating limits*. The owner or operator shall determine Vtip on a 15-minute block average basis according to the following requirements.

(a) The owner or operator shall use design and engineering principles to determine the unobstructed cross sectional area of the flare tip. The unobstructed cross sectional area of the flare tip is the total tip area that vent gas can pass through. This area does not include any stability tabs, stability rings, and upper steam or air tubes because flare vent gas does not exit through them.

(b) The owner or operator shall determine the cumulative volumetric flow of flare vent gas for each 15-minute block average period using the data from the continuous flow monitoring system required in paragraph (i) of §63.670 according to the following requirements, as applicable. If desired, the cumulative flow rate for a 15-minute block period only needs to include flow during those periods when regulated material is sent to the flare, but owners or operators may elect to calculate the cumulative flow rates across the entire 15-minute block period for any 15-minute block period where there is regulated material flow to the flare.

(i) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block average flow volumes.

(ii) If continuous pressure/temperature monitoring system(s) and engineering calculations are used as allowed under paragraph (i)(4) of §63.670 , the owner or operator shall, at a minimum, determine the 15-minute block average temperature and pressure from the monitoring system and use those values to perform the engineering calculations to determine the cumulative flow over the 15-minute block average period. Alternatively, the owner or operator may divide the 15-minute block average period into equal duration subperiods(*e.g.*, three 5-minute periods) and determine the average temperature and pressure for each subperiod, perform engineering calculations to determine the flow for each subperiod, then add the volumetric flows for the subperiods to determine the cumulative volumetric flow of vent gas for the 15-minute block average period.

(c) The 15-minute block average Vtip shall be calculated using the following equation.

$$V_{tip} = \frac{Q_{cum}}{Area \times 900}$$

Where:
Vtip = Flare tip velocity, feet per second.
Qcum = Cumulative volumetric flow over 15-minute block average period, actual cubic feet.
Area = Unobstructed area of the flare tip, square feet.
900 = Conversion factor, seconds per 15-minute block average.

(d) If the owner or operator chooses to comply with paragraph (d)(2) of §63.670 , the owner or operator shall also determine the net heating value of the flare vent gas following the requirements in paragraphs (j) and (l) of §63.670 and calculate Vmax using the equation in paragraph (d)(2) of §63.670 in order to compare Vtip to Vmax on a 15-minute block average basis.

32. *Calculation methods for determining flare vent gas net heating value.* The owner or operator shall determine the net heating value of the flare vent gas (NHVvg) based on the composition monitoring data on a 15-minute block average basis according to the following requirements.

(a) If compositional analysis data are collected as provided in paragraph (j)(1) or (2) of §63.670 , the owner or operator shall determine NHVvg of a specific sample by using the following equation.

$$NHV_{vg} = \sum_{i=1}^{n} x_i NHV_i$$

Where:
NHVvg = Net heating value of flare vent gas, Btu/scf.
i = Individual component in flare vent gas.
n = Number of components in flare vent gas.
xi = Concentration of component i in flare vent gas, volume fraction.
NHVi = Net heating value of component i according to table 12 of this subpart, Btu/scf. If the component is not specified in table 12 of this subpart, the heats of combustion may be determined using any published values where the net enthalpy per mole of offgas is based on combustion at 25 °C and 1 atmosphere (or constant pressure) with offgas water in the gaseous state, but the standard temperature for determining the volume corresponding to one mole of vent gas is 20 °C.

(b) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 but a hydrogen concentration monitor is not used, the owner or operator shall use the direct output of the monitoring system(s) (in Btu/scf) to determine the NHVvg for the sample.

(c) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 and hydrogen concentration monitoring data are collected as provided in paragraph (j)(4) of §63.670 , the owner or operator shall use the following equation to determine NHVvg for each sample measured via the net heating value monitoring system.

*NHV*vg = *NHV*measured 938*x*H2

Where:
NHVvg = Net heating value of flare vent gas, Btu/scf.
NHVmeasured = Net heating value of flare vent gas stream as measured by the continuous net heating value monitoring system, Btu/scf.
xH2 = Concentration of hydrogen in flare vent gas at the time the sample was input into the net heating value monitoring system, volume fraction.
938 = Net correction for the measured heating value of hydrogen (1,212 − 274), Btu/scf.

(d) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block averages.

(e) When a continuous monitoring system is used as provided in paragraph (j)(1) or (3) of §63.670 and, if applicable, paragraph (j)(4) of §63.670 , the owner or operator may elect to determine the 15-minute block average NHVvg using either the calculation methods in paragraph (l)(5)(i) of §63.670 or the calculation methods in paragraph (l)(5)(ii) of §63.670 . The owner or operator may choose to comply using the calculation methods in paragraph (l)(5)(i) of §63.670 for some flares at the petroleum refinery and comply using the calculation methods (l)(5)(ii) of §63.670 for other flares. However, for each flare, the owner or operator must elect one calculation method that will apply at all times, and use that method for all continuously monitored flare vent streams associated with that flare. If the owner or operator intends to change the calculation method that applies to a flare, the owner or operator must notify AMS and EPA 30 days in advance of such a change.

(i) *Feed-forward calculation method.* When calculating NHVvg for a specific 15-minute block:

(A) Use the results from the first sample collected during an event, (for periodic flare vent gas flow events) for the first 15-minute block associated with that event.

(B) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the second 15-minute block associated with that event.

(C) For all other cases, use the results that are available from the most recent sample prior to the 15-minute block period for that 15-minute block period for all flare vent gas steams. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:45 a.m. to 1:00 a.m.

(ii) *Direct calculation method.* When calculating NHVvg for a specific 15-minute block:

(A) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the first 15-minute block associated with that event.

(B) For all other cases, use the arithmetic average of all NHVvg measurement data results that become available during a 15-minute block to calculate the 15-minute block average for that period. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:30 a.m. to 12:45 a.m.

(f) When grab samples are used to determine flare vent gas composition:

(i) Use the analytical results from the first grab sample collected for an event for all 15-minute periods from the start of the event through the 15-minute block prior to the 15-minute block in which a subsequent grab sample is collected.

(ii) Use the results from subsequent grab sampling events for all 15 minute periods starting with the 15-minute block in which the sample was collected and ending with the 15-minute block prior to the 15-minute block in which the next grab sample is collected. For the purpose of this requirement, use the time the sample was collected rather than the time the analytical results become available.

(g) If the owner or operator monitors separate gas streams that combine to comprise the total flare vent gas flow, the 15-minute block average net heating value shall be determined separately for each measurement location according to the methods in paragraphs (l)(1) through (6) of §63.670 and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

33. *Calculation methods for determining combustion zone net heating value.* The owner or operator shall determine the net heating value of the combustion zone gas (NHVcz) as specified in paragraph (m)(1) or (2) of §63.670, as applicable.

(a) Except as specified in paragraph (m)(2) of §63.670 , determine the 15-minute block average NHVcz based on the 15-minute block average vent gas and assist gas flow rates using the following equation. For periods when there is no assist steam flow or premix assist air flow, NHVcz = NHVvg.

$$NHV_{cz} = \frac{Q_{vg} \times NHV_{vg}}{\left(Q_{vg} + Q_{s} + Q_{a,premix}\right)}$$

Where:
NHVcz = Net heating value of combustion zone gas, Btu/scf.
NHVvg = Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.
Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.
Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

(b) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVcz using the following equation.

$$NHV_{cz} = \frac{\left(Q_{vg} - Q_{NG2} + Q_{NG1}\right) \times NHV_{vg} + \left(Q_{NG2} - Q_{NG1}\right) \times NHV_{NG}}{\left(Q_{vg} + Q_{s} + Q_{a,premix}\right)}$$

Where:
NHVcz = Net heating value of combustion zone gas, Btu/scf.
NHVvg = Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.
QNG2 = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.
QNG1 = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1=QNG2.
NHVNG = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

34. *Calculation methods for determining the net heating value dilution parameter*. The owner or operator shall determine the net heating value dilution parameter (NHVdil) as specified in paragraph (n)(1) or (2) of §63.670, as applicable.

(a) Except as specified in paragraph (n)(2) of §63.670 , determine the 15-minute block average NHVdil based on the 15-minute block average vent gas and perimeter assist air flow rates using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{Q_{vg} \times Diam \times NHV_{vg}}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHVdil = Net heating value dilution parameter, Btu/ft 2.

NHVvg = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as

$Diam = 2 \times \sqrt{Area/\pi}$.

Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

Qa,perimeter = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

(b) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVdil using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{\left[(Q_{vg} - Q_{NG2} + Q_{NG1}) \times NHV_{vg} + (Q_{NG2} - Q_{NG1}) \times NHV_{NG}\right] \times Diam}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHVdil = Net heating value dilution parameter, Btu/ft 2.

NHVvg = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

QNG2 = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.

QNG1 = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1 =QNG2.

NHVNG = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as

$Diam = 2 \times \sqrt{Area/\pi}$.

Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

Qa,perimeter = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

35. *Emergency flaring provisions*. The owner or operator of a flare that has the potential to operate above its smokeless capacity under any circumstance shall comply with the provisions in paragraphs (o)(1) through (8) of §63.670 .
    (a) Develop a flare management plan to minimize flaring during periods of startup, shutdown, or emergency releases. The flare management plan must include the information described in paragraphs (o)(1)(i) through (vii) of §63.670 .
        (i) A listing of all refinery process units, ancillary equipment, and fuel gas systems connected to the flare for each affected flare.
        (ii) An assessment of whether discharges to affected flares from these process units, ancillary equipment and fuel gas systems can be minimized or prevented during periods of startup, shutdown, or emergency releases. The flare minimization assessment must (at a minimum) consider the items in paragraphs (o)(1)(ii)(A) through (C) of §63.670 . The assessment must provide clear rationale in terms of costs (capital and annual operating), natural gas offset credits (if applicable), technical feasibility, secondary environmental impacts and safety considerations for the selected minimization alternative(s) or a statement, with justifications, that flow reduction could not be achieved. Based upon the assessment, each owner or operator of an affected flare shall identify the minimization alternatives that it has implemented by the due date of the flare management plan and shall include a schedule for the prompt implementation of any selected measures that cannot reasonably be completed as of that date.
            (A) Modification in startup and shutdown procedures to reduce the quantity of process gas discharge to the flare.
            (B) Implementation of prevention measures listed for pressure relief devices in § 63.648(j)(5) for each pressure relief device that can discharge to the flare.
            (C) Installation of a flare gas recovery system or, for facilities that are fuel gas rich, a flare gas recovery system and a co-generation unit or combined heat and power unit.
        (iii) A description of each affected flare containing the information in paragraphs (o)(1)(iii)(A) through (G) of §63.670 .

(A) A general description of the flare, including whether it is a ground flare or elevated (including height), the type of assist system (e.g., air, steam, pressure, non-assisted), whether the flare is used on a routine basis or if it is only used during periods of startup, shutdown or emergency release, and whether the flare is equipped with a flare gas recovery system.
(B) The smokeless capacity of the flare based on design conditions. Note: A single value must be provided for the smokeless capacity of the flare.
(C) The maximum vent gas flow rate (hydraulic load capacity).
(D) The maximum supplemental gas flow rate.
(E) For flares that receive assist steam, the minimum total steam rate and the maximum total steam rate.
(F) For flares that receive assist air, an indication of whether the fan/blower is single speed, multi-fixed speed (e.g., high, medium, and low speeds), or variable speeds. For fans/blowers with fixed speeds, provide the estimated assist air flow rate at each fixed speed. For variable speeds, provide the design fan curve (e.g., air flow rate as a function of power input).
(G) Simple process flow diagram showing the locations of the flare following components of the flare: Flare tip (date installed, manufacturer, nominal and effective tip diameter, tip drawing); knockout or surge drum(s) or pot(s) (including dimensions and design capacities); flare header(s) and subheader(s); assist system; and ignition system.

(iv) Description and simple process flow diagram showing all gas lines (including flare waste gas, purge or sweep gas (as applicable), supplemental gas) that are associated with the flare. For purge, sweep, supplemental gas, identify the type of gas used. Designate which lines are exempt from composition or net heating value monitoring and why (e.g., natural gas, gas streams that have been demonstrated to have consistent composition, pilot gas). Designate which lines are monitored and identify on the process flow diagram the location and type of each monitor. Designate the pressure relief devices that are vented to the flare.

(v) For each flow rate, gas composition, net heating value or hydrogen concentration monitor identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of the manufacturer's specifications, including, but not limited to, make, model, type, range, precision, accuracy, calibration, maintenance and quality assurance procedures.

(vi) For each pressure relief device vented to the flare identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of each pressure release device, including type of relief device (rupture disc, valve type) diameter of the relief device opening, set pressure of the relief device and listing of the prevention measures implemented. This information may be maintained in an electronic database on-site and does not need to be submitted as part of the flare management plan unless requested to do so by AMS and EPA.

(vii) Procedures to minimize or eliminate discharges to the flare during the planned startup and shutdown of the refinery process units and ancillary equipment that are connected to the affected flare, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(b) Each owner or operator required to develop and implement a written flare management plan as described in paragraph (o)(1) of §63.670 must submit the plan to AMS and EPA as

described in paragraphs (o)(2)(i) through (iii) of §63.670 .

(i) The owner or operator must develop and implement the flare management plan no later than January 30, 2019 or at startup for a new flare that commenced construction on or after February 1, 2016.

(ii) The owner or operator must comply with the plan as submitted by the date specified in paragraph (o)(2)(i) of §63.670 . The plan should be updated periodically to account for changes in the operation of the flare, such as new connections to the flare or the installation of a flare gas recovery system, but the plan need be re-submitted to AMS and EPA only if the owner or operator alters the design smokeless capacity of the flare. The owner or operator must comply with the updated plan as submitted.

(iii) All versions of the plan submitted to AMS and EPA shall also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to refineryRTR@epa.gov.

(c) The owner or operator of a flare subject to this subpart shall conduct a root cause analysis and a corrective action analysis for each flow event that contains regulated material and that meets either the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(i) The vent gas flow rate exceeds the smokeless capacity of the flare and visible emissions are present from the flare for more than 5 minutes during any 2 consecutive hours during the release event.

(ii) The vent gas flow rate exceeds the smokeless capacity of the flare and the 15-minute block average flare tip velocity exceeds the maximum flare tip velocity determined using the methods in paragraph (d)(2) of §63.670 .

(d) A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a flare flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (o)(4)(i) through (v) of §63.670 .

(i) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event that meets both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 .

(ii) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event regardless of the number of 15-minute block periods in which the flare tip velocity was exceeded or the number of 2 hour periods that contain more the 5 minutes of visible emissions.

(iii) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares that are operated in series (i.e., cascaded flare systems) to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(iv) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 , regardless of the configuration of the flares, if the root cause is reasonably expected to be a force majeure event, as defined in this subpart.

(v) Except as provided in paragraphs (o)(4)(iii) and (iv) of §63.670 , if more than one flare

has a flow event that meets the criteria in paragraph (o)(3)(i) or (ii) of §63.670 during the same time period, an initial root cause analysis shall be conducted separately for each flare that has a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . If the initial root cause analysis indicates that the flow events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(e) Each owner or operator of a flare required to conduct a root cause analysis and corrective action analysis as specified in paragraphs (o)(3) and (4) of §63.670 shall implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (o)(5)(i) through (iii) of §63.670 .

(i) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that no corrective action should be implemented, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the event.

(ii) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(iii) No later than 45 days following the event for which a root cause and corrective action analyses were required, the owner or operator shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(f) The owner or operator shall determine the total number of events for which a root cause and corrective action analyses was required during the calendar year for each affected flare separately for events meeting the criteria in paragraph (o)(3)(i) of §63.670 and those meeting the criteria in paragraph (o)(3)(ii) of §63.670 . For the purpose of this requirement, a single root cause analysis conducted for an event that met both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 would be counted as an event under each of the separate criteria counts for that flare. Additionally, if a single root cause analysis was conducted for an event that caused multiple flares to meet the criteria in paragraph (o)(3)(i) or (ii) of §63.670 , that event would count as an event for each of the flares for each criteria in paragraph (o)(3) of §63.670 that was met during that event. The owner or operator shall also determine the total number of events for which a root cause and correct action analyses was required and the analyses concluded that the root cause was a force majeure event, as defined in this subpart.

(g) The following events would be a violation of this emergency flaring work practice standard.

(i) Any flow event for which a root cause analysis was required and the root cause was determined to be operator error or poor maintenance.

(ii) Two visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(iii) Two flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(iv) Three visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3

calendar year period for any reason.

(v) Three flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for any reason.

36. *Flare monitoring records*. The owner or operator shall keep the records specified in § 63.655(i)(9).
37. *Reporting*. The owner or operator shall comply with the reporting requirements specified in § 63.655(g)(11).

Requirements for flare monitoring systems [40 CFR §63.671]

38. *Operation of CPMS*. For each CPMS installed to comply with applicable provisions in § 63.670, the owner or operator shall install, operate, calibrate, and maintain the CPMS as specified in paragraphs (a)(1) through (8) of §63.671 .
    (a) Except for CPMS installed for pilot flame monitoring, all monitoring equipment must meet the applicable minimum accuracy, calibration and quality control requirements specified in table 13 of this subpart.
    (b) The owner or operator shall ensure the readout (that portion of the CPMS that provides a visual display or record) or other indication of the monitored operating parameter from any CPMS required for compliance is readily accessible onsite for operational control or inspection by the operator of the source.
    (c) All CPMS must complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.
    (d) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall operate all CPMS and collect data continuously at all times when regulated emissions are routed to the flare.
    (e) The owner or operator shall operate, maintain, and calibrate each CPMS according to the CPMS monitoring plan specified in paragraph (b) of §63.671 .
    (f) For each CPMS except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraph (c) of §63.671 .
    (g) The owner or operator shall reduce data from a CPMS as specified in paragraph (d) of §63.671.
    (h) The CPMS must be capable of measuring the appropriate parameter over the range of values expected for that measurement location. The data recording system associated with each CPMS must have a resolution that is equal to or better than the required system accuracy.
39. *CPMS monitoring plan.* The owner or operator shall develop and implement a CPMS quality control program documented in a CPMS monitoring plan that covers each flare subject to the provisions in 1 and each CPMS installed to comply with applicable provisions in 1. The owner or operator shall have the CPMS monitoring plan readily available on-site at all times and shall submit a copy of the CPMS monitoring plan to AMS and EPA upon request by AMS and EPA. The CPMS monitoring plan must contain the information listed in paragraphs (b)(1) through (5) of §63.671 .
    (a) Identification of the specific flare being monitored and the flare type (air-assisted only, steam-assisted only, air- and steam-assisted, pressure-assisted, or non-assisted).

(b) Identification of the parameter to be monitored by the CPMS and the expected parameter range, including worst case and normal operation.

(c) Description of the monitoring equipment, including the information specified in paragraphs (b)(3)(i) through (vii) of §63.670 .
- (i) Manufacturer and model number for all monitoring equipment components installed to comply with applicable provisions in § 63.670.
- (ii) Performance specifications, as provided by the manufacturer and any differences expected for this installation and operation.
- (iii) The location of the CPMS sampling probe or other interface and a justification of how the location meets the requirements of paragraph (a)(1) of §63.670 .
- (iv) Placement of the CPMS readout, or other indication of parameter values, indicating how the location meets the requirements of paragraph (a)(2) of §63.670 .
- (v) Span of the CPMS. The span of the CPMS sensor and analyzer must encompass the full range of all expected values.
- (vi) How data outside of the span of the CPMS will be handled and the corrective action that will be taken to reduce and eliminate such occurrences in the future.
- (vii) Identification of the parameter detected by the parametric signal analyzer and the algorithm used to convert these values into the operating parameter monitored to demonstrate compliance, if the parameter detected is different from the operating parameter monitored.

(d) Description of the data collection and reduction systems, including the information specified in paragraphs (b)(4)(i) through (iii) of §63.670 .
- (i) A copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard and to calculate the applicable averages.
- (ii) Identification of whether the algorithm excludes data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments.
- (iii) If the data acquisition algorithm does not exclude data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments, a description of the procedure for excluding this data when the averages calculated as specified in paragraph (e) of §63.670 are determined.

(e) Routine quality control and assurance procedures, including descriptions of the procedures listed in paragraphs (b)(5)(i) through (vi) of this section and a schedule for conducting these procedures. The routine procedures must provide an assessment of CPMS performance.
- (i) Initial and subsequent calibration of the CPMS and acceptance criteria.
- (ii) Determination and adjustment of the calibration drift of the CPMS.
- (iii) Daily checks for indications that the system is responding. If the CPMS system includes an internal system check, the owner or operator may use the results to verify the system is responding, as long as the system provides an alarm to the owner or operator or the owner or operator checks the internal system results daily for proper operation and the results are recorded.
- (iv) Preventive maintenance of the CPMS, including spare parts inventory.
- (v) Data recording, calculations and reporting.

(vi) Program of corrective action for a CPMS that is not operating properly.

40. *Out-of-control periods.* For each CPMS installed to comply with applicable provisions in § 63.670 except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraphs (c)(1) and (2) of this section.
    (a) A CPMS is out-of-control if the zero (low-level), mid-level (if applicable) or high-level calibration drift exceeds two times the accuracy requirement of table 13 of this subpart.
    (b) When the CPMS is out of control, the owner or operator shall take the necessary corrective action and repeat all necessary tests that indicate the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established in this section is conducted. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. The owner or operator shall not use data recorded during periods the CPMS is out of control in data averages and calculations, used to report emissions or operating levels, as specified in paragraph (d)(3) of this section.
41. *CPMS data reduction.* The owner or operator shall reduce data from a CPMS installed to comply with applicable provisions in § 63.670 as specified in paragraphs (d)(1) through (3) of this section.
    (a) The owner or operator may round the data to the same number of significant digits used in that operating limit.
    (b) Periods of non-operation of the process unit (or portion thereof) resulting in cessation of the emissions to which the monitoring applies must not be included in the 15-minute block averages.
    (c) Periods when the CPMS is out of control must not be included in the 15-minute block averages.
42. *Additional requirements for gas chromatographs.* For monitors used to determine compositional analysis for net heating value per § 63.670(j)(1), the gas chromatograph must also meet the requirements of paragraphs (e)(1) through (3) of this section.
    (a) The quality assurance requirements are in table 13 of this subpart.
    (b) The calibration gases must meet one of the following options:
        (i) The owner or operator must use a calibration gas or multiple gases that include all of compounds listed in paragraphs (e)(2)(i)(A) through (K) of this section that may be reasonably expected to exist in the flare gas stream and optionally include any of the compounds listed in paragraphs (e)(2)(i)(L) through (O) of this section. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.
            (A) Hydrogen.
            (B) Methane.
            (C) Ethane.
            (D) Ethylene.
            (E) Propane.
            (F) Propylene.
            (G) n-Butane.
            (H) iso-Butane.

(I) Butene (general). It is not necessary to separately speciate butene isomers, but the net heating value of trans-butene must be used for co-eluting butene isomers.
(J) 1,3-Butadiene. It is not necessary to separately speciate butadiene isomers, but you must use the response factor and net heating value of 1,3-butadiene for co-eluting butadiene isomers.
(K) n-Pentane. Use the response factor for n-pentane to quantify all C5 hydrocarbons.
(L) Acetylene (optional).
(M) Carbon monoxide (optional).
(N) Propadiene (optional).
(O) Hydrogen sulfide (optional).

(ii) The owner or operator must use a surrogate calibration gas consisting of hydrogen and C1 through C5 normal hydrocarbons. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.

(c) If the owner or operator chooses to use a surrogate calibration gas under paragraph (e)(2)(ii) of this section, the owner or operator must comply with paragraphs (e)(3)(i) and (ii) of this section.
(i) Use the response factor for the nearest normal hydrocarbon (i.e., n-alkane) in the calibration mixture to quantify unknown components detected in the analysis.
(ii) Use the response factor for n-pentane to quantify unknown components detected in the analysis that elute after n-pentane.

Monitoring Requirements

43. The Permittee shall monitor the following:
(a) The Permittee shall monitor the fuel type and fuels usage and sulfur content of the fuel burned for each flare pilot on a daily basis. [SO_2 Operating Permit]
(b) The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO_2 emissions using the same analysis and calculations used in the modeling demonstration. [SO_2 Operating Permit]
(c) SO_2 Emission Calculations for the Acid Gas (AG) Flaring [Consent Decree Order 05-CV-2866]
(i) The quantity of SO_2 emissions resulting from AG Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR] [TD] [ConcH_2S] [8.44×10^{-5}].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Acid Gas was first flared.

(ii) The rate of SO_2 emissions from AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

ER = [FR] [ConcH_2S] [0.169].

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

where

ER = Emission Rate in pounds of SO_2 per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour

TD = Total Duration of Flaring Incident in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment.

Recordkeeping Requirements

44. The Permittee shall keep the following records:
    (a) For all flares, continuous records of presence of pilot flame.
    (b) For all flares record the following:
        (i) Fuel types, fuel usage, and sulfur analysis of the fuel burned in the pilots on a daily basis. [SO_2 Operating Permit No. SO2-95-039]
    (c) The sulfur content of the natural gas burnt in the flare pilot may be based on AP-42 factors for combustion sources.
    (d) Occurrences when the feed to the flare has exceeded the worst case analysis for SO_2 in the modeling demonstration including the date, time, duration and calculated emissions of the exceedance. [SO2 Operating Permit No. SO2-95-039]
        (i) Date, time, duration, and calculated emissions of any exceedance.
        (ii) SO_2 emission for each Acid Gas or Tail Gas Flaring incident. [Consent Decree Order 05-CV-2866]
    (b) SO_2 emission for each Hydrocarbon Flaring Incident. SO_2 emission calculations for each Hydrocarbon flaring Incident shall use AG Flaring Incident formulas. [Consent Decree Order 05-CV-2866]

Reporting Requirements

45. The Permittee shall submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

46. No later than 45 days following the end of an Acid Gas Flaring Incident occurring after Date of Entry, the Permittee shall submit to AMS and EPA a report with following: [Consent Decree Order 05-CV-2866]

    (a) The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, the Permittee shall set forth the starting and ending dates and times of each release;

    (b) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

    (c) The steps, if any, that the Permittee took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

    (d) A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;

    (e) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If the Permittee concludes that corrective action(s) is (are) required the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If the Permittee concludes that corrective action is not required, the report shall explain the basis for that conclusion;

    (f) A statement that:

        (i) specifically identifies each of the grounds for stipulated penalties as specified in Paragraphs 56 and 57 of the Consent Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds;

    (g) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 53.d and 53.e of the Consent Decree shall be submitted; provided, however, that if the Permittee has not submitted a report or a series of reports containing the information required to be submitted within the 45-day time period set forth (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section XI of the Consent Decree shall apply, but the Permittee shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Sunoco's failure to submit the report required under this Paragraph within the time frame set forth.

(h) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), the Permittee shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

47. For each Tail Gas Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) of the facility TV Operating permit. [Consent Decree Order 05-CV-2866]

48. For each Hydrocarbon Flaring Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) of the facility TV Operating permit. and shall: [Consent Decree Order 05-CV-2866]

(i) Submit the Hydrocarbon Flaring Incident reports as part of the Semi-Annual Progress Reports in accordance with Section D.1(e)(6) of the facility TV Operating permit.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit Nos.: IP18-000373-374 Date: November 9, 2018

Plant ID: 01501

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145
Attention: Janet Ferris
Environmental Manager

Source: PES Philadelphia Refinery
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on November 9, 2018 approved plans for the following:

1) Installation and temporary operation of the air following contamination device(s):

Installation Permit No(s).	Source Description and Location	Manufacturer / Manufacture Date	Model No	Serial No.	Rated Capacity HP= Horsepower	Type of fuel
18-000373	Flood Control RICE For flood control at GP 2nd and J	John Deere / 2012	6068HF 285	PE6068L209 665	147 HP	ULSD
18-000374	Flood Control RICE For flood control at Girard point 2-separtor	Caterpillar/2010	C9	JSC20784	275HP	Diesel (ULSD)

Hp – Horsepower
GP – Girard Point
kW - Kilowatt
WWTP – Wastewater Treatment Plant
RICE - Reciprocating Internal Combustion Engine
ULSD – Ultra Low Sulfur Diesel

This installation permit expires on November 9, 2019.
This Installation Permit is subject to conditions prescribed in the attachment.

Rahel Gebrekidan

_____
Rahel Gebrekidan
(215) 685-9429

1. Each flood control RICE shall be installed, operated, and maintained in accordance with both the manufacturer's specification and the specifications in the application (as approved herein).

Emission Limits

2. Nitrogen Oxides (NOx) emissions from each flood control RICE shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period. [Assures compliance with the Plan Approval Exemption, 25 Pa Code § 127.14(a)(8)]
3. Carbon Monoxide (CO) emissions from each flood control RICE shall not exceed 1% by volume of exhaust gases. [AMR VIII]
4. Particulate Matter (PM) emissions from each flood control RICE shall not exceed 0.04 grain per dry standard cubic foot. [25 Pa Code §123.13(c)(1)(i)]
5. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour;
   (b) Equal to or greater than 60% at any time.
6. In addition to the emission requirements of Conditions 2 thru 5, the 147 hp flood control RICE shall comply with the following emission requirements:
   (a) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]
   (b) CO emissions shall not exceed 5.0 g/kW-hr or 3.7 g/hp-hr; [Tier 3 Engine]
   (c) PM emissions shall not exceed 0.30 g/kW-hr or 0.23 g/hp-hr. [Tier 3 Engine]
7. In addition to the emission requirements of Conditions 2 thru 5, the 275 hp flood control RICE shall comply with the following emission requirements:
   (a) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]
   (b) CO emissions shall not exceed 3.5 g/kW-hr or 2.6 g/hp-hr; [Tier 3 Engine]
   (c) PM emissions shall not exceed 0.20 g/kW-hr or 0.15 g/hp-hr. [Tier 3 Engine]

Work Standard Practices

8. Each flood control RICE shall only burn ultra low sulfur diesel fuel. The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm). [Application]
9. Each flood control RICE shall comply with the following:
   (a) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.
   (b) Each flood control RICE may be operated during storm events for emergency water pumping to control flood.
   (c) Each flood control RICE may be operated for the purposes specified in Conditions 9(a) for up to 100 hours per calendar year.
   (d) Each flood control RICE shall operate less than 500 hours per rolling 12 month period for all operation. [Assures compliance with Condition 2]:

Monitoring and Recordkeeping Requirements

10. PES shall keep records of the following:
    (a) NOx emission calculations or verification to demonstrate compliance with Condition 2.

Verification may be based on operating hours and manufacturer's specifications or other AMS-approved emission factors;

(b) Fuel type used and fuel manifests to demonstrate compliance with Condition 8;

(c) Operating hours of each RICE in accordance with Conditions 9(a).

(d) EPA Tier rating of each temporary RICE.

11. All records shall be kept for five (5) years and be produced upon request by Air Management Services.

cc: AMS Conformance File

Attachment H
Most Recent Annual Title V
Compliance Certification

Philadelphia Refining Complex
Environmental Department

Philadelphia Energy Solutions
Refining and Marketing LLC
3144 W Passyunk Avenue
Philadelphia, PA 19145-5208
215-339-2000

PHILADELPHIA ENERGY SOLUTIONS

Certified Mail 7016 1370 0000 9394 5823
Return Receipt Requested

February 27, 2018

Mr. Edward Wiener
Air Management Services
321 University Ave.
Philadelphia, PA 19104-4543

Re: 2017 Annual Compliance Certification Form - Philadelphia Refinery
Philadelphia Energy Solutions Refining and Marketing
Permit # V06-016: January 1, 2017 – December 31, 2017

Dear Sir:

Enclosed is the completed Annual Compliance Certification Form ("Certification") for the Philadelphia Energy Solutions Refining and Marketing, LLC (PES) Philadelphia Refinery. This Certification covers the calendar period January 1, 2017 through December 31, 2017. The enclosed Certification includes information that were previously disclosed in compliance and monitoring reports submitted to AMS, as well as a specific certification for each term and condition contained in the Title V Permit.

This Certification generally used the certification form as provided by AMS. To provide the most accurate and complete information, the last column ("Periods of Non-Compliance") includes a brief description of the reason for intermittent compliance.

For many terms in the Certification, PES listed as the "Means of Determining Compliance Status" the Facility's "work practices and procedures." PES has in place a variety of data collection and information reporting systems, as well as training programs and standard operating procedures, all specifically designed to ensure compliance with regulatory obligations, including the terms and conditions of this Permit.

The programs, practices, and procedures referenced in the Certification often go beyond those required by specific statutory, regulatory, or permit terms. For example, a key program is the Laboratory Information Management System, LIMS, which schedules, monitors, and maintains the records associated with the various sampling and testing procedures, and the NO_x budget program, which was designed in accordance with Pennsylvania NO_x Budget requirements. The facility's Leak Detection and Repair protocol using the LEAKDAS database is another process and tool used for LDAR compliance. Also critical is the data acquisition system, or "Pi". "Pi" is a computer program and operating system that collects and maintains the enormous amount of data that streams in daily from the emissions monitoring units, laboratory analyses, and a variety of other operation and maintenance data.

The facility utilizes "Pi" and "PKS" monitoring and control screens in the control rooms where operating conditions including permit requirements are monitored. Anomalies or trends detected in the operation are indicated in the control screens where operators can observe and make adjustments as necessary to avoid or minimize any potential periods of noncompliance.

In our compliance review for each term or condition of the Permit, we often relied upon the various practices and procedures in place at the Refinery that are usually monitored, performed, and maintained by the many programs and systems described above. Where reasonable, PES staff also conducted a review of specific records maintained for a particular term or submitted compliance report. For those terms where we could not reasonably review the original records within the scope of the compliance inquiry, our compliance systems including the facility's computer operating systems, provided a reliable method to determine compliance with the terms and conditions of the Permit, whether on a facility-wide or unit-specific basis.

Of course, not all permit terms and conditions are amenable to compliance assessment based on the numerical, objective standards that such procedures as emissions monitoring and laboratory analyses provide. For example, there is no emissions threshold or equipment standard by which to measure compliance with "good air pollution control practices." For these more general terms, we briefly described in the Certification the actions taken or procedures in place to ensure compliance with these terms and conditions.

Please contact Jacqueline Hom at (215) 339-2528 if you have any further questions in regards to this certification.

Sincerely,

Mark O. Brandon
Vice President and General Manager

MOB/jh
Enclosure

cc: Enforcement Programs Branch, 3AP20
United State Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

NORTHSTAR CONTRACTING GROUP, LLC

Title V Modification Application

NorthStar Facility
3144 Passyunk Avenue
Philadelphia, PA 19145

Prepared By:

Christie Heath – Managing Consultant

TRINITY CONSULTANTS
211 Welsh Pool Road
Suite 238
Exton, PA 19341
(610) 280-3902

October 15, 2020

Project 203902.0085

Trinity Consultants

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1. EXECUTIVE SUMMARY

Philadelphia Energy Solutions Refining and Marketing, LLC (PESRM) owns the former refinery complex located at 3144 Passyunk Ave, Philadelphia (comprised of two refineries individually referred to as Girard Point and Point Breeze) as well as the Schuylkill River Tank Farm (SRTF) located at 70th & Essington Avenue, Philadelphia. HRP Philadelphia Holdings, LLC (HRP), an affiliate of Hilco Redevelopment Partners, purchased PES Holdings, LLC, the sole owner of PESRM in a transaction that closed on June 26, 2020. All refining operations at the site ceased as of July 2019 in connection with bankruptcy, and the former refinery has remained inactive in anticipation of the site's redevelopment.

PESRM has contracted with NorthStar Contracting Group, Inc. (NorthStar) to decommission and demolish the refining equipment at the Philadelphia Refinery Complex. PESRM will remain the owner of the former refinery, but NorthStar is the new operator and will be responsible for air quality compliance for equipment remaining in operation under Title V Operating Permit No. V06-016 issued on July 18, 2014 and revised September 11, 2015 (PESRM TVOP). Therefore, per the administrative amendment application submitted under separate cover, NorthStar is now the operator of the NorthStar Facility.

At this time, the process of decommissioning and demolition of the refinery process equipment at the site is ongoing. However, certain emission sources will continue to operate in support of that work. These sources include boilers, flares, various storage tanks, degreasing vats, wastewater treatment operations, emergency generators, fire pumps, and miscellaneous internal combustion engines. As discussed in the August 19, 2020 letter from PESRM to Mr. Ed Wiener of Philadelphia Air Management Services (AMS), with this application PESRM/NorthStar requests that the PESRM TVOP be modified to only include the equipment supporting the demolition work by NorthStar. In addition, this modification application requests that several plan approvals and installation permits be incorporated into the PESRM TVOP.

It should be noted that the SRTF, Girard Point Docks, Point Breeze Docks, the North and South Rail Yards and certain pipelines, also owned by PESRM, is now operated by Host at Philadelphia, LLC (Host) per the administrative amendment application submitted electronically on September 22, 2020. A permit modification application addressing the emission sources operated by Host under Title V/State Only Operating Permit No. OP16-00027 ("SRTF TVOP") is being submitted under separate cover.

1.1 Application Overview

NorthStar is submitting this significant Title V modification application to revise the PESRM TVOP so that it aligns with current operations being performed by NorthStar at the site. Appendix B provides AMS's Title V application and Addendum 1 forms to request the required changes. Specifically, the Title V application forms are completed for the sources currently covered by plan approvals and installation permits that were never incorporated into the PESRM TVOP (as outlined in Section 2). However, existing and shutdown sources at the NorthStar Facility are not included in the application forms.

This application report is organized in the following sections to address the appropriate AMS air permitting requirements:

Section 2 – Background Information: This section provides detailed information regarding the existing PESRM TVOP and the changes requested in this modification application.
Section 3 – Regulatory Review: This section reviews the applicability of state and federal air quality regulations to current operations at the NorthStar Facility.

Section 4 – Summary of Proposed Changes: This section provides a detailed summary of the requested changes to the PESRM TVOP.

Appendices: The appendices included with this application contain the following:

Appendix A: Area Map
Appendix B: Title V Application and Addendum 1 Forms
Appendix C: Compliance Review Form
Appendix D: Redline Versions of the Permits to be Incorporated
Appendix E: List of Reports to be Removed from the TVOP

The application fee for a Title V application is $750 per 25 Pa. Code §127.704(b)(3).

2. BACKGROUND INFORMATION

2.1 Current Operations at the NorthStar Facility

The PESRM refinery ceased refining operations in July 2019. At that time, all refinery process units were shut down and flushed to evacuate the equipment to the greatest extent possible. Process units were then nitrogen blanketed and closed pending a decision on restart or final decommissioning and demolition. As a result, there may be residual refinery process gas and/or residue in the lines and vessels that will be removed during the decommissioning process. Additionally, there are storage tanks containing the refinery's remaining inventory of heavy oil and crude oil which remain in operation. PESRM plans to sell this remaining product prior to closing these tanks. Additionally, some small lube oil and process chemical tanks remain that have not yet been emptied that will be sold or managed as waste prior to closing.

PESRM's qualified contractor, NorthStar, is decommissioning and demolishing the existing refinery equipment. In order to prepare the equipment for demolition, NorthStar is opening the equipment and removing any residual refinery process gas or residue. This is generally accomplished by blowing nitrogen or steam through the lines and vessels and sending the material to one of the remaining four active flares (if needed). This may result in intermittent flaring of relatively small amounts of hydrocarbon gases. Equipment cleaning procedures to remove any remaining residue may also result in discharges to the facility's wastewater treatment plant.

Since the equipment at the NorthStar Facility is no longer engaged in petroleum refining, or manufacturing of any kind and the site's operators are engaged in decommissioning and demolishing the refinery process equipment, the site is no longer considered to be a petroleum refinery or a chemical manufacturing facility. Therefore, the facility SIC code should no longer be listed as 2911 in the facility permit.[1] Instead, PESRM proposes that the SIC code be listed as 1795 – Wrecking and Demolition Work, as this is the primary activity under NorthStar's operations.[2]

2.2 Requested Changes in Regulatory Applicability

A detailed regulatory applicability review is provided in Section 3 which indicates that the following regulations are no longer applicable to the NorthStar Facility. NorthStar requests removal of these regulatory requirements from the PESRM TVOP. NorthStar will continue to comply with the 2005 Consent Decree Order (05-CV-2866) requirements associated with flares, LDAR, and wastewater operations until the aforementioned Consent Decree Order is terminated or the operations are permanently shutdown.

- 40 CFR 60 Subpart J and Ja-- Standards of Performance for Petroleum Refineries
- 40 CFR 60 Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006

[1] SIC 2911 – Petroleum Refining: Establishments primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionaltion or stratight distillation of crude oil, redistillation of unfinished petroleum derivatives, crack or othe processes.

[2] SIC 1795 – Wrecking and Demolition: Special Trade contractors primarily engaged in the wrecking and demolition of buildings and other structures, except marine. They may or may not sell material derived from demolishing operations.

- 40 CFR 60 Subpart GGG -- Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After January 4, 1983, and on or Before November 7, 2006
- 40 CFR 60 Subpart GGGa – Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries for which Construction, Reconstruction, or Modification Commenced After November 7, 2006
- 40 CFR 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refineries Wastewater Systems (After May 4, 1987)
- 40 CFR 61 Subpart J – National Emission Standards for Hazardous Air Pollutants for Equipment Leaks (Fugitive Emission Sources) of Benzene
- 40 CFR 61 Subpart FF – National Emission Standards for Benzene Waste Operations
- 40 CFR 63 Subpart F -- NESHAP for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
- 40 CFR 63 Subpart G - NESHAP for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
- 40 CFR 63 Subpart H - NESHAP for Organic Hazardous Air Pollutants for Equipment Leaks
- 40 CFR 63 Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers
- 40 CFR Part 63 Subpart Y – National Emission Standards for Marine Tank Vessel Loading Operations[3]
- 40 CFR 63 Subpart CC -- National Emission Standards for Hazardous Air Pollutants (NESHAP) from Petroleum Refineries
- 40 CFR 63 Subpart UUU - National Emission Standards for Hazardous Air Pollutants (NESHAP) from Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units
- 25 PA Code 123.13b – Processes - Petroleum Refining (catalytic cracking)
- 25 PA Code 129.13 – Sulfur Recovery Plants
- 25 PA Code 129.55 – Petroleum refineries – specific sources
- 25 PA Code 129.58 – Petroleum refineries – fugitive sources
- 25 PA Code 129.71 – Synthetic organic chemical and polymer manufacturing – fugitive sources

2.3 PESRM TVOP Sources Remaining in Operation

Appendix D provides a redline version of the PESRM TVOP. Requested changes to the Refinery TVOP are marked as follows:

- Green Source remains in operation under NorthStar, and
- Red Source is permanently shutdown and should be removed from the permit.

In addition, blue font in the permit redline indicates sources that remain in operation under Host. The permitting of these sources is addressed in another modification application submitted under separate cover.

As previously stated, the current PESRM TVOP (No. V06-016) was issued to PESRM on July 18, 2014 with an expiration date of July 18, 2019. The permit was amended on September 11, 2015. Table 2-1 below provides a listing of sources currently listed in the PESRM TVOP that will remain in operation under NorthStar.

[3] The marine loading operations are being transferred to the SRTF TVOP and will not be retained by NorthStar.

Table 2-1. PESRM TVOP Sources Remaining in Operation under NorthStar

Refinery Source Group	Unit(s)	Requested Change
Group 01 – Boilers and Heater	CU-018 (GP) #37 Boiler CU-020 (GP) #39 Boiler CU-021 (GP) #40 Boiler	Change fuel to Natural Gas
Group 03 – Flares	P-117 (GP) - CD012 1231 Flare – Unit 1232 P-118 (GP) – CD013 1232 Flare – Unit 1232 P-642 (PB) CD111 Flare, North Flare in South Yard P-643 (PB) CD112 Flare, South Flare in South Yard	Change pilot fuel to Natural Gas or purchased propane
Group 08	Equipment VOC Leak Components Not Subject to NSPS or NESHAP	Remove 25 Pa. Code 129.58 requirements
Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb	P-012 (GP) T-272, IFR containing Recovered Oil P-135 (GP) T-767, IFR containing Recovered Oil P-159 (GP) T-1086, containing Spent Caustic P-160 (GP) T-1087, containing Spent Caustic P-174 (GP) T-1007, containing Oily Wastewater P-594 (PB) Tank #847, IFR containing Crude Oil P-603 (PB) Tank #885, IFR containing Crude Oil P-604 (PB) Tank #886, IFR containing Crude Oil	Moved In-service IFR Tanks from Refinery MACT Groups to NSPS Kb Group
Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb	P-006 (GP) T-228, EFR containing Stormwater/Process Water P-155 (GP) T-844 containing #2 Separator Water P-162 (GP) T-1136 containing #4 Separator Water P-521 (PB) Tank #117, EFR containing Recovered Oil P-546 (PB) Tank #191, EFR Containing Recovered Oil P-579 (PB) Tank #826, EFR containing Crude Oil P-587 (PB) Tank #840, EFR containing Crude Oil P-588 (PB) Tank #841, EFR containing Crude Oil P-590 (PB) Tank #843, EFR containing Crude Oil P-601 (PB) Tank #883, EFR containing Crude Oil P-602 (PB) Tank #884, EFR containing Crude Oil P-624 (PB) Tank # 7300, EFR containing Stormwater/Process Water P-627 (PB) Tank #7308, EFR containing Stormwater/Process Water	Moved In-service EFR Tanks from Refinery MACT Groups to NSPS Kb Group

Refinery Source Group	Unit(s)	Requested Change
Group 15A – Storage Tanks Petroleum Liquids	P-032 (GP) T-273, Fixed Roof containing Resid P-036 (GP) T-282, Fixed Roof containing Gas Oil or Cat Charge Stock P-037 (GP) T-284, Fixed Roof containing Gas Oil or Cat Charge Stock P-039 (GP) T-494, Fixed Roof containing Main Fract Bottoms P-144 (GP) T-219 containing Light Cycle Oil P-147 (GP) T-227 containing Main Fract Bottoms P-153 (GP) T-794 containing Tetra Ethylene Glycol (TEG) P-154 (GP) T-796 containing TEG P-175 (GP) T-3000 containing Lube Oil P-176 (GP) T-3001 containing Lube Oil P-177 (GP) T-3002 containing Lube Oil P-178 (GP) T-3004 containing Lube Oil P-179 (GP) T-3005 containing Lube Oil P-529 (PB) Tank # 144 containing Main Fract Bottoms P-530 (PB) Tank # 145 containing Main Fract Bottoms P-534 (PB) Tank # 151, EFR containing Gas Oil P-563 (PB) Tank #663 containing Main Fract Bottoms P-571 (PB) Tank #672 containing Gas Oil P-582 (PB) Tank #833, IFR containing Gas Oil	Change to Petroleum Liquids
Group 22 – Degreasing Vats	P-108 (GP) Degreasing Vats (GP) Garage – Model E3000	No Changes Requested
Group 25A – Refining Wastewater	P-131 (GP) 4A API Separator – WWT P-132 (GP) 2B API Separator – WWT P-639 (PB) API Separators A&B – Bio Plant P-114 (GP) Wastewater P-640 (PB) Dissolved Nitrogen Floatation Unit A&B – Bio Plant P-641 (PB) Bio Plant Sewer System P-667 (PB) Wastewater Sources P-142 (GP) T-1142, T-1143 – Oxidation Tanks (WWTP)	Removal of Controls No Longer Required by Rule

Refinery Source Group	Unit(s)	Requested Change
Group 27 – Emergency Generator and Fire Pump	EM-001 Caterpillar (model 3412DITTA) EGen FP-010 24PEN4 Fire Pump #4 FP-011 24P1 Fire Engine (Haenn's Wharf) FP-012 Fire Pump (1st and Wharf #8) FP-013 24P2 North Fire Pump (Haenn's Wharf) FP-014 24P3 South Fire Pump (Short Pier) FP-015 24PEN5 Fire Pump (North Yard) FP-016 24PEN6 Fire Pump (North Yard Wharf) FP-019 Belmont Firehouse Williams Pump	No Changes Requested
Group 28 – Internal Combustion Engines	IC-002 53P-800C pump IC-005 FE-5(2) Flood Control Pump Driver IC-006 Godwin 894572/4 Flood Control IC-007 B-2623 Flood Control Pump Driver IC-008 Engine Set 1290 rIC-001 Rental back-up pump rIC-006 Rental back-up air compressor rIC-007 Rental back-up pump	No Changes Requested

2.4 Refinery Plan Approvals and Installation Permits

During the permit term, AMS issued multiple installation permits and plan approval to PESRM. A TVOP renewal application was submitted to AMS on January 18, 2019 which included incorporation of these various installation permits and plan approvals, however the application remains pending. Per the administrative amendment application, PESRM has requested that the plan approvals listed in Table 2-2 be transferred to NorthStar. Per this Title V modification application, NorthStar requests that these permits be incorporated into the PESRM TVOP.

Table 2-2. Refinery Plan Approvals to be Incorporated into Title V Permit

Permit Number	Description	Issue Date
General Plan Approval No. 13001	PB 843 Tank Permit	January 17, 2013
General Plan Approval No. 15187, 15189, 15190	PB 847, PB 885, PB 886 Tank Permit	August 24, 2015
General Plan Approval No. 15246	PB 7300 Tank Permit	September 10, 2015
General Plan Approval No. 17000133	GP 219 Tank Permit	May 15, 2017
RACT Plan Approval No. IP16-000269	RACT Permit	April 24, 2020
Plan Approval No. 15247	GP Boiler 45	May 19, 2016

AMS does not allow the administrative transfer of Installation Permit into a Title V permit. Table 2-3 lists the Installation Permits which NorthStar requests to be incorporated into the PESRM TVOP as part of this modification.

Table 2-3. Refinery AMS Permits to be Incorporated into Title V Permit

Permit Number	Description	Issue Date
Installation Permit No. 13178	PB North Flare Tip Replacement	August 19, 2013
Reactivation Permit No. 13260	PB South Flare Reactivation	July 18, 2014
Installation Permit No. IP18-000260, IP18-000263	1231 Flare Tip Replacement	September 26, 2018
Installation Permit No. IP18-000373-374	Flood Control RICE (2)	November 9, 2018

3. REGULATORY REVIEW

Authorization to operate an emission source in Philadelphia requires compliance with the following key regulatory elements, as applicable:

- Title V of the 1990 Clean Air Act Amendments (as incorporated, implemented in the Pennsylvania SIP under 25 Pa. Code §127.501 – 127.543), and Air Management Regulation (AMR) Section XIII;
- Applicable federal and state emission standards and control programs contained in the AMS and Pennsylvania SIPs.

This section of the report addresses the conformity of the remaining operations at the NorthStar Facility to these permitting programs and potentially applicable regulatory requirements.

3.1 Title V Permitting Requirements

While petroleum refining has ceased, the facility remains a major source of volatile organic compounds (VOC) and hazardous air pollutant (HAP) emissions. Therefore, the site is still subject Title V permitting requirements. With this application, PESRM is requesting a significant modification to the PESRM TVOP to issue a modified TVOP authorizing operation of certain sources involved in the ongoing decommissioning and demolition activities being performed by NorthStar at the facility.

3.2 Potentially Applicable Federal Emission Standards

Two types of federal emission standards could continue to apply to certain operations being operated by NorthStar. These emission standards are: New Source Performance Standards (NSPS) codified in 40 CFR 60 and National Emission Standards for Hazardous Air Pollutants (NESHAP) codified in 40 CFR 61 and 63. Potentially applicable NSPS and NESHAP are reviewed below.

3.2.1 40 CFR Part 60 Subpart J – Standards of Performance for Petroleum Refineries (After June 11, 1973 but before May 14, 2007)

Pursuant to 40 CFR 60.100, NSPS Subpart J applies to affected facilities in petroleum refineries that commence construction, reconstruction, or modification after June 11, 1973 and on or before May 14, 2007. Affected facilities in petroleum refineries include fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices and all Claus sulfur recover plants with a design capacity of greater than 20 long tons of sulfur feed per day.

Per 40 CFR 60.101(a), a petroleum refinery is any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives. All refining processes at the NorthStar Facility have been shut down since July 2019, and equipment was flushed to evacuate the equipment to the greatest extent possible. The owners have begun decommissioning and demolition. Therefore, the site is no longer a petroleum refinery as defined by NSPS Subpart J. However, in accordance with the Sunoco 2005 Consent Agreement, the four flares remaining at the NorthStar Facility were required to comply with NSPS J requirements. Therefore, although NSPS Subpart J is no longer applicable to the operations at the facility, PESRM/NorthStar will continue to comply with NSPS Subpart A and J requirements for the four flares until the consent decree is terminated.

The boilers at the facility will remain in operation and will only fire natural gas as fuel. Even though NSPS Subpart J is no longer applicable, the natural gas fuel will meet the Consent Decree requirements.

3.2.2 40 CFR Part 60 Subpart Ja – Standards of Performance for Petroleum Refineries (After May 14, 2007)

Pursuant to 40 CFR 60.100a, NSPS Subpart Ja applies to affected facilities in petroleum refineries that commence construction, reconstruction, or modification after May 14, 2007. Affected facilities include fluid catalytic cracking units (FCCU), fluid coking units (FCU), delayed coking units, fuel gas combustion devices (including process heaters), flares and sulfur recovery plants. Of these affected source types, only flares and boilers remain in operation at the NorthStar Facility. However NSPS Subpart Ja is not applicable to the boilers at the facility which are limited to natural gas as a fuel.

Per 40 CFR 60.101a (NSPS Subpart Ja), Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, asphalt (bitumen) or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives. A facility that produces only oil shale or tar sands-derived crude oil for further processing at a petroleum refinery using only solvent extraction and/or distillation to recover diluent is not a petroleum refinery. As discussed above, the site is no longer a petroleum refinery as defined by NSPS Subpart Ja. Furthermore, any gases that are being directed to the four remaining flares under NorthStar's operations are not generated by the operation of refinery process units. Rather, the flared material is generated through the cleaning of residue remaining in the contaminated vessels and lines in preparation for demolition. Therefore, the flare requirements under NSPS Subpart Ja should be removed from the requirements applicable to Group 03 – Flares per AMS Permit # IP18-000260 & 263.

3.2.3 40 CFR Part 60 Subpart K – Standards of Performance for Storage Vessels for Petroleum Liquids (After June 11, 1973 but before May 19, 1978)

Pursuant to 40 CFR 60.110, NSPS Subpart K applies to affected facilities in petroleum liquid service with a capacity greater than 40,000 gallons but not greater than 65,000 gallons that commence construction, reconstruction, or modification after March 8, 1974, but before May 19, 1978; and affected facilities with a capacity greater than 65,000 gallons that commence construction, reconstruction or modification after June 11, 1973 but before May 19, 1978. Affected facilities include certain storage vessels that are in petroleum liquid service. If there is a storage vessel subject to NSPS Subpart K, NorthStar will elect to comply with more stringent requirements of NSPS Subpart Kb.

3.2.4 40 CFR Part 60 Subpart Ka – Standards of Performance for Storage Vessels for Petroleum Liquids (After May 18, 1978 but before July 23, 1984)

Pursuant to 40 CFR 60.110a, NSPS Subpart Ka applies to affected facilities in petroleum liquid service that commence construction, reconstruction, or modification after May 18, 1978 but before July 23, 1984. Affected facilities include certain storage vessels greater than 40,000 gallons that are in petroleum liquid service. If there is a storage vessel subject to NSPS Subpart Ka, NorthStar elect to comply with more stringent requirements of NSPS Subpart Kb.

3.2.5 40 CFR Part 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) (After July 23, 1984)

Pursuant to 40 CFR 60.110b, NSPS Subpart Kb applies to affected facilities with a capacity greater than 75 cubic meters used to store volatile organic liquids (VOL) that commence construction, reconstruction, or modification after July 23, 1984. Affected facilities include certain storage vessels that are in petroleum liquid service. NorthStar is proposing to comply with NSPS Subpart Kb requirements for the following sources that are in petroleum liquid service or contain a layer of petroleum liquid on wastewater: P-006 (GP), P-012 (GP), P-135 (GP), P-155 (GP), P-159 (GP), P-160 (GP), P-162 (GP), P-174 (GP), P-521 (PB), P-546 (PB), P-579 (PB), P-587 (PB), P-588 (PB), P-590 (PB), P-594 (PB), P-601 (PB) through P-604 (PB), P-624 (PB), P-627 (PB). It should be noted that the above list includes tanks formerly subject to 40 CFR 63 Subpart CC, Group 1 requirements which are still in operation at the facility.

3.2.6 40 CFR Part 60 Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry[4] (After January 5, 1981 but on or before November 7, 2006)

Pursuant to 40 CFR 60.480, NSPS Subpart VV applies to affected facilities in the synthetic organic chemicals manufacturing industry (SOCMI) that commence construction, reconstruction, or modification after January 5, 1981 but on or before November 7, 2006. This subpart was previously applicable to Source 1732 Benzene Recovery Unit and Source 1733 Cumene Production Unit as indicated in Group 07 of the PESRM TVOP. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as synthetic organic chemicals manufacturing. Therefore, the facility is not subject to NSPS Subpart VV.

3.2.7 40 CFR Part 60 Subpart VVa – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry[4] (After November 7, 2006)

Pursuant to 40 CFR 60.480a, NSPS Subpart VVa applies to affected facilities in the synthetic organic chemicals manufacturing industry that commence construction, reconstruction, or modification after November 7, 2006. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as synthetic organic chemicals manufacturing. Therefore, the facility is not subject to NSPS Subpart VVa.

3.2.8 40 CFR Part 60 Subpart GGG – Standards of Performance for Petroleum Refineries Equipment Leaks (After January 4, 1983 but before November 7, 2006)

Pursuant to 40 CFR 60.590, NSPS Subpart GGG applies to affected facilities in petroleum refineries that commence construction, reconstruction, or modification after January 4, 1983, and on or before November 7, 2006. This subpart was previously applicable to several process units as indicated in Group 07 of the PESRM TVOP. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut

[4] Per 40 CFR 60.481 (NSPS Subpart VV) and 40 CFR 60.481a (NSPS Subpart VVa), *Synthetic organic chemicals manufacturing industry* means the industry that produces, as intermediates or final products, one or more of the chemicals listed in 40 CFR 60.489.

down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, the facility is not subject to NSPS Subpart GGG. NorthStar will continue to comply with applicable LDAR requirements specified by Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.

3.2.9 40 CFR Part 60 Subpart GGGa – Standards of Performance for Petroleum Refineries Equipment Leaks (After November 7, 2006)

Pursuant to 40 CFR 60.590a, NSPS Subpart GGGa applies to affected facilities in petroleum refineries that commence construction, reconstruction, or modification after November 7, 2006. Under NSPS GGGa, affected facilities include compressors and the group of all equipment within a process unit. This subpart was previously applicable to the 859 ULSD unit as indicated in Group 06 of the PESRM TVOP. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, the facility is not subject to NSPS Subpart GGGa.

3.2.10 40 CFR Part 60 Subpart QQQ – Standards of Performance for VOC Emissions from Petroleum Refineries Wastewater Systems (After May 4, 1987)

Pursuant to 40 CFR 60.690(a), NSPS Subpart QQQ applies to affected facilities (wastewater systems) in petroleum refineries that commence construction, reconstruction, or modification after May 4, 1987. This regulation was applicable to sewer systems in the Point Breeze 869 and 870 Units. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, the facility is not subject to NSPS Subpart QQQ.

3.2.11 40 CFR Part 61 Subpart J – National Emission Standards for Hazardous Air Pollutants for Equipment Leaks (Fugitive Emission Sources) of Benzene

Pursuant to 40 CFR 61.110, 40 CFR 61 Subpart J applies to the following sources that are intended to operate *in benzene service*: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems. According to 40 CFR 61.111, *in benzene service* means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent benzene by weight as determined according to the provisions of 40 CFR 61.245(d). All benzene manufacturing operations at the facility are permanently shut down. Further, there is no equipment *in benzene service* at the NorthStar facility, therefore it is not subject to 40 CFR 61 Subpart J.

3.2.12 40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

Pursuant to 40 CFR 61.340, 40 CFR 61 Subpart FF applies to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, and equipment was flushed to evacuate the equipment to the greatest extent possible. The site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as chemical manufacturing or petroleum refining. Any waste generated by NorthStar is generated by the decontamination of equipment in preparation for demolition, and thus will not be subject to 40 CFR 61 Subpart FF. In addition, the total annual benzene quantity from facility waste is expected to be less than the 10 megagrams per year exemption level in 40 CFR 61.342.

3.2.13 40 CFR Part 63 Subpart F – National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry[5]

Pursuant to the requirements in 40 CFR 63.100, 40 CFR 63 Subpart F applies to owners and operators of certain synthetic organic chemical manufacturing facilities. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as synthetic organic chemical manufacturing. Therefore, the facility is not subject to 40 CFR 63 Subpart F.

3.2.14 40 CFR Part 63 Subpart G – National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater[5]

Pursuant to 40 CFR 63.110, 40 CFR 63 Subpart G applies to all process vents, storage vessels, transfer racks, wastewater streams, and in-process equipment subject to 40 CFR 63.149 within a source subject to 40 CFR 63 Subpart F. As specified above, the NorthStar Facility is not subject to 40 CFR 63 Subpart F and thus will not be subject to 40 CFR 63 Subpart G.

3.2.15 40 CFR Part 63 Subpart H – National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

Pursuant to 40 CFR 63.160, 40 CFR 63 Subpart H applies to pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, instrumentation systems, and control devices or closed vent systems required by 40 CFR 63 Subpart H that are intended to operate in organic hazardous air pollutant service 300 hours or more during the calendar year within a source subject to the provisions of a specific subpart in 40 CFR 63 that references this 40 CFR 63 Subpart H. This subpart was previously applicable to several process units as indicated in Group 07 of the PESRM TVOP. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, and the process vessels were evacuated and closed pending cleaning and demolition. According to 40 CFR 63.180(d), for a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. Due to the nature of the current operations by NorthStar involving the equipment previously subject to 40 CFR 63, Subpart H, this is a reasonable expectation. Therefore, the facility is not subject to 40 CFR 63 Subpart H.

[5] Per 40 CFR 63.101 (40 CFR 63 Subpart F) and 40 CFR 63.111 (40 CFR 63 Subpart G), *Chemical manufacturing process unit* means the equipment assembled and connected by pipes or ducts to process raw materials and to manufacture an intended product. A chemical manufacturing process unit consists of more than one unit operation. For the purpose of this subpart, chemical manufacturing process unit includes air oxidation reactors and their associated product separators and recovery devices; reactors and their associated product separators and recovery devices; distillation units and their associated distillate receivers and recovery devices; associated unit operations; associated recovery devices; and any feed, intermediate and product storage vessels, product transfer racks, and connected ducts and piping. A chemical manufacturing process unit includes pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, and control devices or systems. A chemical manufacturing process unit is identified by its primary product.

3.2.16 40 CFR Part 63 Subpart Y – National Emission Standards for Marine Tank Vessel Loading Operations

Pursuant to 40 CFR 63.560, 40 CFR 63 Subpart Y applies to existing and new sources with emissions of 10 or 25 tons (marine tank vessels loading operations at all loading berths), as that term is defined in 40 CFR 63.561, except as specified in paragraph (d) of 40 CFR 63.560, and are applicable to new sources with emissions less than 10 and 25 tons, as that term is defined in 40 CFR 63.561, except as specified in paragraph (d) of 40 CFR 63.560. The remaining emission sources operated by NorthStar do not include marine loading equipment. As mentioned in Section 1, all of the marine loading equipment is to be transferred to the SRTF TVOP. Therefore, the NorthStar operations are not subject to 40 CFR 63 Subpart Y.

3.2.17 40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

Pursuant to 40 CFR 63.640, 40 CFR 63 Subpart CC applies to certain petroleum refining process units at a petroleum refinery that is located at a major source of hazardous air pollutants. Per 40 CFR 63.641, petroleum refining process unit means a process unit used in an establishment primarily engaged in petroleum refining as defined in the Standard Industrial Classification code for petroleum refining (2911), and used primarily for the following: (1) Producing transportation fuels (such as gasoline, diesel fuels, and jet fuels), heating fuels (such as kerosene, fuel gas distillate, and fuel oils), or lubricants; (2) Separating petroleum; or (3) Separating, cracking, reacting, or reforming intermediate petroleum streams. (4) Examples of such units include, but are not limited to, petroleum-based solvent units, alkylation units, catalytic hydrotreating, catalytic hydrorefining, catalytic hydrocracking, catalytic reforming, catalytic cracking, crude distillation, lube oil processing, hydrogen production, isomerization, polymerization, thermal processes, and blending, sweetening, and treating processes. Petroleum refining process units also include sulfur plants. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped and equipment was flushed to evacuate the equipment to the greatest extent possible. Ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, SIC code 2911 no longer applies and the facility is not subject to 40 CFR 63 Subpart CC. NorthStar will continue to comply with applicable requirements specified by Consent Decree Order 05-CV-2866 which reference Subpart CC until the Consent Decree is terminated.

3.2.18 40 CFR Part 63 Subpart UUU – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units

Pursuant to 40 CFR 63.1560 and 40 CFR 63.1561, 40 CFR 63 Subpart UUU applies to certain petroleum refining process units at a petroleum refinery that is located at a major source of hazardous air pollutants. The affected sources covered under this rule (Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units) are permanently shut down. In addition, as discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, the facility is not subject to 40 CFR 63 Subpart UUU.

3.2.19 40 CFR Part 63 Subpart EEEE – National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)

Pursuant to 40 CFR 63.2334, 40 CFR 63 Subpart EEEE applies to non-gasoline organic liquid distribution operations at major sources of hazardous air pollutants. Subpart EEEE applies to organic liquid storage

tanks, loading and unloading transfer racks (truck and railcar) and equipment leaks associated applicable units. Per 40 CFR 63.2406, an organic liquid is defined as follows:

(1) Any non-crude oil liquid, non-condensate liquid, or liquid mixture that contains 5 percent by weight or greater of the organic HAP listed in Table 1 to the subpart.
(2) Any crude oils or condensates downstream of the first point of custody transfer.
(3) Organic liquids for purposes of this subpart do not include:
    a. Gasoline (including aviation gasoline), kerosene (No. 1 distillate oil), diesel (No. 2 distillate oil), asphalt, and heavier distillate oils and fuel oils;
    b. Any fuel consumed or dispensed on the plant site directly to users (such as fuels for fleet refueling or for refueling marine vessels that support the operation of the plant);
    c. Hazardous waste;
    d. Wastewater;
    e. Ballast water; or
    f. Any non-crude oil or non-condensate liquid with an annual average true vapor pressure less than 0.7 kilopascals (0.1 psia)

The crude oil and recovered oil tanks remaining in operation at the NorthStar Facility are potentially subject to this regulation. The crude oil and recovered oil tanks were previously subject to requirements under 40 CFR 63 Subpart CC which is no longer applicable as discussed in Section 3.2.18. However, NorthStar has elected to comply with NSPS Subpart Kb requirements for all crude oil and recovered oil tanks. Per the requirements of 40 CFR 63.2396(a), tanks which are in compliance with NSPS Subpart Kb requirements are in compliance with 40 CFR 63 Subpart EEEE except that records must be kept for 5 years rather than 2 years.

According to 40 CFR 63.2338(b)(3), Subpart EEEE also applies to all equipment leak components in organic liquids service that are associated with storage tanks storing organic liquids and pipelines that transfer organic liquids to/from storage tanks storing organic liquids. The work practice requirements related to equipment leaks apply to pumps, valves, and sampling connections in organic liquids storage at least 300 hours per year and require compliance with 40 CFR Part 63, Subpart TT (control level 1), Subpart UU (control level 2), or Subpart H as applicable to pumps, valves and sampling connections. NorthStar will comply with these requirements for the piping components associated with the crude oil and recovered oil storage tanks.

All other tanks (non-crude oil and non-recovered oil storage) remaining in operation at the NorthStar Facility will not contain greater than 5% HAP or will store products with a vapor pressure less than 0.1 psia. These tanks are listed in Group 15A of the PESRM TVOP.

3.2.20 40 CFR Part 63 Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

According to 40 CFR 63.7485, the boilers remaining in service at the NorthStar Facility are subject to 40 CFR 63, Subpart DDDDD as units designed to burn gas 1. The U*nit designed to burn gas 1 subcategory* includes any boiler that burns only natural gas, refinery gas, and/or other gas 1 fuels. Therefore, the change in fuel from refinery fuel gas to natural gas does not impact the applicability of this subpart as outlined in the PESRM TVOP for Group 01 sources.

3.3 Pennsylvania SIP Regulations

Air quality regulations for the Commonwealth of Pennsylvania as codified in 25 Pa. Code. Chapters 121 – 129 and 131 – 145 are examined for applicability to the proposed modification in the following sections. The Pennsylvania Code contains regulations that fall under two main categories: those regulations that are generally applicable (e.g., permitting requirements), and those that have specific applicability (e.g., PM standards for manufacturing equipment). The generally applicable requirements are straightforward (e.g., filing of emission statements) and, as such, are not discussed in further detail. The specific requirements associated with the proposed modification are discussed in the following section.

3.3.1 25 Pa. Code §123.13

25 Pa. Code §123.13 *Particulate Emissions*: *Processes* limits particulate matter emissions for processes. NorthStar will continue to comply with this requirement for equipment remaining in operation. The particulate emission limit in §123.13(b)(1) for Petroleum Refining (catalytic cracking) is no longer applicable. All catalytic cracking units at the NorthStar Facility are permanently shutdown.

3.3.2 25 Pa. Code §123.21

25 Pa Code §123.21 *Sulfur Compound Emissions: General* limits the emission of sulfur oxides from all sources to 500 parts per million, by volume, on a dry basis. NorthStar will continue to comply with this requirement.

3.3.3 25 Pa. Code §123.31

25 Pa. Code §123.31 *Odor Emissions: Limitations* states that a facility may not emit any malodorous air contaminants in such a manner that malodors are detectable outside the facility boundary. NorthStar will continue to comply with this requirement.

3.3.4 25 Pa. Code §123.41

25 Pa. Code §123.41 *Visible Emissions: Limitations* states that a facility may not emit visible emissions equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any 1 hour, or equal to or greater than 60% at any time. NorthStar will continue to comply with this requirement.

3.3.5 25 Pa. Code §129.13

25 Pa. Code §129.13 *Sulfur Recovery Plants* is no longer applicable to the NorthStar Facility. The facility's sulfur recovery units were permanently shut down in July 2019.

3.3.6 25 Pa. Code §129.55

25 Pa. Code §129.55 establishes standards for specific sources at petroleum refineries. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, the facility is not subject to 25 Pa. §129.55.

3.3.7 25 Pa. Code §129.56

25 Pa. Code §129.56 establishes standards for storage tanks greater than 40,000 gallons capacity containing volatile organic compounds. NorthStar will continue to comply with these requirements, as applicable.

3.3.8 25 Pa. Code §129.57

25 Pa. Code §129.57 establishes standards for storage tanks less than or equal to 40,000 gallons capacity containing volatile organic compounds. NorthStar will continue to comply with these requirements, as applicable.

3.3.9 25 Pa. Code §129.58

25 Pa. Code §129.58 establishes standards for fugitive sources at petroleum refineries. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as petroleum refining. Therefore, the facility is not subject to 25 Pa. §129.58.

3.3.10 25 Pa. Code §129.71

25 Pa. Code §129.71 establishes standards for fugitive sources at synthetic organic chemical and polymer manufacturing facilities. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as a synthetic organic chemical or polymer manufacturing. Therefore, the facility is not subject to 25 Pa. §129.71.

3.3.11 25 Pa. Code §129.81

25 Pa. Code 129.81 establishes standards for organic liquid cargo vessel loading and ballasting. Marine loading equipment including barge loading operations at the Girard Point Wharf (P-130) and Point Breeze marine barge loading (P-636) will be transferred from Group 17 of the PESRM TVOP to the SRTF TVOP. Thus, the facility is not subject to 25 Pa. §129.81.

3.3.12 25 Pa. Code §129.91 - §129.100

25 Pa. Code 129.91 – 129.100 establishes control standards for major sources of NO_X and VOC under the Reasonably Available Control Technology (RACT) program. The NorthStar facility is considered a "major NO_X and VOC emitting facility" pursuant to 25 Pa Code §121.1. Applicable RACT requirements are provided in RACT Plan Approval No. IP16-000269. NorthStar will continue to comply with conditions from IP16-000269 and the PESRM TVOP for sources remaining in operation at the facility as outlined in Appendix D.

In addition, the Boilers #37, #39, #40 and #45 at the NorthStar Facility will no longer be permitted to fire refinery fuel gas. Thus, the boilers will comply with the presumptive RACT requirements for natural gas combustion units in 25 Pa Code §129.97(g)(1)(i). The emission limits in RACT Plan Approval No. IP16-000269 assure compliance with this requirement.

3.4 AMS SIP Regulations

In addition to the Pennsylvania SIP regulations addressed in Section 2.3, air quality regulations for the City of Philadelphia as codified in AMR I – XV are examined for applicability to NorthStar in the following sections.

3.4.1 AMR II Section IV

AMR II Section IV *Visible Emissions* states that a facility may not emit visible emissions equal to or greater than a shade of No. 1 on the Ringelmann Chart for a period or periods aggregating more than 3 minutes in any 1 hour, or equal to or greater than a shade of No. 3 on the Ringelmann Chart at any time. The NorthStar facility will continue to comply with this requirement.

3.4.2 AMR II Section VIII

AMR II Section VIII *Fugitive Dust* states that a facility may not cause or permit the handling, transporting, storing or disposing of any substance or material which is likely to be scattered by the wind, or is susceptible to being windborne, without taking effective precautions or measures to prevent air contamination. The NorthStar facility will continue to comply with this requirement.

3.4.3 AMR III Section I

AMR V Section II establishes fuel sulfur limitations for commercial fuel oil. The engines in Groups 27 and 28 of the PESRM TVOP will continue to comply with this requirement.

3.4.4 AMR III Section II

AMR III Section II *Control of Sulfur Compounds Emissions* states that a facility may not cause or permit a specific source or process to emit sulfur oxides, calculated as sulfur dioxide (SO_2), in excess of an average 0.4 ppm (volume) for any 5 minute period when measured at ground level. Except as provided in Section III, no person shall cause or permit a specific source or process to emit sulfur oxides in excess of 0.05 percent by volume. This requirement may not be met by diluting or diffusing exhaust gases. The NorthStar facility will continue to comply with this requirement.

3.4.5 AMR V Section II

AMR V Section II establishes standards for storage tanks greater than 40,000 gal which store VOCs with a vapor pressure greater than 1.5 psia. NorthStar will continue to comply with this requirement for the applicable storage tanks.

3.4.6 AMR V Section V

AMR V Section V establishes standards for organic material loading operations. All organic material loading operations at the NorthStar Facility are being transferred to the SRTF TVOP. As such, AMR V Section V is not applicable to NorthStar's operations.

3.4.7 AMR V Section XIII

AMR V Section XIII, Part A requires that VOC emissions from equipment leaks be limited to 10,000 ppmv when measured by test methods approved by AMS. NorthStar will continue to comply with this requirement for the applicable equipment leaks as required by the current PESRM TVOP. AMR V Section VIII, Part B applies to facilities that manufacture any one or a combination of synthetic organic chemicals listed in 40 CFR 60.489. As discussed in Section 2.1, all manufacturing operations at the NorthStar Facility are shut down, the site is planned to be redeveloped, and ongoing equipment cleaning and demolition operations performed by NorthStar do not qualify as synthetic organic chemicals manufacturing. Therefore, the facility is not subject to AMR V Section VIII, Part B.

3.4.8 AMR V Section XX

AMR V Section XX *Odors* states that the emissions of odorous materials shall be in compliance with this Regulation and odors shall be controlled as required to prevent any odor nuisance. The NorthStar facility will continue to comply with this requirement.

3.4.9 AMR VI

AMR VI *Control of Emissions of Toxic Air Contaminants* regulates emissions of air toxics within the city. The proposed permit action is to remove shutdown processes and transfer authorization for operation of existing permitted sources. Thus, this action will not increase the emissions of toxic air contaminants. The NorthStar facility will continue to comply with the requirements of this regulation.

3.4.10 AMR VIII

AMR VIII *Control of Emissions of Carbon Monoxide from Stationary Sources* regulates emissions of carbon monoxide from stationary sources. AMR VIII Section II states carbon monoxide emissions for certain stationary sources may not exceed 1% by volume of exhaust gases. The NorthStar facility will continue to comply with the requirements of this regulation.

3.4.11 AMR XV Section III

AMR XV Section III *Standards* regulates emission standards from emergency generators and fire pumps. The NorthStar facility will continue to comply with the requirements of this regulation.

4. SUMMARY OF PROPOSED CHANGES

This section outlines the requested changes to the former refinery Title V permit and the plan approval, installation and general permits requested to be incorporated into the NorthStar Title V permit as part of this modification. These changes are also shown in the redline versions of each permit provided in Appendix D of this submittal. In addition, NorthStar is requesting removal of the list of reports provided in Appendix E consistent with the regulatory review provided in this application.

4.1 Proposed Changes to the Former Refinery Title V Permit

A marked up copy of the former refinery Title V permit is provided in Appendix D of this submittal. Requested changes to the former refinery Title V permit are marked as follows:

- Green Text is staying at NorthStar
- Blue Text is transferred to Host
- Red Text is to be removed, source is permanently shutdown
- Green Text with gray highlight is modified and staying at NorthStar
- Blue Text with gray highlight is modified and transferred to Host

The following list the proposed changes in more detail:

1. Table A1-Facility Inventory List and Facility Inventory Index:
    - Group 01 – Boilers and Heater. NorthStar is requesting that the fuel be updated from Refinery Gas to Natural Gas. The facility is no longer producing refinery fuel gas. Only natural gas will be fired in the boilers.

    - Group 02 – Process Heaters. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

    - Group 03 – Flares. NorthStar is requesting to:
        - Remove P-119 (GP) - CD014 and P-646 (PB) from the air permit as they are permanently shutdown.
        - Update the pilot fuel from RFG to Natural Gas or purchased propane. The facility is no longer producing refinery fuel gas. Only natural gas or purchased propane will be fired as pilot gas in the flares.

    - Group 04 – Loading Facilities and Control Equipment. NorthStar is requesting that:
        - P-129 (GP) and P-183 (GP) be transferred to Host air permit.
        - P-638 (PB) and CD-104 be removed from the air permit as they are permanently shutdown.

    - Group 05 – Sulfur Recovery Units. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

    - Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV. NorthStar is requesting that the group be deleted. Regulations: 40 CFR 60.480, 60.590, & 63.648; 25 Pa Code 129.58, and 40 CFR

61 Subpart J are no longer applicable. NorthStar will continue to comply with applicable LDAR requirements specified by Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.

- Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components Subject to 40 CFR 63 Subpart H. NorthStar is requesting that the group be deleted. Regulations: 40 CFR 63.160-182; 25 Pa Code 129.571 are no longer applicable. NorthStar will continue to comply with applicable LDAR requirements specified by Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.

- Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP. NorthStar is requesting that reference to 25 Pa Code 129.58 regulation be removed as it is no longer applicable. However, NorthStar will continue to comply with applicable requirements for case-by-case RACT and AMR V Section XIII A in this group.

  In addition, NorthStar requests that the following language for 40 CFR 63 Subpart EEEE applicable to the crude oil tanks remaining in operation at the facility be added to the Work Practice Requirements of Group 08:

  For Piping components associated with crude oil and recovered oil tanks (P-594, P-603, P-604, P-579, P-587, P-588, P-590, P-601, P-602, P-012, P-135, P-521, and P-546), the permittee shall comply with the following. For each pump, valve, and sampling connection that operates in organic liquids service for at least 300 hours per year, comply with 40 CFR 63.2346(l) and the applicable requirements under subpart TT of this part (control level 1), subpart UU of this part (control level 2), or subpart H of this part. Pumps, valves, and sampling connectors that are insulated to provide protection against persistent sub-freezing temperatures are subject to the "difficult to monitor" provisions in the applicable subpart selected by the owner or operator.[40 CFR 63.2346(c)]

- Group 09 – Cooling Towers. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 10 – Miscellaneous Process Vents (Group 1) subject to 40 CFR 63 Subparts G and CC. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 13A – Tanks Subject to 40 CFR 63 Subpart G. NorthStar is requesting that:
  - P-025 (GP), P-026 (GP), P-029 (GP), and P-163 (GP) be transferred to Host air permit.
  - Remaining emission sources/members be removed from the air permit as they are all permanently shutdown.

- Group 13B – Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC. NorthStar is requesting that:
  - P-012 (GP) be transferred to Group 13C as compliance with 40 CFR 60 Subpart Kb is deemed equivalent to compliance with 40 CFR 63 Subpart CC.
  - Remaining emission sources/members be removed from the air permit as they are all permanently shutdown.

- Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb. NorthStar is requesting that:
  - P-012 (GP) be transferred from Group 13B and its stored material be updated from Crude Oil to Recovered Oil.
  - The stored material in P-174 (GP) be updated from RCRA CC waste to Oily Wastewater.
  - P-594 (PB), P-603 (PB), and P-604 (PB) be transferred from Group 14B as these tanks are equipped with geodesic dome and are therefore classified as internal floating roof tanks.[6]
  - P-009 (GP), P-010 (GP), P-134 (GP), P-136 (GP) (temp inactive), P-137 (GP), P-501 (PB), and P-511 (PB) be removed from the air permit as they are all permanently shutdown.

- Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC. NorthStar is requesting that:
  - P-594 (PB), P-603 (PB), and P-604 (PB) be transferred to Group 13C (Internal floating roof tanks) as compliance with 40 CFR 60 Subpart Kb is deemed equivalent to compliance with 40 CFR 63 Subpart CC. These tanks are equipped with geodesic dome and are therefore classified as internal floating roof tanks.[5]
  - P-521 (PB), P-546 (PB), P-579 (PB), P-587 (PB), P-588 (PB), P-590 (PB), P-601 (PB), and P-602 (PB) be transferred to Group 14C as compliance with 40 CFR 60 Subpart Kb is deemed equivalent to compliance with 40 CFR 63 Subpart CC. 40 CFR 63 Subpart CC is not applicable anymore since the facility is no longer considered as petroleum refinery.
  - Remaining emission sources/members be removed from the air permit as they are all permanently shutdown.

- Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent). NorthStar is requesting that:
  - P-521 (PB), P-546 (PB), P-579 (PB), P-587 (PB), P-588 (PB), P-590 (PB), P-601 (PB), and P-602 (PB) be transferred from Group 14B. Additionally, the stored material in P-546 (PB) is being changed from Crude Oil to Recovered Oil.

- Group 15A – Group 2 Storage Tanks. NorthStar is requesting that:
  - The name of this group be updated from "Group 2 Storage Tanks" to "Petroleum Liquids Storage Tanks" because Group 2 refers to 40 CFR 63 Subpart CC, which is no longer applicable to this facility.
  - The stored material in the following tanks is updated as follows:
    - P-032 (GP) updated to Resid,
    - P-036 (GP) and P-037 (GP) updated to Gas Oil or Cat Charge Stock,
    - P-039 (GP), P-147 (GP), and P-563 (PB) updated to Main Fract Bottoms,
    - P-144 (GP) updated to Light Cycle Oil,
    - P-153 (GP) updated to (Plant TEG) – tetra ethylene glycol,
    - P-154 (GP) updated to Fresh TEG, and
    - P-534 (PB) updated to Gas Oil.

[6] Refer to AMS General Plan Approval 15184-15190 issued on August 24, 2015.

- P-002 (GP), P-003 (GP), P-027 (GP), P-028 (GP), P-030 (GP), P-031 (GP), P-164 (GP) through P-167 (GP), and P-623 (PB) be transferred to Host air permit.
- P-019 (GP), P-020 (GP), P-035 (GP), P-146 (GP), P-150 (GP), P-151 (GP), P-157 (GP), P-515 (PB), P-516 (PB), P-518 (PB) through P-520 (PB), P-535 (PB), P-551 (PB), P-565 (PB), P-567 (PB), P-574 (PB) through P-578 (PB), P-580 (PB), P-584 (PB), P-585 (PB), and P - (433) be removed from the air permit as they are all permanently shutdown.

- Group 15B – Fixed Roof Tanks Subject to Subpart Kb Recordkeeping Requirements. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 17 – Marine Loading Equipment. NorthStar is requesting that all of the emission sources/members under this group be transferred to Host air permit.

- Group 18 – Fluidized Catalytic Cracking Units. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 19 – Inter-Refinery Pipeline Equipment. NorthStar is requesting that the emission source/member under this group be removed from the air permit.

- Group 20 – Alkylation Unit. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 21 – Hydrogen Purification. NorthStar is requesting that the emission source/member under this group be removed from the air permit as it is permanently shutdown.

- Group 22 – Degreasing Vats. Except for P-108 (GP), (GP) Garage – Model E3000, (GP) Bundle Pad – 22 x 6 x 4 Bundle Cleaner (2960 gal), and (GP) Bundle Pad – 22 x 6 x 4 Bundle Cleaner (4578 gal) that remain in NorthStar air permit, NorthStar is requesting that the emission sources/members under this group be removed from the air permit as they are permanently shutdown.

- Group 23 – Butane Isomerization. NorthStar is requesting that the emission source/member under this group be removed from the air permit as it is permanently shutdown.

- Group 25A – Refining Wastewater. NorthStar is requesting that:
  - The group name be updated from "Refining Wastewater" to "Wastewater" as the facility is no longer classified as petroleum refinery.
  - CD-002, CD-003, CD-105, CD-010, CD-106, CD-107, and CD-007 be removed from the air permit air since operation of these units is no longer required by regulation.
  - P-141 (GP) be removed from the air permit as these roughing filters are permanently out of service.
  - "Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC" be removed from P-114 (GP) source name. Similarly, "40 CFR 61, Subpart FF & 40

CFR 63, Subpart CC" be removed from P-667 (PB) source name. As discussed in Section 2 of this report, 40 CFR 61 Subpart FF and 40 CFR 63 Subpart CC are no longer applicable.

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NorthStar will continue to comply with applicable wastewater requirements specified by Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.

- Group 25B – SOCMI Wastewater. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 26 – Benzene and Cumene Production. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- Group 27 – Emergency Generator and Fire Pump. NorthStar is requesting that FP-017 and FP-018 be removed from the air permit as they are both permanently shutdown.

- Group 28 – Internal Combustion Engines. NorthStar is requesting that rIC-002 through rIC-005 be removed from the air permit as they are all permanently shutdown.

- Group 29 – Stacks. NorthStar is requesting this group to be appropriately updated based on the revision requested above. Please refer to Appendix D of this submittal for the marked version of Group 29 table.

- Group IN – Insignificant Activities. NorthStar is requesting that all of the emission sources/members under this group be removed from the air permit as they are all permanently shutdown.

- FACILITY INVENTORY INDEX. NorthStar is requesting this group to be appropriately updated based on the revision requested above. Please refer to Appendix D of this submittal for the marked version of FACILITY INVENTORY INDEX table.

2. Section D – Source Specific Requirements. NorthStar is requesting that this section be updated based on regulatory discussion reflected in Section 2 of this submittal, items discussed above, City of Philadelphia Air Management Service forms included in this submittal, as well as marked up version of Section D as provided in Appendix D of this submittal.

3. Section G – Alternative Monitoring Protocol for Flares. NorthStar is requesting that this section is removed from the air permit as this section is superseded by AMS Permit #IP18-000260 &263.

4.2 General Plan Approvals

The following General Plan Approvals will be incorporated into the NorthStar Title V with this modification. Refer to Appendix D of this submittal for a marked up copy of these documents.

- AMS Permit #13001 Reactivation of Tank PB 843 (P-590) [No changes requested]
- AMS Permit #15184-15190 Adding geodesic dome to Tanks GP 826 (P-579), 840 (P-587), 841

(P-588), 847 (P-594), 884 (P-602), 885 (P-603) and 886 (P-604) [Note that a geodesic dome is only installed on Tanks 847 (P-594), 885 (P-603), and 886 (P-604). Remaining tanks are external floating roof without a dome.]

- AMS Permit #15246 — Repair and reactivation of Tank PB 7300 (P-624) [No changes requested]
- AMS Permit #IP17-000133 — Reactivation of Tank GP 219 (P-144) [No changes requested]

4.3 Installation Permits

The following Installation Permits will be incorporated into the NorthStar Title V with this modification. Refer to Appendix D of this submittal for a marked up copy of these documents.

4.3.1 Installation Permits without Changes

The following Installation Permit will be incorporated into the NorthStar Title V with this modification. No changes are requested to this permit.

- AMS Permit #IP18-000373-374 — Flood Control RICE For flood control at GP 2nd and J and Flood Control RICE For flood control at Girard point 2-separator

4.3.2 Installation Permit 13178

NorthStar proposes that references associated with 40 CFR 60 Subpart A, 40 CFR 60 Subpart J, 40 CFR 60 Subpart Ja, 40 CFR 63 Subpart A, and 40 CFR 63 Subpart CC regulations be removed from Installation Permit #13178 when the permit is transferred to the NorthStar Title V permit. Although no longer a petroleum refinery, NorthStar will continue to comply with applicable 40 CFR 60 Subpart J requirements for flares until Consent Decree Order 05-CV-2866 is terminated.

4.3.3 Installation Permits #IP18-000260 & #IP18-000263

NorthStar proposes that references associated with 40 CFR 60 Subpart A, 40 CFR 60 Subpart J, 40 CFR 60 Subpart Ja, 40 CFR 63 Subpart A, and 40 CFR 63 Subpart CC regulations be removed from Installation Permits #IP18-000260 & #IP18-000263 when the permits are transferred to the NorthStar Title V permit. There are no petroleum refining operations at NorthStar; thus, references to 40 CFR 60 Subpart Ja and 40 CFR 63 Subpart CC are not applicable anymore. Although no longer a petroleum refinery, NorthStar will continue to comply with applicable 40 CFR 60 Subpart J requirements for flares until Consent Decree Order 05-CV-2866 is terminated.

4.4 Plan Approvals Permits

The following Plan Approval Permits will be incorporated into the NorthStar Title V with this modification. Refer to Appendix D of this submittal for a marked copy of these documents

4.4.1 Plan Approval 13260

NorthStar proposes that references associated with 40 CFR 60 Subpart A, 40 CFR 60 Subpart J, 40 CFR 60 Subpart Ja, 40 CFR 63 Subpart A, and 40 CFR 63 Subpart CC regulations be removed from Plan Approval 13260 when the permits are transferred to the NorthStar Title V permit. There are no petroleum refining operations at NorthStar; thus, references to 40 CFR 60 Subpart Ja and 40 CFR 63 Subpart CC are not

applicable anymore. Although no longer a petroleum refinery, NorthStar will continue to comply with applicable 40 CFR 60 Subpart J requirements for flares until Consent Decree Order 05-CV-2866 is terminated.

4.4.2 Plan Approval 15247

NorthStar proposes that references associated with 40 CFR 60 Subpart Ja regulations be removed from Plan Approval 15247 when the permits are transferred to the NorthStar Title V permit. Boiler #45 will not fire refinery fuel gas and will only fire natural gas. Thus, references to 40 CFR 60 Subpart Ja are no longer applicable.

4.4.3 Plan Approval IP16-000269

NorthStar will only operate the following sources listed in Plan Approval IP16-000269; as such, NorthStar is requesting that associated applicable conditions be transferred to its Title V permit:

- (6) Boiler House #3 [Boiler #37, Boiler #39, Boiler #40]
- (16) Fugitive leaks

Host will only operate the following sources listed in Plan Approval IP16-000269; as such, Host may be requesting that associated applicable conditions be transferred to its Title V permit.

- (19) Girard Point Barge Loading (P130)
- (20) Point Breeze Marine Barge Loading (P636)

The remaining sources in this plan approval will be permanently shutdown and may not be transferred to any air permit.

APPENDIX A. AREA MAP


"BB" SUBSTATION
PB PROPANE TERMINAL
PROPANE AND PP RACK
PB OLD SCALE HOUSE
"AN" SUBSTATION
PB NEW SCALE HOUSE
Northstar's Responsibility
P-529 (PB)Tank # 144
P-530 (PB)Tank # 145
P-534 (PB)Tank # 151
P-563 (PB)Tank #663
P-571 (PB)Tank #672
P-582 (PB)Tank #833
"U" SUBSTATION
"BS" SUBSTATION
"AG" SUBSTATION
"Y" SUBSTATION
"K" SUBSTATION
No. 22 BOILER HOUSE
ASPHALT UNIT
BLDG 6631 UNLOADER SHELTER
BLDG 6632 SUPERVISOR SHELTER
"UA" SUBSTATION
"BC" SUBSTATION
"AK" SUBSTATION
"AW" SUBSTATION
"AQ" SUBSTATION
"BI" SUBSTATION
BELMONT TERMINAL
"AS" SUBSTATION
P.B. MAIN OFFICE BLDG.
ANNEX
BLENDER
QUALITY LAB
"AR" SUBSTATION
POINT BREEZE
"W" SUBSTATION
COMMON 210 BIO/BFW
"AP" + "J" SUBSTATION
"AY" SUBSTATION
No. 864 HDS UNIT
"BR" SUBSTATION IRPL PUMP/METER STATION "PDC" BLDG
"BE" SUBSTATION
"AJ" SUBSTATION
No. 868 CAT. UNIT
"BL" SUBSTATION
NorthStar Responsibility
P-032 (GP)T-273
P-036 (GP)T-282
P-037 (GP)T-284
P-039 (GP)T-494
P-144 (GP)T-219
P-147 (GP)T-227
P-153 (GP)T-794
P-154 (GP)T-796
P-175 (GP)T-3000
P-176 (GP)T-3001
P-177 (GP)T-3002
P-178 (GP)T-3004
P-179 (GP)T-3005
"BD" SUBSTATION
No. 14 SERVICE BLDG. / CENTRAL CONTROL ROOM
"BQ" SUBSTATION
No. 869 ALKY UNIT
"AL" SUBSTATION
"BA" SUBSTATION
869/870 BRM CONTROL ROOM
LSG UNIT No. 870
No. 867 SULFUR UNIT
859 / NORTH COMPLEX
"BM" SUBSTATION
"BU" SUBSTATION
"BG" SUBSTATION
"AD" SUBSTATION
"BP" SUBSTATION
No. 15 PUMPHOUSE
"AV" SUBSTATION
"AM" SUBSTATION
"BO" SUBSTATION
CENTRAL STORES
No. 137 CRUDE UNIT
CONTRACTOR PARKING
TANKS: 3000 (500 GAL) 3001 (500 GAL) 3002 (1000 GAL)
CO BOILER
3rd. STREET OFFICE BLDG.
No. 1232 CAT. UNIT
No. 532 SULFUR UNIT
"AU" SUBSTATION
TANKS: 3004 (1000 GAL) 3005 (500 GAL)
W.W.T.P.
GARAGE
No. 433 HF UNIT
No. 440 MAINT. BUILDING
CANTEEN
NEW GP TRUCK SCALEHOUSE
NORTH TANK FIELD
#3 W. T. P.
OLD CUMENE
1332 REFORMER
S24 GATE
#3 BOILER HOUSE
TRAINING CENTER
ENVIRO. LAB
MAIN OFFICE BUILDING
NEW CUMENE (SCCR)
GIRARD POINT
NOTE
1. SEE 9-0-0/01031D & G-23001 FOR GP SUBSTATIONS
#53 GATE LOCKERHOUSE
SOUTH TANK FIELD
B + S OFFICE
G. P. SCALE HOUSE
No. 2 WAREHOUSE
SCHUYLKILL RIVER
0 100 300 500 700
200 FOOT GRID BASED ON PENNSYLVANIA STATE RECTANGULAR COORDINATE SYSTEM, SOUTH ZONE 1927 N.A. DATUM
11 5/22/14 ADDED SUBSTATION AU & PER MOC# NTF20130207-3 ADDED GP SCALE HOUSE AT GATE 24 LANIER AVE. DJW GJK
10 1/8/14 PH1300127 ADDED EXISTING SUBSTATIONS: BP, BQ, BU, AL, AD, AR, AS, AU, BR, BS, J, U. REMOVED H & BF. ADDED TRAILERS CONTRACTOR LOT. GJK PG
9 F-2742 12/19/13 ADDED NORTH YARD SUBSTATION 'UA' & SHELTERS - SUPERVISORS & UNLOADERS. TF4 ADDED SUBSTATION 'AV' GJK NR
8 F-2685 12/16/13 PER MOC REF GEN20120116-1 ADDED BRM BLDG COMBINED CONTROL ROOM 210 & PB BIO/BFW & NOTE FOR GP SUBSTATIONS GJK JC
7 G-1329 1/25/11 ADDED BLDGS. 6621, 6625, 6626, 6627, 6624 AND 6614 OLD 870 C.R PER MOC# 3BH20100928-1 PGD MP
6 G-1207 1/25/11 ADDED STRUCTURE NUMBERS FOR WHARVES 1, 2 + 3 DMR JCJ
5 G-1199 10/27/10 ADDED BLAST RESISTANT CONTROL ROOM BUILDING #6623 PER M.O.C. #13720090903-1 FGJ
4 8/20/07 REVISED TO ADD REFERENCE TO NEW LSG UNIT 870 AS SHOWN DSG REA
RECORD OF ALTERATIONS
THIS PRINT TO BE RETURNED TO THE OFFICE WHEN WORK IS COMPLETED
THIS DRAWING OWNED BY PHILADELPHIA ENERGY SOLUTIONS IS CONDITIONALLY LOANED TO
PHILADELPHIA ENERGY SOLUTIONS
3144 PASSYUNK AVE. PHILADELPHIA, PA. 19145
BUILDINGS & STRUCTURES MAP PHILADELPHIA REFINERY
PLANT TITLE: PHILA REFINERY
DRAWING NUMBER
9-0-0 25031D
11

APPENDIX B. TITLE V APPLICATION AND ADDENDUM 1 FORMS

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

Title V OP Number: _____
Date: _____

TITLE V OPERATING PERMIT APPLICATION

Section 1 - General Information

1.1 Application Type

Type of permit for which application is made: (Check one)

☐ Initial

☐ Renewal Operating Permit No._____

☒ Application Revision - provide date of original Title V Application or OP No.: V06-016

1.2 Plant Information

Federal Tax ID/Plant Code: 13-3879343

Firm Name: NorthStar Contracting Group, Inc.

Plant Name: Philadelphia Energy Solutions Refining and Marketing, LLC

NAICS Code: 238910

SIC Code: 1795

Description of NAICS Code: Site Preparation Contractors

Description of SIC Code: Wrecking and Demolition work

County: Philadelphia

Municipality: Philadelphia

Latitude: 39.902434

Longitude: -75.224849

Horizontal Reference Datum:

Horizontal Collection Method:

Reference Point:

1.3 Contact Information

Name: Robert J. Armstrong

Title: Sr. Project Manager

Address: 2250 E Adams Ave
Philadelphia, PA, 19124

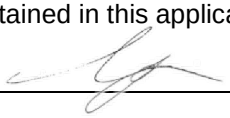
Telephone Number: 440-228-1524

Email Address: rarmstrong@northstar.com

1.4 Certification of Truth, Accuracy and Completeness

Note: This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate, and complete.

(Signed)  Date: 10/15/2020

Name (Typed): Gary Bowman Title: President

Section 2 - Applicable Requirements for the Entire Site

Describe and cite all applicable requirements pertaining to the entire site.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list site level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Citation No.	Citation Limitation	Limitation Used

Section 3 - Site Inventory

Give a complete list of all air pollution sources, control equipment, emission points, and fuel material locations within this site.

For renewals, only list sources not included in current Title V Operating Permit or sources which are now subject to Compliance Assurance Monitoring (CAM) requirements of 40 CFR Part 64. If preprinted information is provided, correct and/or add any new sources as necessary. Note: One (1) of the following sections (5, 6 or 7) of the application must be completed for each new source listed here.

Unit ID	Company Designation	Unit Type	CAM
EM-002 (GP)	Flood Control RICE for flood control at GP 2nd and J	Emergency Combustion Unit	
EM-003 (GP)	Flood Control RICE for flood control at GP 2-	Emergency Combustion Unit	
P-590 (PB)	Tank #843, EFR, >40M Gal, Crude Oil	Process	
P-594 (PB)	Tank #847, IFR, Crude Oil	Process	
P-603 (PB)	Tank #885, IFR, >40M Gal, Crude Oil	Process	
P-604 (PB)	Tank #886, IFR, >40M Gal, Crude Oil	Process	
CU-018 (GP)	#37 Boiler, 495 MM Btu/hr, Natural Gas	Boiler	
CU-020 (GP)	#39 Boiler, 495 MM Btu/hr, Natural Gas	Boiler	
CU-021 (GP)	#40 Boiler, 660 MM Btu/hr, Natural Gas	Boiler	
CU-022 (GP)	#45 Boiler, 350 MM Btu/hr, Natural Gas	Boiler	
S-125 (GP)	Used by CU-018, 37 Boiler, Used by CU-020, 39 Boiler, Used by CU-021, 40 Boiler	Boiler	
S-126 (GP)	Used by CU-022, 45 Boiler	Boiler	
S-924 (PB)	Used by P-590, Tank #843	Process	
S-929 (PB)	Used by P-594, Tank #847	Process	
S-938 (PB)	Point of Air Emission Used by P-603, Tank #885	Process	
S-939 (PB)	Point of Air Emission Used by P-604, Tank #886	Process	
S-3413 (GP)	Point of Air Emission Used by EM-002 (GP)	Emergency Combustion	
S-3414 (GP)	Point of Air Emission Used by EM-003 (GP)	Emergency Combustion	
CD-015(GP)	CO Oxidation Catalyst for #45 Boiler	Control Device	
CD-016(GP)	Selective Catalytic Reduction for #45 Boiler	Control Device	
CD-017(GP)	Wet Electrostatic Precipitator for #45 Boiler	Control Device	

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
01	CU-018 (GP)
01	CU-0020 (GP)
01	CU-021 (GP)
01	CU-022 (GP)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	See Requirements at the Source Leve		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
08	Equipment VOC Leak Components Not Subject to NSPS or NESHAP

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
08 For Crude Oil and Recovered Oil Tanks Only	40 CFR 63.2346(c)		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
13C	P-603 (PB)
13C	P-604 (PB)
13C	P-594 (PB)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	There are no changes to Group 13C Requirements		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
14C	P-590 (PB)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	There are no changes to Group 14C Requirements		

Section 4 - Source Group (Optional)

4.1 Source Group Definition

Define groups of source(s) that are subject to one or more applicable requirements that apply to all source(s) in the group.

For renewals, only list source groups not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Group No.	Source ID (for source(s) in this group)
27	EM-002 (GP)
27	EM-003 (GP)

4.2 Applicable Requirements for Source Groups

For renewals, only list group level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Describe and cite all applicable requirements pertaining to all source groups.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

Group No.	Citation No.	Citation Limitation	Limitation Used
	See Requirements at the Source Level		

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new combustion unit listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: EM-002 (GP)

b. Company Designation: Flood Control RICE at GP 2nd and J

c. Plan Approval or Operating Permit No.: AMS Permit # IP18-000373-374

d. Manufacturer: John Deere

e. Model No.: 6068HF 285 - 2012

f. Source Description: Flood Control RICE For flood control at GP 2nd and J

g. Rated Heat Input/Thruput: 374.0 MBTU/hr

h. Installation Date: 2018

i. Exhaust Temperature _____ Units _____

j. Exhaust % Moisture _____

k. Exhaust Flow Volume: _____ SCFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
EM-002 (GP)	Flood Control RICE at GP 2nd and J	S-3413 (GP)	Point of Air Emission Used by EM-002	100

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Diesel		374 MBTU/hr	

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.1 of the application.

Maximum amount of hours of source operation per year: 500 on Emergency Basis

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Diesel				500		

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Diesel	IP18-000373 Dated 11/9/2018	NSPS Subpart IIII	

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new combustion unit listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: EM-003 (GP) b. Company Designation: Flood Control RICE at GP 2nd and J

c. Plan Approval or Operating Permit No.: AMS Permit # IP18-000373-374

d. Manufacturer: Caterpillar e. Model No.: C9 2012

f. Source Description: Flood Control RICE For flood control at GP 2-separator

g. Rated Heat Input/Thruput: 700.0 MBTU/hr h. Installation Date: 2018

i. Exhaust Temperature _____ Units _____ j. Exhaust % Moisture _____ k. Exhaust Flow Volume: _____ SCFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
EM-003 (GP)	Flood Control RICE at GP 2-separator	S-3414 (GP)	Point of Air Emission Used by EM-**003**	100

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Diesel		374 MBTU/hr	

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.1 of the application.

Maximum amount of hours of source operation per year: 500 on Emergency Basis

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time
Diesel				500		

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Diesel	IP18-000373 Dated 11/9/2018	NSPS Subpart IIII	

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new combustion unit listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-018 (GP)

b. Company Designation: # 37 Boiler

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016 and RACT Plan Approval No. RACT Plan Approval No. IP16-000269

d. Manufacturer: Erie City

e. Model No.: Chevron/Gulf Design

f. Source Description: **Boiler**

g. Rated Heat Input/Thruput: 495 MMBTU/hr

h. Installation Date: 1952

i. Exhaust Temperature ~216 Units **ºC**

j. Exhaust % Moisture ~4-6

k. Exhaust Flow Volume: ~155,468 SCFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
CU-018 (GP)	# 37 Boiler	S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	100

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Natural Gas		495 MMBTU/hr	

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.1 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Natural Gas	RACT Plan Approval IP16-000269	Ultra low NOX burners are installed on #37 boiler; sources proposing installation of Ultra low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform combustion tuning annually, which "shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5). Limitation for No.3 BH established by CEMS based on 30 day rolling average set at 495 MMBTU/hr for #37 boiler. Installation of FGR. 0.040 Lbs. NOx/MMBTU 30_day rolling average 0.10 lbs. NOx/MMBTU daily average	

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new combustion unit listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-020 (GP)

b. Company Designation: # 39 Boiler

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016 and RACT Plan Approval No. RACT Plan Approval No. IP16-000269

d. Manufacturer: Erie City

e. Model No.: Chevron/Gulf Design

f. Source Description: Boiler

g. Rated Heat Input/Thruput: 495 MMBTU/hr

h. Installation Date: 1952

i. Exhaust Temperature ~216 Units **ºC**

j. Exhaust % Moisture ~4-6%

k. Exhaust Flow Volume: ~155,468 SCFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
CU-020 (GP)	# 39 Boiler	S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	100

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Natural Gas		495 MMBTU/hr	

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.1 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Natural Gas	RACT Plan Approval IP16-000269	Ultra low NOX burners are installed on #39 boiler; sources proposing installation of Ultra low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform combustion tuning annually, which "shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5). Limitation for No.3 BH established by CEMS based on 30 day rolling average set at 495 MMBTU/hr for #39 boiler. Installation of FGR. 0.040 Lbs. NOx/MMBTU 30_day rolling average 0.10 lbs. NOx/MMBTU daily average	

Section 5 – Combustion Operational Inventory

(Complete this section for each combustion source at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new combustion unit listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-021 (GP) b. Company Designation: # 40 Boiler

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016

d. Manufacturer: Erie City e. Model No.: Chevron/Gulf Design

f. Source Description: Boiler

g. Rated Heat Input/Thruput: 660 MMBTU/hr h. Installation Date: 1954

i. Exhaust Temperature ~216 Units **ºC** j. Exhaust % Moisture ~4-6 k. Exhaust Flow Volume: ~207,290 SCFM

5.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
CU-021 (GP)	# 40 Boiler	S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler	100

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Natural Gas		660 MMBTU/hr	

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.1 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Natural Gas	RACT Plan Approval IP16-000269	Ultra low NOX burners are installed on #40 boiler; sources proposing installation of Ultra low NOX burners to comply with RACT requirements 25 PA Code 129.91(f) shall perform combustion tuning annually, which "shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5). Limitation for No.3 BH established by CEMS based on 30 day rolling average set at 660 MMBTU/hr for #40 boiler. Installation of FGR. 0.040 Lbs. Nox/MMBTU 30_day rolling average 0.10 lbs. Nox/MMBTU daily average	

Section 5 - Combustion Operational Inventory

(Complete this section for each combustion source at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new combustion unit listed in Section 3 of this application.

5.1 General Source Information

a. Unit ID: CU-022 (GP)

b. Company Designation: # 45 Boiler

c. Plan Approval or Operating Permit No.: Plan Approval No. 15247

d. Manufacturer: Rentech Boiler Systems

e. Model No.: 2001-21

f. Source Description: Steam Boiler

g. Rated Heat Input/Thruput: 350 MMBTU/hr

h. Installation Date: Used Rentech Boiler, Relocated from Sunoco Inc. (R&M) Eagle Point Refinery in 2014

i. Exhaust Temperature: ~216 Units: **ºC**

j. Exhaust % Moisture: ~4-6

k. Exhaust Flow Volume: ~110,054 SCFM

5.2 CAM Information

Yes	No	
☒	☐	Emissions unit uses a control device to achieve compliance.
☒	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

5.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Wet	Percent Flow
CU-022 (GP)	# 45 Boiler	CD-017	Wet Electrostatic Precipitator	100
CD-017	Wet Electrostatic Precipitator	CD-015	CO Oxidation Catalyst	100
CD-015	CO Oxidation Catalyst	CD-016	NOx Selective Oxidation Catalytic Recover	100
CD-016*	NOx Selective Oxidation Catalytic Recovery	S-126 (GP)	Used by CU-022, 45 Boiler	100

*Ammonia is turned off sometimes

5.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Natural Gas		350 MMBTU/hr	

5.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

5.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 5.1 of the application.

Maximum amount of hours of source operation per year: _____

Fuel/SCC	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

5.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/SCC	Citation No.	Citation Limitation	Limitation Used
Refinery Gas/Natural Gas	PA 14149 Condition 1. Dated 2 September 2014	The boiler (Boiler #45) shall be installed, maintained, and operated in accordance with the manufacturer's specifications and the specifications in the application.	PES Complies with this Requirement
Refinery Gas/Natural Gas	PA 14149 Condition 2. Dated 2 September 2014 Plan Approval 15247 to Amend Plan Approval 14149 Dated 19 May 2016	Emissions from the Boiler #45 shall not exceed the following: NOx 5.06 TPY SO2 15.15 TPY CO 5.69 TPY VOC 0.00094 lb/MMBtu 1.44 TPY PM 0.0040 lb/MMBtu 6.13 TPY H2SO4 2.32 TPY Pb 7.61E-04 TPY Ammonia 3.44 TPY GHG (CO2e) 182,774 TPY	PES Complies with this Requirement by condition 10 of Plan Approval IP16-000264
Refinery Gas/Natural Gas	PA 14149 Condition 4. Dated 2 September 2014	The boiler (Boiler #45) CO emissions shall not exceed: (a) 3.90 ppmvd @7% O2 [25 PA Code 127.1] (b) 1% by volume of exhaust gasses	PES Complies with this Requirement
Refinery Gas/Natural Gas	PA 14149 Condition 5. Dated 2 September 2014	Ammonia slip from Boiler #45 shall not exceed 5.0 ppmvd @3% O2	
Refinery Gas/Natural Gas	PA 14149 Condition 6. Dated 2 September 2014	The Permittee shall only burn refinery fuel gas or natural gas in Boiler #45. The H2S in the fuel gas burnt in the boiler shall not be in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and 60 ppmv determined daily on a 365 successive calendar day rolling average basis.	
Refinery Gas/Natural Gas	PA 14149 Condition 7. [25 Pa Code §123.41] Dated 2 September 2014	The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: (a) Equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour (b) Equal to or greater than 60% at any time	

Refinery Gas/Natural Gas	PA 14149 Condition 9. Dated 2 September 2014	Boiler #45 shall be installed and be operated with low NOx burners, flue gas recirculation, CO oxidation catalyst, selective catalytic reduction, and wet electrostatic precipitator.	
Refinery Gas/Natural Gas	PA 14149 Condition 10. [40 CFR 60.48b(b)] Dated 2 September 2014	The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration of NOx and O2 emission discharged to the atmosphere. The CEMs shall meet NOx and O2 Performance Specs in 40 CFR 60 Appendix and 25 PA Code Chapter 139.	
Refinery Gas/Natural Gas	PA 14149 Condition 11. Dated 2 September 2014	The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.107a(a)(2).	
Refinery Gas/Natural Gas	PA 14149 Condition 12. Dated 2 September 2014	The Permittee shall conduct tune-up of Boiler #45 every 5 years to demonstrate continuous compliance as specified in [40 CFR 63.7540(a)(10)]	
Refinery Gas/Natural Gas	PA 14149 Condition 13. Dated 2 September 2014	The Permittee shall comply with the requirement of NOx Budget Source in 25 Pa Code 145.	
Refinery Gas/Natural Gas	PA 14149 Condition 14. Dated 2 September 2014	The Permittee shall conduct stack tests to determine compliance as follows: (a) Compliance with CO, PM/PM10/PM2.5, and Ammonia emissions shall be demonstrated every 5 years from the previous stack test. (b) The operating parameter (max voltage, max ammonia injection, and min inlet temp) may be modified through subsequent AMS approved stack tests.	
Refinery Gas/Natural Gas	PA 14149 Condition 15 Dated 2 September 2014	The Permittee shall conduct annual checks of CO level in stack using handheld instrument to assure performance of CO oxidation catalyst.	
Refinery Gas/Natural Gas	PA 14149 Condition 16 Dated 2 September 2014	The Permittee shall monitor and keep records according to [25 Pa Code §127.12b(c)]	

Refinery Gas/Natural Gas	PA 14149 Condition 17 Dated 2 September 2014	The Permittee shall, within 2 hours of any occurrence of any malfunction of Boiler #45 which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within 2 working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of the malfunction(s) and any corrective action.	
Refinery Gas/Natural Gas	Plan Approval 15247 to Amend Plan Approval 14149 Dated 19 May 2016	The boiler may not exceed a 30 day rolling average NOx limit of 0.012 lb/MMBtu. The 30 day rolling limit assures compliance with 40 CFR 60.102a(g)(2)(i). Allow a NOx emission limit of 10.0 lbs/hr during start-ups, shutdowns, and maintenance periods. Periods of startup, shut downs, and maintenance shall not exceed 200 hours per rolling 12 month period. Clarify emission limit, compliance methods, and calculation methods for emission NOx emission limits regarding start-ups and shut-downs.	

Section 6 - Incinerator Operational Inventory – Not Applicable

(Complete this section for each incinerator at the site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new incinerator listed in Section 3 of this application.

6.1 General Source Information

a. Unit ID: _____ b. Company Designation: _____

c. Plan Approval or Operating Permit No.: _____

d. Manufacturer: _____ e. Model No.: _____

f. Source Description: _____

g. Rated Heat Input/Thruput: _____ h. Installation Date: _____

i. Exhaust Temperature _____ Units _____ j. Exhaust % Moisture _____ k. Exhaust Flow Volume: _____ SCFM

l. Incin. Capacity: _____ Lbs/Hr m. Primary Burner Heat Input: _____ Units _____

n. Exhaust % CO_2: _____ o. Secondary Burner Heat Input: _____ Units _____

p. Incinerator Class: _____

q. Waste Type: _____ r. Waste BTU/Lb: _____

6.2 CAM Information

Yes	No	
☐	☐	Emissions unit uses a control device to achieve compliance with emissions limitations or standards.
☐	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both boxes are checked "Yes.")

6.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow

6.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel / Material	Associated SCC	Max Throughput Rate	Firing Sequence

6.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

Maximum amount of hours of source operation per year: _____

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

6.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 6.3 of this application.

Maximum amount of hours of source operation per year: _____

Fuel/Waste	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

6.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☐ No changes from current Title V Operating Permit.

Fuel/Waste	Citation No.	Citation Limitation	Limitation Used

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new process listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-590 (PB)

b. Company Designation: Tank # 843, EFR

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016 and AMS Permit # 13001

d. Manufacturer:

e. Model No.:

f. Source Description: Process

g. Rated Heat Input/Thruput:

h. Installation Date: 1954

i. Exhaust Temperature _____ Units _____

j. Exhaust % Moisture _____

k. Exhaust Flow Volume: _____ SCFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
P-590 (PB)	Process	S-925 (PB)	Emission Used by P-590, Tank # 843	100

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Maximum amount of hours of source operation per year: _____

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
		Source will comply with Group 14C requirements	

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials

7.10 Request for Confidentiality

Do you request that the information on this page be considered confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirement of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new process listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-594 (PB)

b. Company Designation: Point Breeze Tank #847, IFR

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016 and AMS Permit #15184-15190

d. Manufacturer: _____

e. Model No.: _____

f. Source Description: **Process**

g. Rated Heat Input/Thruput: _____

h. Installation Date: _____

i. Exhaust Temperature _____ Units _____

j. Exhaust % Moisture _____

k. Exhaust Flow Volume: _____ SCFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
P-594 (PB)	Process	S-929 (PB)	Point of Air Emission Used by P-594, Tank # 847	100

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Maximum amount of hours of source operation per year: _____

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
		Source will comply with Group 13C requirements	

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials

7.10 Request for Confidentiality

Do you request that the information on this page be considered confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirement of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new process listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-603 (PB)

b. Company Designation: Point Breeze Tank #885, IFR

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016 and AMS Permit #15184-15190

d. Manufacturer: _____

e. Model No.: _____

f. Source Description: Process

g. Rated Heat Input/Thruput: _____

h. Installation Date: _____

i. Exhaust Temperature _____ Units _____

j. Exhaust % Moisture _____

k. Exhaust Flow Volume: _____ SCFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☒	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
P-603	Process	S-938 (PB)	Point of Air Emission Used by P-603, Tank # 885	100

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Maximum amount of hours of source operation per year: _____

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
		Source will comply with Group 13C requirements	

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials

7.10 Request for Confidentiality

Do you request that the information on this page be considered confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirement of 25 Pa. Code§ 127.411(d).

Section 7 - Process Operational Inventory

(Complete this section for each process at this site. Duplicate this section as needed).

For renewals, review and correct any pre-printed information and add additional sections for any new process listed in Section 3 of this application.

7.1 General Source Information

a. Unit ID: P-604 (PB)

b. Company Designation: Point Breeze Tank #886, IFR

c. Plan Approval or Operating Permit No.: Title V Operating Permit No. V06-016 and AMS Permit #15184-15190

d. Manufacturer: _____

e. Model No.: _____

f. Source Description: **Process**

g. Rated Heat Input/Thruput: _____

h. Installation Date: _____

i. Exhaust Temperature _____ Units _____

j. Exhaust % Moisture _____

k. Exhaust Flow Volume: _____ SCFM

7.2 CAM Information

Yes	No	
☐	☒	Emissions unit uses a control device to achieve compliance with emission limitations or standards.
☐	☐	Potential precontrol emissions of applicable pollutant are at least 100 percent of the major source amount.

(Addendum 3 must be completed if both are checked "Yes")

7.3 Exhaust System Components

Explain how the exhaust components are configured:

From Unit	Unit Description	To Unit	Unit Description	Percent Flow
P-604 (PB)	Process	S-939 (PB)	Point of Air Emission Used by P-604, Tank # 886	100

7.4 Source Classification Code (SCC) Listing for Standard Operation

Fuel/Material	Associated SCC	Max Throughput Rate	Firing Sequence
Crude Oil			

7.5 Maximum Fuel Physical Characteristics

If taking limitations on Fuel Physical Characteristics, see instructions.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

*FML = Fuel Material Location

7.6 Limitations on Source Operation

Complete this section if you are requesting a limitation on operational hours and/or a permit limitation on the throughput rate equal to or lower than that stated in Section 7.3 of this application.

Maximum amount of hours of source operation per year: _____

Fuel	Hours/Day	Days/Week	Days/Year	Hours/Year	Max Thruput	Units/Time

7.7 Source Applicable Requirements

Describe and cite all applicable requirements pertaining to this source.

Note: A Method of Compliance Worksheet (Addendum 1) must be completed for each requirement listed.

For renewals, only list source level requirements not included in the current Title V Operating Permit. If there are no changes, check the box to the right.

☒ No changes from current Title V Operating Permit.

Fuel/Product	Citation No.	Citation Limitation	Limitation Used
		Source will comply with Group 13C requirements	

7.8 Raw Materials

List all of the raw materials used in this process to the extent that this information is needed to determine or regulate emissions.

7.9 Processing Steps

To the extent that this information is needed to determine or regulate emissions, list all of the processing steps and raw materials for each step utilized to complete the material or product.

Step	Description	Raw Materials

7.10 Request for Confidentiality

Do you request that the information on this page be considered confidential?

☐ Yes ☒ No

If yes, include a justification for confidentiality that meets the requirement of 25 Pa. Code§ 127.411(d).

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new control device listed in Section 3 of this application.

8.1 General Control Device Information

a. Unit ID: CD-015

b. Company Designation: CO Oxidation Catalyst on Boiler No. 45

c. Used by Source(s): CU-022

d. Type: Catalytic Reduction

e. Pressure Drop in H_20:

f. Capture Efficiency:

g. Scrubber Flow Rate (GPM):

h. Manufacturer: Durr Environmental, Inc.

i. Model No.: Sunoco specified design

j. Installation Date: 2014

8.2 Control Device Efficiencies for this Control Device:

Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Efficiency Estimate
CO		90%	Design Efficiency at 561 °F

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new control device listed in Section 3 of this application.

8.1 General Control Device Information

a. Unit ID: CD-016

b. Company Designation: Selective Catalytic Reduction on Boiler No. 45

c. Used by Source(s): CU-022

d. Type: Catalytic Reduction

e. Pressure Drop in H_20:

f. Capture Efficiency:

g. Scrubber Flow Rate (GPM):

h. Manufacturer: Durr Environmental, Inc.

i. Model No.: Sunoco specified design

j. Installation Date: 2014

8.2 Control Device Efficiencies for this Control Device:

Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Efficiency Estimate
NOx		92.5%	Design Efficiency at 561 ^oF

Section 8 - Control Device Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new control device listed in Section 3 of this application.

8.1 General Control Device Information

a. Unit ID: CD-017

b. Company Designation: Wet Electrostatic Precipitator for Boiler No. 45

c. Used by Source(s): CU-022

d. Type: Single Stage Wet Electrostatic Precipitator

e. Pressure Drop in H_20: Across Collector Only

f. Capture Efficiency:

g. Scrubber Flow Rate (GPM):

h. Manufacturer: PPC Industries

i. Model No.: 12R-144-234

j. Installation Date: 2014

8.2 Control Device Efficiencies for this Control Device:

Pollutant Name	CAS No.	Estimate Control Efficiency	Basis for Efficiency Estimate
PM/PM10/PM2.5			

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new stack/flue listed in Section 3 of this application.

9.1 General Stack/Vent Information

a. Unit ID: S-125 (GP)

b. Company Designation: Used by CU-018, 37 Boiler, Used by CU-020, 39 Boiler, Used by CU-021, 40 Boiler

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: CU-018, CU-020, CU-021

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

---

a. Unit ID: S-126 (GP)

b. Company Designation: Used by CU-022, Boiler 45

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity <<V2>>:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: CU-022 (GP)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new stack/flue listed in Section 3 of this application.

9.1 General Stack/Vent Information

a. Unit ID: S-924 (PB) b. Company Designation: Used by P-590, Tank #843

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: Used by P-590 (PB)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

---

a. Unit ID: S-929 (PB) b. Company Designation: Used by P-594, Tank #847

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity <<V2>>:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: P-594 (PB)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new stack/flue listed in Section 3 of this application.

9.1 General Stack/Vent Information

a. Unit ID: S-939 (PB) b. Company Designation: Point of Air Emission Used by P-604, Tank #886

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: P-604 (PB)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

---

a. Unit ID: S-3413 (GP) b. Company Designation: Point of Air Emission Used by EM-002 (GP)

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity <<V2>>:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: EM-002 (GP)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

Section 9 - Stack/Flue Information (duplicate this section as needed)

For renewals, review and correct any pre-printed information and add additional sections for any new stack/flue listed in Section 3 of this application.

9.1 General Stack/Vent Information

a. Unit ID: S-3414 (GP) b. Company Designation: Point of Air Emission Used by EM-003 (GP)

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: EM-003 (GP)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

---

a. Unit ID: S-938 (PB) b. Company Designation: Point of Air Emission Used by P-603, Tank #885

c. Discharge Type:

d. Diameter (ft): Height (ft): Base Elevation (ft):

e. Exhaust Temperature: Exhaust % Moisture: Exhaust Velocity <<V2>>:

f. Exhaust Volume: ACFM Exhaust Volume: SCFM

g. Distance to Nearest Property Line (ft):

h. Weather Cap?: ☐ Yes ☐ No

i. Used by Sources: P-603 (PB)

j. Latitude: Longitude:

Horizontal Reference Datum: Horizontal Collection Method: Reference Point:

Section 10 - Fuel Material Location (FML) Information (Optional) – Not Applicable

For renewals, review and correct any pre-printed information and add additional sections for any new FML listed in Section 3 of this application.

10.1 Fuel Material Location Information

a. FML ID No.: _____ b. Name: _____

c. Capacity: _____ Units: _____ d. Fuel: _____

e. Maximum Fuel Characteristics: If fuel is coal, what is the moisture content? _____

% Ash _____ % Sulfur: _____ BTU Content: _____ Units: _____

f. Used by Source:

_____

_____

---

a. FML ID No.: _____ b. Name: _____

c. Capacity: _____ Units: _____ d. Fuel: _____

e. Maximum Fuel Characteristics: If fuel is coal, what is the moisture content? _____

% Ash _____ % Sulfur: _____ BTU Content: _____ Units: _____

f. Used by Source:

---

a. FML ID No.: _____ b. Name: _____

c. Capacity: _____ Units: _____ d. Fuel: _____

e. Maximum Fuel Characteristics: If fuel is coal, what is the moisture content? _____

% Ash _____ % Sulfur: _____ BTU Content: _____ Units: _____

f. Used by Source:

Section 11 - Compliance Plan for the Facility

		Yes	No
11.1	Will your facility be in compliance with all applicable requirements at the time of permit issuance and continue to comply with these requirements during the permit duration?	☒	☐
11.2	Will your facility be in compliance with all applicable requirements presently scheduled to take effect during the term of the permit?	☒	☐
11.3	Will these requirements be met by the regulatory required dates?	☒	☐

If you checked "No" in Part 11.1, 11.2 or 11.3, answer the following questions:

11.4 Identify applicable requirement(s) for which compliance is not or will not be achieved:

Source ID No.	Citation No.

11.4.1. Briefly describe how compliance with this/these applicable requirement(s) will be achieved:

11.4.2. Provide a detailed schedule of compliance for the noncomplying sources or activities identified in this section of the application. Include an enforceable sequence of corrective actions with milestone and projected compliance dates.

Date	Action/Milestone

11.4.3. Indicate the submittal frequency for the progress report (s): _____

11.4.4. Starting date for the submittal of the progress report(s): _____

Section 12 – Alternative Operating Scenario (optional) – Not Applicable

(Duplicate this section for each source participated in this alternative scenario.

12.1 General Information

a. Alternative Operating Scenario Name or ID No.: _____

b. Source ID No.: _____ c. Source Name: _____

d. Source Type (check one): ☐ Combustion ☐ Incineratory ☐ Process

e. Give a brief description of this alternative scenario stating how it is different from the standard operation:

12.2 Operational Flexibility Request

Check all that apply.

☐ Alternative exhaust system component configuration
If this box is checked, complete Sections 12.3 and 12.7

☐ Alternative type of fuel usage replacing or in addition to an existing fuel in standard operation.
If this box is checked, complete Sections 12.4 and/or 12.5 and 12.7

☐ Alternative process method replacing or in addition to a process SCC existing in standard operation.
If this box is checked, complete Section 12.6 and 12.7

12.3 Exhaust System Components

Specify the complete exhaust system component configuration for this alternative operating scenario.

From Component Type	From Component Number	To Component Type	To Component Number	Percent Flow	Begin Date	End Date

12.4 Source Classification Code (SCC) Listing for Alternative Operation

Give a complete listing of all fuels burned, products produced by a process or waste incinerated for this alternative operating scenario.

Fuel	Associated SCC	Max Throughout Rate	Firing Sequence

12.5 Alternative Fuel Physical Characteristics

Give a complete listing of all fuels physical characteristics for this alternative operating scenario.

SCC/Fuel Burned	FML	% Sulfur	% Ash	BTU Content (Units)

12.6 Alternative Process/Product Description

Give a complete listing of all fuels physical characteristics for this alternative operating scenario.

a. Briefly describe the change(s) in raw materials and/or process methods used in this operating scenario, if applicable:

b. Provide and briefly describe the process SCC associated with this alternative operating scenario:

	Process SCC:		SCC Description:	

c.	Alternative Product(s):	

12.7 Source Potential to Emit						
Give Potential Emission estimate for all air pollutants emitted at this source for this operating scenario.						
Pollutant or CAS Number	**Fuel**	**Emission/Activity Allowable per Unit**	**Calc. Method**	**Max. Capacity**	**Total Hours**	**Emission in TPY**

Section 13 – Compliance Certification

13.1 Schedule for Compliance Certification Submission

a. Frequency of Submittal: Per current Title V Permit

b. Schedule specified in current Title V
Operating Permit or proposed starting date: V06-016

13.2 Monitoring Compliance

Is the site identified in this application in compliance with all applicable requirements and compliance certification requirements:

☒ Yes ☐ No

If "NO", describe which requirements are not being met:

13.3 Certification of Compliance

Subject to the penalties of Title 18 Pa. C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I certify that I have the authority to submit this Permit Application on behalf of the applicant herein and that based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete.

(Signed) _____ Date 10/15/2020

Name (Type) Gary Bowman

Title: President

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
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FAX: (215) 685-7593

ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 27 - Emergency Generators and Fire Pumps
☒	Single Source	Unit ID	EM-002 (GP) – Flood Control RICE at GP 2nd and J
☐	Alternative Operating Scenario	Scenario Name	

Citation No.	NSPS Subpart IIII and AMS Permit #IP18-000373-374				
Compliance Method Based Upon	☒	Applicable Requirement	☐	CAM	☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar shall keep records of NOx emission calculations per AMS IP18-000373 Condition 10(a) and comply with NSPS Subpart IIII requirements.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar shall restrict operation of EM-002 (GP) per AMS IP18-000373 Condition 9.(d) and comply with NSPS Subpart IIII requirements.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 27 - Emergency Generators and Fire Pumps
☐	Single Source	Unit ID	EM-003 (GP) – Flood Control RICE at GP 2-separator
☐	Alternative Operating Scenario	Scenario Name	

Citation No. NSPS Subpart IIII and AMS Permit #IP18-000373-374

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar shall keep records of NOx emission calculations per AMS IP18-000374 Condition 10(a) and comply with NSPS Subpart IIII requirements.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar shall restrict operation of EM-003 (GP) per AMS IP18-000374 Condition 9.(d) and comply with NSPS Subpart IIII requirements.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-018 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. 25 Pa Code §§129.91-100

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar will continue to comply with the recordkeeping requirements for RACT in Permit No. IP16-000269.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar will continue to comply with the RACT requirements in Permit No. IP16-000269.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-020 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. 25 Pa Code §§129.91-100

Compliance Method Based Upon ☐ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar will continue to comply with the recordkeeping requirements for RACT in Permit No. IP16-000269.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar will continue to comply with the recordkeeping requirements for RACT in Permit No. IP16-000269.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-021 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. 25 Pa Code §§129.91-100

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar will continue to comply with the recordkeeping requirements for RACT in Permit No. IP16-000269.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar will continue to comply with the recordkeeping requirements for RACT in Permit No. IP16-000269.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. **25 Pa. 123 Requirements,**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar shall have boiler #45 comply with visible emissions requirements.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. **25 Pa. Code 127 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Handheld instrument
Monitoring Device Location	Boilerhouse stack S-126

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

NorthStar shall monitor CO and ammonia emissions, and stack CO check using a handheld instrument.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description	NorthStar shall use a handheld instrument annually to test performance of CO oxidation catalyst. Compliance with CO, PM, and Ammonia emissions will be demonstrated every 5 years by stack test. Operating parameters may be modified through subsequent stack tests.
Reference Test Method Citation	Plan Approval No. 14149, Conditions 14 and 15.

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar shall keep records for a period of 5 years of CO checks with a handheld instrument, and emissions of CO and ammonia from the #45 boiler.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

CO emissions from the #45 boiler shall not exceed 3.90 ppmvd @ 7% O2.
Ammonia slip form the boiler shall not exceed 5.0 ppmvd @ 3% O2.

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. **25 Pa. 145 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	NOx & O2 CEM
Monitoring Device Location	Boilerhouse Stacks S-125

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

NorthStar shall allow Boiler #45 to comply with TVOP V06-016 Condition D.2.(d)(7).

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar will limit the fuel used in Boiler #45 to natural gas only.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. **40 CFR 60 Requirements**

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☐	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	NOx and O2 CEM.
Monitoring Device Location	Boilerhouse stack S-126.

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

NorthStar shall monitor NOx and O2 with a CEMS per Plan Approval 14149 Condition 10.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

CITY OF PHILADELPHIA
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ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. 40 CFR 63 Requirements

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar shall conduct tune-ups on #45 boiler as described in the TVOP V06-06 Condition D.3.(b)(12)

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
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Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☐	Group of Sources	Group ID	Group 01
☒	Single Source	Unit ID	CU-022 (GP)
☐	Alternative Operating Scenario	Scenario Name	

Citation No. AMR VIII Section II Requirements

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☒	Monitoring	☒	Testing	☐	Reporting
☒	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)	Handheld Instrument
Monitoring Device Location	Boilerhouse stack S-125

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

NorthStar shall monitor CO and ammonia emissions, and stack CO check using a handheld instrument.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description	NorthStar shall use a handheld instrument annually to test performance of CO oxidation catalyst. Compliance with CO, PM, and Ammonia emissions will be demonstrated every 5 years by stack test. Operating parameters may be modified through subsequent stack tests.
Reference Test Method Citation	Plan Approval No. 14149, Conditions 14 and 15.

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

NorthStar shall keep records for a period of 5 years of CO checks with a handheld instrument, and emissions of CO and ammonia from the #45 boiler.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

NorthStar shall not allow CO emissions from the #45 boiler to exceed 1% by volume of exhaust gases.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

ADDENDUM 1
METHOD OF COMPLIANCE WORKSHEET

SECTION A. APPLICABLE REQUIREMENT

Federal Tax ID	13-3879343
Firm Name	NorthStar Contracting Group, Inc.
Plant Code	01501
Plant Name	Philadelphia Energy Solutions Refining and Marketing, LLC

Applicable Requirement for: (check only one)

☐	Entire Site		
☒	Group of Sources	Group ID	Group 08
☐	Single Source	Unit ID	
☐	Alternative Operating Scenario	Scenario Name	

Citation No. 40 CFR 63 Subpart EEEE (applicable only to piping components associated with crude oil and recovered oil tanks)

Compliance Method Based Upon ☒ Applicable Requirement ☐ CAM ☐ Other

Method of Compliance Type: [check all that apply and complete all appropriate section(s)]

☐	Monitoring	☐	Testing	☐	Reporting
☐	Record Keeping	☒	Work Practice Standard		

SECTION B. MONITORING

Monitoring Device Type (stack test, CEM, etc.)

Monitoring Device Location

Describe all parameters being monitored along with the frequency and duration of monitoring each parameter.

How will data be reported?

SECTION C. TESTING

Reference Test Method Description

Reference Test Method Citation

SECTION D. RECORD KEEPING

Describe what parameters will be recorded and the frequency of recording.

SECTION E. REPORTING

Describe what is to be reported and the frequency of reporting.

Reporting Start Date

SECTION F. WORK PRACTICE STANDARD

Describe any work practice standard(s).

For Piping components associated with crude oil and recovered oil tanks (P-594, P-603, P-604, P-579, P-587, P-588, P-590, P-599, P-601, P-602, P-012, P-135, P-521, and P-546), the permittee shall comply with the following. For each pump, valve, and sampling connection that operates in organic liquids service for at least 300 hours per year, comply with 40 CFR 63.2346(l) and the applicable requirements under subpart TT of this part (control level 1), subpart UU of this part (control level 2), or subpart H of this part. Pumps, valves, and sampling connectors that are insulated to provide protection against persistent sub-freezing temperatures are subject to the “difficult to monitor” provisions in the applicable subpart selected by the owner or operator.[40 CFR 63.2346(c)]

)

APPENDIX C. COMPLIANCE REVIEW FORM

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
PUBLIC HEALTH SERVICES
AIR MANAGEMENT SERVICES

Air Management Services
321 University Avenue
Philadelphia PA 19104-4543
Phone: (215) 685-7572
FAX: (215) 685-7593

AIR POLLUTION CONTROL ACT COMPLIANCE REVIEW FORM

Filing Date: 09/18/2020	☑ New Filing ☐ Amended Filing of __/__/__	☐ New Operating Permit ☐ Periodic
Application No:	☐ New Plan Approval ☐ Renew Plan Approval	☐ Operating Permit ☑ Change Owner

Applicant: (non-corporations attach documentation of legal name) NorthStar Contracting Group, Inc.	Address: NorthStar Contracting Group, Inc. 2250 E Adams Ave. Philadelphia, PA 19124	Tax ID No.: 13-3879343 Telephone No.: 215-533-8890

Form of Management:
☐ Individual ☐ Fictitious name ☐ Partnership ☑ Corporation ☐ Government ☐ Other: _____

If applicant is a corporation attach list of names, business addresses, states of incorporation, taxpayer IDs , and relationships to applicant.

Describe Business Activities:

Facility decommissioning and demolition services.

Does the applicant have any other related parties operating in the Commonwealth of Pennsylvania? ☐ Yes ☑ No

If Yes attach a list of :

- Name, Mailing Address, Telephone, and Relationship to the applicant of all related parties, and
- Name and Business Address of the plant manager and general partners of the applicant.

List all plan approvals or operating permits issued by the Department or an approved local air pollution control agency under the APCA to the applicant or related parties that are currently in effect or have been in effect at any time 5 years prior to the date on which this form is notarized. Attach additional sheets as necessary.

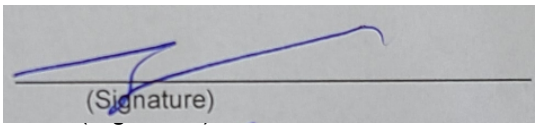
Air Contamination Source	Plan Approval/ Operating Permit Number	Location	Issuance Date	Expiration Date

List all incidents of deviations of the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. This list must include items both currently known and unknown to the Department. Attach additional sheets as necessary. See the definition of "deviations" for further clarification.

Date	Location	Plan Approval/ Operating Permit #	Nature of Deviation	Incident Status: Litigation Existing/Continuing; or Corrected/Date

CONTINUING OBLIGATION: Applicant is under a continuing obligation to update this form if any additional documented conduct occurs between the date of submission and Department action on the application

I, Gary Bowman, being duly sworn according to law, depose and state under penalty of law as provided in 18 Pa. C.S. §4944 and Section 9(b)(2) of the Air Pollution Control Act, 35 P.S. §4009(b)(2), that I am the representative of the Applicant/Permittee, identified above, authorized to make this affidavit. I further state that the information provided with this form, after reasonable inquiry, is true and complete to the best of my belief and that there are reasonable procedures in place to insure that documented conduct and deviations are identified and made part of the compliance review information contained in the Compliance Review Form.



Gary Bowman, President

(Print or Type Name)

Gary Bowman, President

(Print or Type Title)

Sworn to and subscribed before me this ___day of _____, 19

_____

Notary Public

Affix Corporate Seal and attach copy of Articles of Incorporation

(Regarding corporate seal and signatures, please refer to Item 4 in instructions.)

APPENDIX D. REDLINE PERMITS

City of Philadelphia
Department of Public Health
Air Management Services.

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit No. 13001

Philadelphia Energy Solutions Refining and Marketing LLC.
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: January 22, 2013
Expiration Date: July 23, 2014

City of Philadelphia
Department of Public Health
Air Management Services.

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **January 22, 2013**, approved plans for the reactivation of Tank P-590 (PB 843) (6,304,200 gallons) to repair and place the tank in crude oil service and/or use as crude prep tank (mixture of crude oil and water).

Facility:	**Philadelphia Energy Solutions Refining & Marketing LLC** **3144 Passyunk Avenue** **Philadelphia, PA 19145**
Owner:	**Philadelphia Energy Solutions Refining & Marketing LLC**
Mailing Address:	**3144 Passyunk Avenue** **Philadelphia, PA 19145**
Plant ID:	**01501**
Permit Contact:	**Charles Barksdale** **3144 Passyunk Avenue** **Philadelphia, PA 19145** **(215) 339-2074**

This permit has been re-issued on 3/18/13 correcting typographical error in Condition 13 and removing "Draft" on the coversheet.
This general plan approval is subject to conditions prescribed in the attachment.

Biji Pandisseril
Environmental Engineer
(215) 685-9427

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on July 23, 2014. If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

There are no petroleum refining operations at NorthStar; thus, references to 40 CFR 60 Subpart J/Ja as well as 40 CFR 63 Subpart CC are not applicable anymore. As such, references to 40 CFR 60 Subpart A and 40 CFR 63 Subpart A are no longer applicable. Although no longer a petroleum refinery, NorthStar will continue to comply with applicable requirements for flares under Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.
Permit conditions to be kept at NorthStar are outlined in green boxes.

Installation Permit No.: 13178 Date: A

Plant ID: 01501

Owner: PES Refining and Marketing Source: P
Address: 3144 Passuynk Ave Location: 3
Philadelphia, PA 19145 P

Attention: Charles Barksdale
Environmental Engineer

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air February 17, 1995, as amended, and after due consideration of an in received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on August 19, 2013 approved plans for the installation and temporary operation of the air contamination device(s) described below:

South Yard North Yard Flare replacement of flare tip, replacement bottom igniter, and installation of retractable thermo wells. The project also includes minor maintenance to vessels and mechanical work that includes repairs to LDAR components that were on "Delay of Repair".

[All modification are restricted in accordance Condition 11and therefore will not trigger NSPS Ja]

This Installation Permit expires on August 19, 2014. If construction has not been completed by this date, an application for either an extension or a new installation permit application must be made.

The sources covered by this installation permit are subject to the conditions prescribed in the attachment.

Biji Pandisseril
Environmental Engineer
(215) 685-9427

INSTALLATION PERMIT CONDITIONS
INSTALLATION PERMIT NO. 13178
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The South Yard North Flare shall be operated and maintained in accordance with the manufacturer's specification, good engineering practices, and the specifications in the application (as approved herein).

2. Sulfur dioxide emission from the flare shall not exceed 0.05 percent by volume [AMR III Sec II.B]

3. Hydrogen Sulfide (H2S) content of the fuel gas burned in each flare shall not exceed 0.1 grains per dry standard cubic foot. [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1)]
   (a) The combustion of gases generated by the Startup, Shutdown, or Malfunction of the refinery process unit or releases to flare as a result of relief valve leakage or other emergency malfunction are exempt from the above requirement.

4. The flare shall be operated with no visible emission except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4), 40 CFR 60.18(c)(1)]
   (a) Vision emission shall be determined using EPA Method 22

5. The flare shall be operated and maintained in conformance with its design [40 CFR 63.11(b)(1)]

6. The flare shall be in operation at all time when gases are vented [40 CFR 63.643(a), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

7. Flares shall be operated with a flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18(c)(2), 40 CFR 60.18(f), 40 CFR 63.11(b)(5)]

8. The net heating value of gases combusted in the flare, as determined by the Methods in 40 CFR 60.18(f)(3) and 63.11(b)(6)(ii) shall be 300 BTU/scf or greater [40 CFR 60.18(c)(3)(ii), 40 CFR 63.11(b)(6)(ii)]

9. The exit velocity of the flare as determined by 40 CFR 60.18(f)(4) and 63.11(b)(7)(i), shall be:[40 CFR 60.18(c)(4), 40 CFR 63.11(b)(7)]
   (a) less than 18.3 m/sec (60 ft/sec) or
   (b) less than 122 m/sec (400 ft/sec) if the net heating value of the gas being combusted is greater than 1000 BTU/scf; or
   (c) less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5) and 63.11(b)(7)(iii), and less than 122 m/sec (400 ft/sec0.

10. The South Yard North Flare shall operate as a fuel gas combustion device. PES shall monitor flare steams into the flare header as described in Alternative Monitoring Protocol for Flares (AMP for flares) approved by EPA and subsequent approved revisions. [Consent Decree Order 05-CV-2866]

11. The modification to South Yard North Flare shall not include [40 CFR 60.100a (c)]
   (a) Physical alteration to increase the flow capacity of the flare.
   (b) Any new piping from the refining process, including ancillary equipment, or fuel gas system is physically connected to the flare (eg, for direct emergency relief or some form of continuous or intermittent venting).
   The following are not considered modifications of a flare:
   (i) Connections made to install monitoring systems to the flare.

(ii) Connections made to install a flare gas recovery system or connections made to upgrade or enhance components of a flare gas recovery system (*e.g.*, addition of compressors or recycle lines).
(iii) Connections made to replace or upgrade existing pressure relief or safety valves, provided the new pressure relief or safety valve has a set point opening pressure no lower and an internal diameter no greater than the existing equipment being replaced or upgraded.
(iv) Connections made for flare gas sulfur removal.
(v) Connections made to install back-up (redundant) equipment associated with the flare (such as a back-up compressor) that does not increase the capacity of the flare.
(vi) Replacing piping or moving an existing connection from a refinery process unit to a new location in the same flare, provided the new pipe diameter is less than or equal to the diameter of the pipe/connection being replaced/moved.
(vii) Connections that interconnect two or more flares.

12. PES shall monitor the fuel type, fuel usage and ~~sulfur content~~ of the fuel burned in the pilot on a daily basis.

13. PES shall monitor the feed to the flare has not exceeded the worst case scenario used in the modeling demonstration. SO2 emissions shall be determined using the same analysis and calculations used in the modeling demonstration. [SO2 Operating Permit]

14. PES shall keep records of the following;
    (a) Continuous records of presence of flame
    (b) Fuel types, fuel usage, and sulfur content of fuel in the pilot daily
    (c) Date, time, duration, and calculated emission of any exceedance.
    (d) Manufacture's and operating specifications.

15. PES shall submit excess emission and continuous monitoring system performance report and /or a summary report to the EPA and AMS semi-annually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

16. PES shall submit all reports to EPA and AMS as required by the Consent Decree Order 05-CV-2866

cc: AMS Conformance File.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Donald F. Schwarz, MD, MPH
Deputy Mayor for Health & Opportunity
Health Commissioner

Nan Feyler, JD, MPH
Chief of Staff

Air Management Services
Thomas Huynh
Director

Source Registration
321 University Avenue, 2nd Floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

August 19, 2013

Charles Barksdale
Philadelphia Energy Solutions
Refining and Marketing LLC.
3144 Passyunk Avenue
Philadelphia PA. 19145

PLID: 01501

RE: Installation Permit 13178

Dear Mr. Barksdale,

AMS has received and reviewed your permit application for the modification of South Yard North Flare at your facility. Enclosed is the permit along with its conditions.

If you have any question, please contact me by email at Biji.Pandisseril@phila.gov or by phone at (215) 685-9427.

Sincerely,

Biji Pandisseril
Environmental Engineer

There are no petroleum refining operations at NorthStar; thus, references to 40 CFR 60 Subpart J/Ja as well as 40 CFR 63 Subpart CC are not applicable anymore. As such, references to 40 CFR 60 Subpart A and 40 CFR 63 Subpart A are no longer applicable. Although no longer a petroleum refinery, NorthStar will continue to comply with applicable requirements for flares under Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.
Permit conditions to be kept at NorthStar are outlined in green boxes.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Plan Approval No.:13260 Date: July 18, 201

Plant ID: 01501

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: PES Philade
Location: 3144 Passyu
Philadelphia

Attention: Charles Barksdale
215-339-2074

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air M February 17, 1995, as amended, and after due consideration of a plan approval application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia Department of Public Health, Air Management Services (AMS) on January July 18, 2014 approved plans for the operation of the air contamination device(s) described below:

Reactivation of South Yard South Flare (P-643) (CD-112) with a dedicated IR camera to monitor the presence of a flare flame.

This Plan Approval expires on January 17, 2016. If reactivation has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

This Plan Approval is subject to conditions prescribed in the attachment.

7/18/14

Edward Wiener
Chief of Source Registration
(215)-685-9426

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 13260
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

1. The South Yard South Flare shall be operated in accordance with the manufacturer's specifications and specifications in the application (as approved herein).

2. The South Yard South Flare shall comply will all applicable requirements set-forth in ~~40 CFR 60 Subpart A and J, 40 Subpart 63 Subpart A, and~~ the Consent Decree.

Work Practice:

3. The Permittee shall not burn in flare any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf) on rolling 3-hour period. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt [40 CFR 60.104(a)(1), 40 CFR 60.105(e)(3)(ii)]

4. The flare shall be designed for and operated with no visible emissions as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]

5. The flare shall be operated at all times when gases may be vented to them. The flare shall be operated with a minimum of a 98% Combustion Efficiency at all times when waste gases are vented to it. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

6. The flares shall be operated with a pilot flame present at all times. [40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]

7. The Permittee shall operate and maintain a flare gas recovery system to prevent continuous or routine combustion in the flare. [Consent Decree, Use of the flare gas recovery system obviates the need to continuously monitor emissions as otherwise required by 40 CFR 60.105(a)(4)]
   (a) Periodic maintenance shall be conducted for flare gas recovery systems.
   (b) All reasonable measures shall be taken to minimize emissions during the periodic maintenance on a flare gas recovery system is being performed.
   (c) The flare gas recovery system may be bypassed in the event of an emergency or in order to ensure safe operation of refinery processes.

8. The flare (steam-assisted flare) shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]

9. The flare (steam-assisted flare) may be designed and operated with an actual exit velocity less than Vmax and less than 122m/sec (400 ft/sec) [40 CFR 60.18(c)(4)(iii)]
   (a) Actual exit velocity shall be determined in accordance with 40 CFR 60.18(f)(4)
   (b) Vmax shall be determined in accordance with 40 CFR 60.18(f)(5)

10. The Permittee shall implement good air pollution control practices to minimize Hydrocarbon Flaring Incidents in accordance with the procedures in the Consent Decree.

Testing Requirements:

11. Within 60 days of start-up of the flare, the Permittee shall conduct performance test as follows:

(a) Test Method 22 in Appendix A of 40 CFR 60 shall be used to determine the compliance of flares with the visible emission limitations. The observation period is 2 hours and shall be used according to Method 22. [40 CFR 63.11(b)(4), 40 CFR 60.18(f)(1)]

(b) The net heating value of the gas being combusted in a flare shall be calculated using the following equation [40 CFR 60.18(f)(3)]:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i=Concentration of sample component "i" in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

(c) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

(i) In lieu of conducting the velocity test , the Permittee may submit velocity calculations which demonstrate that the Flare meets the performance specification required by 40 CFR 60.18

(d) The maximum permitted velocity, V_{max}, for flares complying with 40 CFR 60.18(c)(4)(iii)) shall be determined by the following equation: [40 CFR 60.18(f)(5)]

$$\text{Log10}(V_{max}) = (HT + 28.8)/31.7$$

where:

V_{max}=Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T=The net heating value as determined in 40 CFR 60.18 (f)(3).

Monitoring and Recordkeeping Requirement:

12. The Permittee shall monitor the ~~fuel type and~~ fuels usage of the fuel burned for each flare pilot on a daily basis.

(a) H2S in the refinery fuel gas fired at the pilot shall be monitored using a continuous monitor and recorder at the Point Breeze Fuel Gas Mix Drum, ~~except when burning fuel gas that is inherently low in sulfur content, such as natural gas~~

13. The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO2 emissions using the same analysis and calculations used in the modeling demonstration. [SO2 Operating Permit]

14. The presence of a flare pilot flame shall be continuously monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]
    (a) The flare flame shall be monitored using an IR camera.

Reporting Requirements:

15. The Permittee shall follow the same investigation, reporting, and corrective action procedures as those set forth in Section V.K for Acid Gas Flaring Incidents of the Consent Decree. The results of this will be submitted with the Semi-Annual CD Report.

16. The Permittee shall submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

17. The Permittee shall submit CEM report for the H2S to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

18. The Permittee shall submit all calculation used to comply with Condition 11.

19. All notifications required, as a result of any condition herein should be directed to

    Chief of Source Registration
    Air Management Services
    321 University Avenue
    Philadelphia, PA 19104

    and all notifications required by the Consent Decree and NSPS Ja shall also be directed to EPA at:

    Associate Director
    Office of Enforcement and Compliance Assistance (3AP20)
    U.S. EPA Region III
    1650 Arch Street
    Philadelphia, PA 19103-2029

Future Requirements (no later than November 11, 2015):

20. The flare shall comply with all applicable requirements of 40 CFR 60 Subpart Ja.

21. The Permittee shall not burn any fuel gas containing H2S in excess of 162 ppmv in the flare. The H2S content in the fuel gas shall be determined hourly on a 3-hour rolling average basis [40 CFR 60.103a(h) and 40 CFR 60.103a(f)]
    (a) The combustion in the flare of process upset gases or fuel gas that is released to the flare as the result of relief valve leakage or other emergency malfunctions is exempt from the above limit.

22. The Permittee shall develop and implement a written flare management plan **no later than the November 11, 2015** in accordance with 40 CFR 60.103a

23. The Permittee shall conduct a root cause analysis and a corrective action analysis for each of the following [Consent Decree ~~and 40 CFR 103a(c)~~]
    (a) Any time the SO2 emission exceeds 227 kilograms (kg) (500 lbs) in any 24-hour period

(b) Any discharge to the flare in excess of 14,160 standard cubic meter (m3) (500,000 standard cubic feet (scf)) above the baseline, determined in 40 CFR 60.103a(a)(4)

24. The Permittee shall complete a root cause analysis and corrective action analysis as soon as possible, but no later than 45 days after a discharge meeting one of the conditions specified Condition 23. Special circumstances affecting the number of root cause analyses and/or corrective action analyses are as follows: [40 CFR 60.103a(d)]
    (a) If a single continuous discharge meets any of the conditions specified in Condition 23 for 2 or more consecutive 24-hour periods, a single root cause analysis and corrective action analysis may be conducted.
    (b) If a single discharge from a flare triggers a root cause analysis based on more than one of the conditions in Condition 23(a) - (b), a single root cause analysis and corrective action analysis may be conducted.
    (c) If the discharge from a flare is the result of a planned startup or shutdown of a refinery process unit or ancillary equipment connected to the affected flare and the procedures in 40 CFR 60.103a(a)(5) were followed, a root cause analysis and corrective action analysis is not required; however, the discharge must be recorded as described in §60.108a(c)(6) and reported as described in §60.108a(d)(5).
    (d) If both the primary and secondary flare in a cascaded flare system meet any of the conditions specified in 40 CFR 60.103a(c)(1)(i)-(iii) in the same 24-hour period, a single root cause analysis and corrective action analysis may be conducted.
    (e) Except as provided above in Condition 24(d), if discharges occur that meet any of the conditions specified in Condition 23(a) - (b) for more than one affected facility in the same 24-hour period, initial root cause analyses shall be conducted for each affected facility. If the initial root cause analyses indicate that the discharges have the same root cause(s), the initial root cause analyses can be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

25. The Permittee shall implement the corrective action(s) identified in the corrective action analysis conducted pursuant to Condition 24 in accordance with the following applicable requirements: [40 CFR 60.103a(e)]
    (a) All corrective action(s) must be implemented within 45 days of the discharge for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If the Permittee concludes that corrective action should not be conducted, the Permittee shall record and explain the basis for that conclusion no later than 45 days following the discharge as specified in 40 CFR §60.108a(c)(6)(ix).
    (b) For corrective actions that cannot be fully implemented within 45 days following the discharge for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.
    (c) No later than 45 days following the discharge for which a root cause and corrective action analyses were required, the Permittee shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates as specified in 40 CFR§60.108a(c)(6)(x).

26. The Permittee shall keep records of discharges greater than 500 lb SO_2 in any 24-hour period from the flare. Records shall be recorded no later than 45 days following the end of a discharge exceeding the thresholds. The records shall include information as required in 40 CFR 60.108a(c)(6). [Consent Decree and 40 CFR 60.108a(c)(6)]

27. The Permittee shall continuously monitor and record the H2S concentration for fuel gases being burned in the flare in accordance with 40 CFR 60.107a(a)(2).

28. The Permittee shall continuously monitor and record the flow rate of gas discharged to the flare. [40 CFR 60.107a(f)]

29. The total reduced sulfur concentration for each gas line directed to the flare shall be monitored in accordance with either paragraph 40 CFR 60.107a(e)(1), (e)(2) or (e)(3). [40 CFR 60.107a(e)]

30. The Permittee shall maintain a copy of the Flare Management Plan.[40 CFR 60.108a(c)(1)]

31. If the monitoring option in 40 CFR 60.107a(e)(2) is used, the Permittee shall keep records of the H_2S and total sulfur analyses of each grab or integrated sample, the calculated daily total sulfur-to-H_2S ratios, the calculated 10-day average total sulfur-to-H_2S ratios and the 95-percent confidence intervals for each 10-day average total sulfur-to-H_2S ratio. [40 CFR 60.108a(c)(7)]

32. The Permittee shall submit the flare management plan to AMS and EPA in accordance with 40 CFR 60.103a(b) no later than November 11, 2015.

33. The Permittee shall submit an excess emissions reports for all periods of excess emissions as defined in 40 CFR 60.107a(i)(2)(i) in accordance with 40 CFR 60.108a(d)

34. All notifications required in 40 CFR 60 Subpart Ja shall be submitted to the following address: [40 CFR60.103a(b)(3)]

U.S. Environmental Protection Agency,
Office of Air Quality Planning and Standards, Sector Policies and Programs Division,
U.S. EPA Mailroom (E143-01),
Attention: Refinery Sector Lead,
109 T.W. Alexander Drive,
Research Triangle Park, NC 27711.

Electronic copies in lieu of hard copies may also be submitted to refinerynsps@epa.gov.

cc: AMS Conformance file

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) Nos.
15184 - 15190

Philadelphia Energy Solutions
Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: August 24, 2015
Expiration Date: February 24, 2017

City of Philadelphia
Department of Public Health
Air Management Services

Geodesic dome is only installed on Tank 847 (P-594), Tank 885 (P-603), and Tank 886 (P-604). Remaining tanks listed here are external floating roof without a dome.

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after consideration of an installation permit application received under the regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **August 24, 2015** approved plans for the **installation of geodesic domes on the following storage tanks located at the facility:**

GP 15184 – Install geodesic dome on Tank 826 (P-579)
GP 15185 – Install geodesic dome on Tank 840 (P-587)
GP 15186 – Install geodesic dome on Tank 841 (P-588)
GP 15187 – Install geodesic dome on Tank 847 (P-594)
GP 15188 – Install geodesic dome on Tank 884 (P-602)
GP 15189 – Install geodesic dome on Tank 885 (P-603)
GP 15190 – Install geodesic dome on Tank 886 (P-604)

Facility:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Owner:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Plant ID:	**1501**
Facility Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**
Permit Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**

Maryjoy Ulatowski Maryjoy Ulatowski
Acting Engineering Supervisor

Issue Date 8/24/2015

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **February 24, 2017.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) Nos. 15246

Philadelphia Energy Solutions
Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: September 10, 2015
Expiration Date: March 2017

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **September 10, 2015** approved plans for the **repair and reactivation of the following storage tank located at the facility:**

GP 15246 – Repair and Return Tank Point Breeze (PB) 7300 (TV ID # P-624) to Stormwater/Process Water Service (External Floating Roof)

Facility:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Owner:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Plant ID:	**1501**
Facility Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**
Permit Contact:	**Charles Barksdale, Jr.** **(215) 339-2074**

Maryjoy Ulatowski Maryjoy Ulatowski
Acting Engineering Supervisor

Issue Date 9/10/2015

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **March 10, 2017.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA

DEPARTMENT OF PUBLIC HEALTH
Thomas A. Farley, MD MPH
Health Commissioner

Caroline C. Johnson, M.D.
Interim Deputy Health Commissioner

Air Management Services
Kassahun Sellassie, Ph.D., PE
Acting Director

Source Registration
321 University Avenue, 2nd floor
Philadelphia, PA 19104

Telephone (215) 685-7572
Fax (215) 685-7593

May 19, 2016

Mr. Charles Barksdale
Philadelphia Energy Solutions Refining and Marketing LLC (PES)
3144 Passyunk Avenue
Philadelphia, PA 19145

PLID: 01501

RE: Plan Approval No. 15247 to Amend Plan Approval No. 14149

Dear Mr. Barksdale,

Enclosed is Plan Approval No. 15247 to modify some conditions in Plan Approval No. 14149 for Boiler No. 45. It has been issued. Pursuant to § 5-1005 of the Philadelphia Home Rule Charter, an administrative appeal of this License may be filed with the Board of Licenses and Inspections Review (BLIR). Any such appeal should be filed within thirty (30) days, include a copy of this RACT plan approval and be directed to:

Board of License and Inspection Review
Municipal Services Building, 11th Floor
1401 JFK Blvd.
Philadelphia, PA 19102

If you have any questions, please contact me at (215) 685-9426 or edward.wiener@phila.gov. .

Sincerely,

Edward Wiener
Environmental Engineer

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

PLAN APPROVAL

Plan Approval No: 15247
Plant ID: 01501

Amendment Date: May 19, 2016

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Source: PES Philadelphia Refinery
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Attention: Charles Barksdale
Site Environmental Director

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Mana
February 17, 1995, as amended, and after due consideration of an plan ap
received under the rules and regulations of the Philadelphia Air Pollution Co
City of Philadelphia, Department of Public Health, Air Management Service
September 2, 2014, approved plans for the installation and operation of the air contamination device(s) described below:

Replace with "natural gas." There are no petroleum refining operations at NorthStar.

A 350 MMBTU/hr boiler (Boiler # 45) burning ~~refinery fuel gas (RFG)~~ at 3 Boilerhouse with low NOx burners (LNB), flue gas recirculation (FGR), CO Oxidation catalyst, selective catalytic reduction (SCR) system, a wet electrostatic precipitator (WESP), and continuous oxygen trim system.

5/19/16 – This Plan Approval amends the original Plan Approval No. 14149 issued September 2, 2014. The following are changes or revisions from the original Plan Approval No. 014149.

- **Replace the 0.0033 lb/MMBtu NOx limit with a 30 day rolling average NOx limit of 0.012 lb/MMBTU. ~~The 30 day rolling limit assures compliance with 40 CFR 60.102a(g)(2)(i).~~**
- **Allow a NOx emission limit of 10.0 lbs/hr during start-ups, shutdowns, and maintenance periods. Periods of start-up, shut-downs, and maintenance shall not exceed 200 hours per rolling 12 month period.**
- **Clarify emission limits, compliance methods, and calculation methods for emissions limits in Condition 2.**

NSPS Subpart Ja requirement is no longer applicable. Boiler #45 will only fire natural gas.

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 15247
COMPANY: PHILADELPHIA ENERGY SOLUTIONS REFINING & MARKETING LLC.

This Plan Approval expires on November 19, 2016. If construction or modification has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

5/19/16

Edward Wiener
Chief of Source Registration
(215) 685-9426

NSPS Subpart Ja requirement is no longer applicable. Boiler #45 will only fire natural gas.

all be installed, maintained, and operated in accordance with the
ons and the specifications in the application (as approved herein).

2. Emissions from the Boiler #45 shall not exceed the following:

Table 1: Boiler 45 Emission limits

Pollutant	Emission Limit	Notes, Compliance Methods, Calculation Method
Nitrogen Oxides (NOx)	0.012 lb/MMBTU higher heating value basis determined daily on a 30 day rolling average. (Application, 25 PA Code 127.1 , ~~This assures compliance with 40 CFR 60.102a(g)(2)(ii))~~	30 day rolling average NOx emissions shall be based on hourly averages and compliance shall be determined by the NOx CEM data and boiler BTU of the fuel burned. Periods of start-up, shutdown and, maintenance shall be included in the 0.012 lb/MMBtu 30 day rolling average NOx average calculation.
	5.06 tons per year.	Based on a rolling 365 day average using CEM data.
Sulfur dioxide (SO_2)	15.15 tons per year.	Based on a rolling 365 day average, Calculated using 60ppm of H_2S.
Carbon monoxide (CO)	5.69 tons per rolling 12 month period.	Based on a 3-hr average stack test approved by AMS, calculated monthly.
Volatile Oxide Compounds (VOCs	1.44 tons per rolling 12 month period 0.00094 lb/MMBTU	Based on a 3-hr average stack test approved by AMS, calculated monthly. Based on a 3-hr average stack test approved by AMS. [Application, 25 PA Code 127.1]
Particulate Matter ($PM/PM_{10}/PM_{2.5}$) [b]	0.0040 lb/MMBTU 6.13 tons per rolling 12 month period.	Based on a 3-hr average stack test. [Application, 25 PA Code 127.1] Based on a 3-hr average stack test approved by AMS, calculated monthly.
Sulfuric Acid (H_2SO_4)	2.32 tons per rolling 12 month period.	
Lead (Pb)	7.61E-04 tons per rolling 12 month period.	Calculated using AP-42 factors.
Ammonia	3.44 tons per rolling 12 month period.	Based on stack test, calculated using ammonia slip and flue gas flow)
Greenhouse Gas (GHG)	182,774 tons per rolling 12 month period. (as CO_2e)	

(a) During periods of start-up, shutdown, and maintenance, the Selective Catalytic Reduction (SCR) catalyst is less than 530 degrees F, ammonia cannot be injected into the system to control NOx. Start- up shall be defined as that period of time from initiation of the boiler operation until the unit reaches steady state. Shutdown shall be defined as the cessation of the boiler operation.
(b) NOx emission during periods of start-up, shut-down, and maintenance shall not exceed 10.0 lbs/hr.
(c) Periods of star-up, shut-down, and maintenance shall not exceed 200 hours per rolling 12 month period.

3. Emissions from the No. 3 Boilerhouse (Boiler #37, Boiler #39, Boiler # 40, and Boiler #45) shall not exceed the following in any rolling 12-month period.
   (a) 253.7 tons of NOx on rolling 12-month period;
   (b) 152.5 tons of SO2 on rolling 12-month period;
   (c) 416.8 tons of CO on rolling 12-month period;
   (d) 50.6 tons of PM/PM10 on rolling 12-month period;
   (e) 34.0 tons of VOC on rolling 12-month period.

NSPS Subpart Ja requirement is no longer applicable. Boiler #45 will only fire natural gas.

4. Carbon Monoxide emissions from the boiler (Boiler # 45) shall not exceed any of the following:
   (a) 3.90 ppmvd @ 7% O2 [25 PA Code 127.1]
   (b) 1% by volume of exhaust gases. [AMR VIII. Sec.II.6]

5. Ammonia slip from the boiler (Boiler # 45) shall not exceed 5.0 ppmvd @ 3% O2 [25 Pa Code 127.1]

6. The Permittee shall only burn ~~refinery fuel gas (RFG) or~~ natural gas in the boiler (Boiler # 45). ~~The H_2S in the fuel gas burned in the boiler shall not be in excess of 162 ppmv determined hourly on a 3-hour rolling average basis and 60 ppmv determined daily on a 365 successive calendar day rolling average basis. [40 CFR 60.102a(g)(1)(ii)]~~

7. The Permittee may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [*25 Pa Code §123.41*]
   (a)Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
   (b)Equal to or greater than 60% at any time.

NSPS Subpart Ja requirement is no longer applicable. Boiler #45 will only fire natural gas.

8. Total combined heat input to the No. 3 Boilerhouse (Boiler #37, Boiler #39, Boiler #45) shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis

9. The boiler (Boiler # 45) shall be installed and be operated with low NOx burners (LNB), flue gas recirculation (FGR), CO oxidation catalyst, selective catalytic reduction (SCR), and a wet electrostatic precipitator (WESP).

10. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration NOx and O2 emission discharged to the atmosphere. The CEMs shall meet NOx and O2 Performance Specs in 40 CFR 60 Appendix and 25 PA Code Chapter 139. [40 CFR 60.48b(b)]

11. ~~The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any fuel gas combustion device in accordance with 40 CFR 60.107a(a)(2)~~

12. Beginning January 31, 2016, the Permittee shall conduct tune-up of the boiler (Boiler # 45) every 5 years to demonstrate continuous compliance as specified below.
   (a) Each tune-up shall include: [40 CFR 63.7540(a)(10)]
      (i) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). If entry into a piece of process equipment or into a storage vessel is required to

complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(ii) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(iii) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(iv) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_X requirement to which the unit is subject;

(v) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer;

(A) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Condition 12(a)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(B) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

13. The Permittee shall comply with requirement of NOx Budget Source in 25 Pa Code 145.

(i) The Permittee shall monitor and report NOx emissions in accordance with 40 CFR Part 96, Subpart HHHH (relating to monitoring and reporting), and establish a CAIR-authorized account representative and general account, in accordance with 40 CFR Part 96, Subparts BBBB and FFFF (relating to CAIR designated representative for CAIR NOx Ozone Season sources; and CAIR NOx Ozone Season Allowance Tracking System), incorporated into Subchapter D by reference, for the purposes of ensuring continued compliance with the non-EGU NOx Trading Program budget limitation 25 Pa Code 145.8(d)(1) and of retiring CAIR NOx Ozone Season allowances. [25 Pa Code 145.8(d)(2)]

(ii) A CAIR-authorized account representative and general account shall be established in accordance with 40 CFR Part 96, Subparts BB and FF (relating to CAIR designated representative for CAIR NOx sources; and CAIR NOx allowance tracking system), incorporated into 25 Pa Code 145 Subchapter D by reference, for the purpose of retiring CAIR NOx allowances. [25 Pa Code 145.8(d)(3)]

(iii) If the combined NOx emissions from all units subject to 25 Pa Code 145 (in the state of Pennsylvania) exceed 3,438 tons in an ozone season, then a unit whose actual emissions exceed the unit's allowable emissions for that ozone season, as determined under 25 Pa Code 145.8(d)(5), shall surrender to the Pa DEP by April 30 of the year following the ozone season one CAIR NOx Ozone Season allowance and one CAIR NOx allowance for each ton of excess emissions. A unit whose excess emissions are 0.5 ton or greater of the next excess ton shall surrender 1 full ton of CAIR NOx allowances (banked or current) for that excess emission. Units under common ownership may include the allowable and actual emissions from multiple units to determine whether a unit must surrender allowances. [25 Pa Code 145.8(d)(6)]

(iv) If a facility's allowable emissions exceed the facility's actual emissions for an ozone season, the owner or operator may deduct the difference or any portion of the difference from the actual emissions of units under the facility's common control that are subject to § § 129.201—129.203 (relating to boilers; stationary combustion turbines; and stationary internal combustion engines). [25 Pa Code 145.8(d)(11)]

14. The Permittee shall conduct stack tests to determine compliance as follows:
    (a) CO, VOC, PM/PM10/PM2.5, and Ammonia emission limit in Condition 2, 4, 6, & 8 within 180 days of start-up.
    (b) Compliance with CO, PM/PM10/PM2.5 and Ammonia emission shall be demonstrated every five years from the previous stack test.
    (c) The initial stack test shall establish the minimum voltage (6-minute average) required to assure compliance PM/PM10/PM2.5 emission limit
    (d) The initial stack test shall establish the maximum ammonia injection required to assure compliance with Ammonia slip and NOx emission limit.
    (e) The initial stack test shall determined minimum inlet temperature to the CO oxidation catalyst to assure compliance with CO emission limit.
    (f) The operating parameter (maximum voltage, maximum ammonia injection, and minimum inlet temperature) may be modified through subsequent AMS approved stack test.

15. The Permittee shall conduct annual checks of CO level in stack using handheld instrument to assure performance of CO oxidation catalyst.

16. The Permittee shall monitor and keep records the following: *[25 Pa Code §127.12b(c)]*
    (a) Combined No. 3 Boilerhouse emissions to assure compliance with Condition 3.
    (b) Combined heat input daily and rolling 365-day basis to determine compliance with Condition 8.
    (c) Emission calculations to demonstrate compliance with Condition 2, Table 1.
    (d) Date, time, and duration of starup, shut down, and maintenance to demonstrate compliance with conditions 2(a)-(c).
    (e) Daily fuel type and fuel usage.
    (f) Daily ammonia injection rate, voltage across the WESP, and inlet temperature of the oxidation catalyst.
    (g) Annual stack CO check using handheld instrument.
    (h) Tune-up in accordance with 40 CFR 63 Subpart DDDDD.

    All records shall be kept for a period of five years and produced upon request by AMS.

17. The Permittee shall, within two hours of any occurrence of any malfunction of the sources described in this permit which results in, or may possibly result in the emission of air contaminants in excess of the limitations specified above, notify AMS by calling (215) 685-7572 during business hours and (215) 686-4514 during other times. Malfunction(s) which occur at this facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number. A written report shall be submitted to AMS within two working days following the (notification of the) malfunction, and shall describe, at a minimum, the nature and degree of malfunction(s), the emission(s) of each pollutant, the duration of malfunction(s) and any corrective action taken.

cc: AMS Conformance file

City of Philadelphia
Department of Public Health
Air Management Services

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

Storage Tanks for Volatile Organic Liquids

General Permit (GP) No. IP17-000133

Philadelphia Energy Solutions Refining & Marketing (PES) LLC
3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: May 15, 2017
Expiration Date: November 15, 2018

City of Philadelphia
Department of Public Health
Air Management Services

SOURCE IDENTIFICATION

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on **May 15, 2017** approved plans for the **modification of the following storage tank located at the facility:**

GP IP17-000131 – Reactivate Tank GP 219 (P-144)

Facility:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Owner:	**PES, LLC** **3144 Passyunk Avenue** **Philadelphia, PA. 19145**
Plant ID:	**1501**
Facility Contact:	**Janet Ferris** **(215) 339-7146**
Permit Contact:	**Janet Ferris**
Phone:	**(215) 339-7146**
Email:	**Janet.Ferris@pes-companies.com**

Maryjoy Ulatowski

Maryjoy Ulatowski _____
Environmental Engineering Supervisor

Issue Date **May 15, 2017**

GENERAL PLAN APPROVAL AND GENERAL OPERATING PERMIT

STORAGE TANKS FOR VOLATILE ORGANIC LIQUIDS

GENERAL CONDITIONS

1. Applicability/Source Coverage Limitations

Approval herein granted to construct and operate under this Storage Tank General Permit is limited to stationary storage tanks which store volatile organic liquids as defined in 40 CFR §60.111b with a storage vapor pressure of 11.1 psia or less.

This Storage Tank General Permit authorizes the construction, modification, or reconstruction of storage tanks that meet the best available technology requirements of §§127.1 and 127.12(a)(5).

The emission limitations and requirements that a storage tank is subject to are dependent on the date the tank was constructed, reconstructed or last modified. The dates of July 23, 1984, and May 18, 1978, are important dates regarding the applicability of Federal New Source Performance Standards found in 40 CFR Part 60, Subparts Ka and Kb. Rated capacities of approximately 10,000, 20,000 and 40,000 gallons are applicability levels for differing requirements.

The Storage Tank General Permit also covers tanks regulated under the provisions of the National Emission Standards for Hazardous Air Pollutants for Source Categories established pursuant to Section 112 of the Federal Clean Air Act as promulgated under 40 CFR Part 63, Subparts F, G, R and CC. These Subparts are for the synthetic organic chemical manufacturing industry, petroleum refineries and gasoline distribution facilities.

2. Application for Use

Any person proposing to operate a storage tank under this Storage Tank General Permit shall notify AMS using the Storage Tank General Permit Application provided by AMS and shall receive prior written approval from AMS as required under 25 Pa. Code §127.621 (relating to application for use of general plan approvals and general operating permits).

3. Compliance

Any storage tank operating under this Storage Tank General Permit must comply with the terms and conditions of the general permit. The storage tank and any associated air cleaning devices shall be:

1. operated in such a manner as not to cause air pollution.

2. operated and maintained in a manner consistent with good operating and maintenance practices.

3. operated and maintained in accordance with the manufacturer's specifications and the applicable terms and conditions of this Storage Tank General Permit.

4. Permit Modification, Suspension and Revocation

This Storage Tank General Permit may be modified, suspended, or revoked if AMS determines that affected storage tank(s) cannot be regulated under this general permit, or the permittee fails to comply with applicable terms and conditions of the Storage Tank General Permit.

The approval herein granted to operate storage tanks shall be suspended, if, at any time, the permittee causes, permits or allows any modification (as defined in 25 Pa. Code §121.1) of the storage tank and any associated air pollution control device that is not in accordance with this general permit. Upon suspension of the general permit, the permittee may not continue to operate or use said storage tanks. If warranted, AMS will require that the storage tank be permitted under the state operating permit or Title V operating permit requirements in 25 Pa. Code Chapter 127, if applicable.

5. Notice Requirements

The permittee shall comply with applicable notification requirements established in 25 Pa. Code Chapter 127, Subchapter H (relating to general plan approvals and operating permits). Any notification submitted to AMS shall be sent to Air Management Services, 321 University Ave., Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of any storage tank which results in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in 25 Pa. Code, Subpart C, Article III (relating to air resources).

6. Testing

For any storage tank constructed, reconstructed or modified after May 18, 1978, which uses an external floating roof, the permittee shall conduct testing of the seals in accordance with 40 CFR §60.113a. Tests shall be conducted on the primary seals within 60 days of initial tank filling and every 5 years thereafter. Tests on the secondary seals shall be conducted annually. AMS and the EPA administrator shall be notified of the testing.

If, at any time, the AMS has cause to believe that air contaminant emissions from the source covered by this general plan approval and operating permit may be in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations, the permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rate(s). Such testing shall be conducted in accordance with the provisions of Chapter 139 of the Rules and Regulations of the Department of Environmental Protection, where applicable, and in accordance with any restrictions or limitations established by AMS at such times as it notifies the permittee that testing is required.

AMS shall be notified at least 30 days in advance of any testing required under this permit. The EPA Administrator shall be notified at least 30 days in advance of any tests for tanks regulated under the Federal New Source Performance Standards, 40 CFR Part 60, Subpart Ka.

7. Monitoring

For all storage tanks with floating roofs, the permittee shall annually inspect the roof for compliance with the following:

a. There shall be no visible holes, tears or other openings in the seals or seal fabric.

b. All openings, except stub or emergency drains, shall be covered and sealed except when in use.

c. All automatic bleeder or rim vents shall remain closed except when the roof is floated onto or off its leg supports.

d. All emergency drains on external floating roofs shall be provided with a slotted membrane fabric which covers at least 90 percent of the area opening.

e. All external floating roofs shall be visually inspected annually for secondary seal gap.

f. The secondary seal gap of external floating roof tanks equipped with a vapor mounted primary seal shall be measured annually.

8. Recordkeeping

For all storage tanks with floating roofs, the permittee shall keep a record of the following:

a. the types of volatile organic liquids stored in the tank,

b. the maximum true vapor pressure of the liquids stored, and;

c. the results of all inspections required under Condition 7.

The permittee shall keep the records required under Condition 7 for a period of 2 years and shall make those records available to AMS upon request.

9. Reporting

40 CFR Section 60.4 requires submission of copies of all requests, reports, applications, submittals and other communications to both the EPA and AMS. The EPA submittals shall be forwarded to:

Director
Air Toxics and Radiation Division
US EPA Region III
841 Chestnut Street
Philadelphia PA 19107

Any notification required as a result of any condition contained herein should be directed to AMS at 321 University Avenue, Philadelphia, PA. 19104.

The permittee shall immediately notify AMS of any malfunction of the source or any associated air cleaning device(s) which result in, or may possibly be resulting in, the emission of air contaminants in excess of the limitations specified in, or established pursuant to, any applicable rule or regulation contained in Article III of the Rules and Regulations of the Department of Environmental Protection and City of Philadelphia Air Management Regulations.

The permittee shall notify AMS and EPA, as appropriate, of changes in the products stored in a tank and describe how the change affects applicable requirements and how those applicable requirements are being met. In accordance with 25 Pa. Code §127.14(c), this notice shall be provided 7 days prior to a change that involves no equipment changes or 15 days prior to a change that involves equipment changes.

10. General Permits at Title V Facilities

Any storage tank located at a "Title V facility" as defined in 25 Pa. Code §121.1, shall comply with the requirements of 25 Pa. Code §127.514 (relating to general operating permits at Title V facilities).

11. Permit Shield

Unless precluded by the Clean Air Act or regulations promulgated thereunder, the permit shield provision contained in 25 Pa. Code §127.516 (relating to permit shield) shall apply to storage tanks operating under this Storage Tank General Permit.

12. Term of Permit

This Storage Tank General Permit is valid for a fixed term of five years from the date of issuance to the applicant.

13. Expiration and Renewal of Permit

This Plan Approval expires on **April 16, 2017.** If construction has not been completed by this date, an application for either an extension or new plan approval must be made. The conditions of this plan approval will remain in effect until they are incorporated in an operating permit.

14. Applicable Laws

Nothing in this Storage Tank General Permit relieves the permittee from its obligation to comply with all applicable Federal, state and local laws and regulations. This Storage Tank General Permit does not prohibit changes in the products stored in a particular tank provided that the tank meets all applicable requirements for the storage of the alternate product and the change is reported in accordance with the last paragraph of condition 9.

15. Prohibited Use

Any stationary air contamination source that is subject to the requirements of 25 Pa. Code Chapter 127, Subchapter D (relating to prevention of significant deterioration) and 25 Pa. Code Chapter 127, Subchapter E (relating to new source review) may not operate under this Storage Tank General Permit.

16. Transfer of Ownership or Operation

The permittee may not transfer the Storage Tank General Permit except as provided in 25 Pa. Code §127.464 (relating to transfer of operating permits).

17. Regulatory Conflicts

Wherever a conflict occurs between this general plan approval and operating permit and any of the regulations listed below, the permittee shall, in all cases, meet the more stringent requirement:

a. 25 Pa. Code §§129.56 and 129.57

b. 40 CFR Part 60, Subparts K, Ka and Kb

c. 40 CFR Part 63, Subparts F, G and CC

SPECIAL CONDITIONS

18. Plan Approval Conditions for Storage Tanks Constructed, Reconstructed or Last Modified After March 30, 1996

This Storage Tank General Permit shall authorize the construction of qualifying volatile organic liquid storage tanks.

19. Construction Requirements for Tanks with Capacities Greater than 75 Cubic Meters (19,812 Gallons) and Equal to or Less than 151 Cubic Meters (39,889 Gallons) and Constructed, Reconstructed or Last Modified On or After July 23, 1984

These storage tanks which store organic liquids at vapor pressures greater than 4 psia and lower than 11.1 psia shall be constructed with one of the following control systems which meet the requirements of 40 CFR §60.112b:

a. A fixed roof with an internal floating roof with a liquid seal, mechanical seal or a double set of seals.

b. An external floating roof equipped with a double set of seals. The primary seal shall be either a mechanical seal or a liquid mounted seal.

c. A closed vent with a control device, which has received prior approval by AMS, capable of reducing volatile organic compound (VOC) emissions by 95 percent or more.

20. Operating Requirements for Tanks with Capacities Greater than 40 Cubic Meters (10,556 Gallons) Which Were Constructed, Reconstructed or Last Modified On or After July 23, 1984

The storage tank shall also operate in accordance with the following conditions:

a. The storage tank is subject to the emission limitations of the New Source Performance Standard, 40 CFR Part 60, Subpart Kb.

b. The storage tank shall be tested in conformance with the requirements of 40 CFR §60.113b.

c. The storage tank owner or operator shall keep records of tank usage, descriptions, certifications, tests, inspections and repairs in conformance with 40 CFR §60.115b.

d. The storage tank owner or operator shall monitor storage tank operations in conformance with 40 CFR §60.116b.

e. In accordance with Condition 9, all reports and notifications required under 40 CFR §§60.113b(a)(5); 60.113b(b)(5); 60.113b(c)(1); 60.115b(a)(3); 60.115(b)(1), (2) & (4); 60.115b(d)(1) & (3); and 60.116b(d) shall be provided to AMS and to the EPA.

21. National Emission Standards for Hazardous Air Pollutants

This condition applies to any storage tank located in a facility regulated by 40 CFR Part 63 Subparts F and G [relating to Maximum Achievable Control Technology standards for the **synthetic organic chemical manufacturing industry (SOCMI)**].

a. Existing tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G by April 22, 1997:

   i. Tanks with a capacity of 75 cubic meters (19,812 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.75 psia (5.2 kPa).

b. New tanks, as described in the following, shall comply with the provisions of 40 CFR Part 63, Subparts F and G upon construction:

   i. Tanks with a capacity of 38 cubic meters (10,038 gallons) and less than 151 cubic meters (39,889 gallons) storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 1.9 psia (13.1 kPa).

   ii. Tanks with a capacity of 151 cubic meters (39,889 gallons) or greater storing organic hazardous air pollutants with vapor pressures of less than 11.1 psia (76.6 kPa) and equal to or larger than 0.1 psia (0.7 kPa).

c. This general plan approval and operating permit shall not be used for any tank which is larger or has as higher vapor pressure than those listed in Conditions 20 a. and b.

d. Fixed roof tanks shall use an internal floating roof with a liquid seal, mechanical seal or a double set of seals in conformance with 40 CFR §63.119. If a vapor mounted seal is in place as of December 31, 1992, the tank shall be equipped with either a liquid seal, mechanical seal or a double set of seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

e External floating roof tanks shall be equipped with a double set of seals in conformance with 40 CFR §63.119. The primary seal shall be either a mechanical seal or a liquid mounted seal. Any existing tank shall be equipped with the previously described seals the next time the tank is emptied or degassed but in no event later than April 22, 2004.

f. Any tank may use a closed vent with a control device which has received prior approval by AMS and is capable of reducing volatile organic compound (VOC) emissions by 95 percent or more and conforms to the requirements of 40 CFR §63.119.

g. Inspection, reporting and recordkeeping shall be done in conformance with 40 CFR Part 63, Subpart G.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

There are no petroleum refining operations at NorthStar; thus, references to 40 CFR 60 Subpart J/Ja as well as 40 CFR 63 Subpart CC are not applicable anymore. As such, references to 40 CFR 60 Subpart A and 40 CFR 63 Subpart A are no longer applicable. Although no longer a petroleum refinery, NorthStar will continue to comply with applicable requirements for flares under Consent Decree Order 05-CV-2866 until the Consent Decree is terminated.
Permit conditions to be kept at NorthStar are outlined in green boxes.

Installation Permit Nos.:IP18-000260 & IP18-000263

Plant ID: **01501**

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145

Attention: Janet Ferris
Environmental Manager

Pursuant to the provisions of Title 3 of the Philadelphia
February 17, 1995, as amended, and after due conside
received under the rules and regulations of the Philadel
Philadelphia, Department of Public Health, Air Management Services (AMS) on September 26, 2018 approved plans for the installation and temporary operation of the air contamination device(s) described below:

Installation and temporary operation of the following contamination device(s):

- Closure of 867 (P-646) (PB) Sour Water Stripper (SWS) flare and the Acid Gas flare Sour Water flare and relocate the flare line to the existing South Yard North Flare P-642 (PB), and the South Yard South Flare P-643 (PB). No increase to flare capacity.
- Unit 1231 Flare tip replacement & associated smokeless assembly injection system. No increase to flare capacity.
- Incorporate 40 CFR 63 Subpart CC for Flares as applicable.
- Incorporate 40 CFR 60 Subpart Ja as applicable.

This Installation Permit expires on **September 26, 2019**. If construction has not been completed by this date, an application for either an extension or a new installation permit application must be made.

The sources covered by this installation permit are subject to the conditions prescribed in the attachment.

Rahel Gebrekidan

_____
Rahel Gebrekidan
Engineering Supervisor
(215) 685-9429

1. Each Flare shall be operated and maintained in accordance with the manufacturer's specification, good engineering practices, and the specifications in the application (as approved herein).

Emission limitation

2. For each flare, emissions of sulfur oxides shall not exceed 0.05 percent by volume. [AMR III, Section II.B]
3. For each flare; Hydrogen Sulfide (H2S) content of the fuel gas burned in each flare shall not exceed 230 mg/dscm (0.10 grains per dry standard cubic foot). [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1), AMS Plan Approval 02184 dated 8/12/04]
   (a) The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from Condition 3. [40 CFR 60.104 (a)(1)]

Work Practice Standard

4. Each flare shall be designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]
5. Each flare shall be operated and maintained in conformance with their design. [40 CFR 60.18(d), 40 CFR 63.11(b)(1)]
6. Each flare shall be operated at all times when gases may be vented to them. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]
7. Each flare shall be operated with a pilot flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]
8. Each flare shall be operated with a pilot flame present at all times. [40 CFR 60.18(c)(2)]
9. The Permittee has the choice of adhering to either the heat content specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or adhering to the requirements in 40 CFR 60.18(c)(3)(i). [40 CFR 60.18(c)(3)]
10. Steam-assisted flares shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]
11. Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided below: [40 CFR 60.18(c)(4)]
    (a) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c)(4)(ii)]
    (b) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c)(4)(iii)]

12. The Permittee shall investigate the cause of Hydrocarbon Flaring, ~~Acid Gas Flaring and Tail Gas incidents~~, take reasonable steps to correct and minimize the conditions that have caused or contributed to Hydrocarbon Flaring, ~~Acid Gas Flaring and Tail Gas incidents~~. [Consent Decree Order 05-CV-2866]

Flares Subject to 40 CFR 60 Subpart Ja
(South Yard North Flare (P-642), South Yard South Flare (P-643), 1231 (P-117) Flare, Girard Point 1232 (P-118) Flare, Point Breeze North Yard LPG Flare (CD-104), and Girard Point 433 Flare (P-119)) Flares constructed, reconstructed or modified – after June 24, 2008

13. The Permittee shall not burn any fuel gas that contains H_2S in excess of 162 ppmv determined hourly on a 3-hour rolling average basis. The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this limit. [40 CFR §60.103a(h)]
14. The Permittee shall install, operate, calibrate and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases before being burned in any flare. [40 CFR §60.107a(2)]
    (a) The Permittee shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value for this instrument is 300 ppmv H2S.
    (b) The Permittee shall conduct performance evaluations for each H_2S monitor according to the requirements of 40 CFR §60.13(c) and Performance Specification 7 of appendix B to part 60. The owner or operator shall use Method 11, 15, or 15A of appendix A-5 to part 60 or Method 16 of appendix A-6 to part 60 for conducting the relative accuracy evaluations. The method ANSI/ASME PTC19.10-1981, "Flue and Exhaust Gas Analyses," (incorporated by reference-see 40 CFR §60.17) is an acceptable alternative to EPA Method 15A of appendix A·5 to part 60.
    (c) The Permittee shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H2S monitor.
    (d) Flares having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H2S in the fuel gas being burned in the flares.
    (e) The Permittee may use the instrument required in paragraph §60.107a(e)(1) to demonstrate compliance with the H_2S concentration requirement in §60.103a(h) if the owner or operator complies with the requirements of paragraph §§60.107a(e)(1)(i) through (iv) and if the instrument has a span (or dual span, if necessary) capable of accurately measuring concentrations between 20 and 300 ppmv. If the instrument required in paragraph (e)(1) is used to demonstrate compliance with the H_2S concentration requirement, the concentration directly measured by the instrument must meet the numeric concentration in §60.103a(h).
    (f) The owner or operator of modified flare that meets the following all three criteria shall comply with the requirements of Condition 14(a)-(e) no later than November 11, 2015. The owner or operator shall comply with the approved alternative monitoring plan or plans pursuant to §60.13(i) until the flare is in compliance with requirements of Condition 14(a)-(e).
        (i) The flare was an affected facility subject to subpart J of this part prior to becoming an affected facility under §60.100a.

(ii) The owner or operator had an approved alternative monitoring plan or plans pursuant to §60.13(i) for all fuel gases combusted in the flare.

(iii) The flare did not have in place on or before September 12, 2012 an instrument for continuously monitoring and recording the concentration by volume (dry basis) of H_2S in the fuel gases that is capable of complying with the requirements of Condition 14(a)-(e).

15. The Permittee is not required to comply with Condition 14(a)-(f) for fuel gas streams that are exempt under §§60.102a(g)(1)(iii) or 60.103a(h) or, for fuel gas streams combusted in a process heater, other fuel gas combustion device or flare that are inherently low in sulfur content. Fuel gas streams meeting one of the following requirements shall be considered inherently low in sulfur content. [40 CFR §60.107a(3)]
    (a) Pilot gas for heaters and flares.
    (b) Fuel gas streams that meet a commercial-grade product specification for sulfur content of 30 ppmv or less. In the case of a liquefied petroleum gas (LPG) product specification in the pressurized liquid state, the gas phase sulfur content should be evaluated assuming complete vaporization of the LPG and sulfur containing-compounds at the product specification concentration.
    (c) Fuel gas streams produced in process units that are intolerant to sulfur contamination, such as fuel gas streams produced in the hydrogen plant, catalytic reforming unit, isomerization unit, and HF alkylation process units.
    (d) Other fuel gas streams that an owner or operator demonstrates are low-sulfur according to the procedures in Condition 16.
        (i) If the composition of an exempt fuel gas stream changes, the owner or operator must follow the procedures in Condition 16(c). [40 CFR §60.107a(b)(3)]
16. *Exemption from H_2S monitoring requirements for low-sulfur fuel gas streams.* The owner or operator of a fuel gas combustion device or flare may apply for an exemption from the H2S monitoring requirements in Condition 13 for a fuel gas stream that is inherently low in sulfur content. A fuel gas stream that is demonstrated to be low-sulfur is exempt from the monitoring requirements of paragraphs in 40 CFR 60§ 107a (a)(1) and (2) until there are changes in operating conditions or stream composition. [40 CFR §60.107a(b)]
    (a) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:
        (i) A description of the fuel gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the fuel gas stream/system and the affected fuel gas combustion device(s) or flare(s) to be considered;
        (ii) A statement that there are no crossover or entry points for sour gas (high H_2S content) to be introduced into the fuel gas stream/system (this should be shown in the piping diagrams);
        (iii) An explanation of the conditions that ensure low amounts of sulfur in the fuel gas stream (i.e., control equipment or product specifications) at all times;
        (iv) The supporting test results from sampling the requested fuel gas stream/system demonstrating that the sulfur content is less than 5 ppmv H_2S. Sampling data must include, at minimum, 2 weeks of daily monitoring (14 grab samples) for frequently operated fuel gas streams/systems; for infrequently operated fuel gas streams/systems, seven grab samples must be collected unless other additional information would support

reduced sampling. The owner or operator shall use detector tubes ("length-of-stain tube" type measurement) following the "Gas Processors Association Standard 2377-86 (incorporated by reference - see §60.17), using tubes with a maximum span between 10 and 40 ppmv inclusive when 1≤N≤10, where N = number of pump strokes, to test the applicant fuel gas stream for H_2S; and

(v) A description of how the 2 weeks (or seven samples for infrequently operated fuel gas streams/systems) of monitoring results compares to the typical range of H2S concentration (fuel quality) expected for the fuel gas stream/system going to the affected fuel gas combustion device or flare (e.g., the 2 weeks of daily detector tube results for a frequently operated loading rack included the entire range of products loaded out and, therefore, should be representative of typical operating conditions affecting H_2S content in the fuel gas stream going to the loading rack flare).

(b) The effective date of the exemption is the date of submission of the information required in Condition 16(a). [40 CFR 60§ 107a (b)(1)]

(c) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (e.g., the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in Conditions 16(c)(i), 16(c)(ii), or (c)(iii). [40 CFR §60.107a (b)(3)(i), (b)(3)(ii), or (b)(3)(iii)]

(i) If the operation change results in a sulfur content that is still within the range of concentrations included in the original application, the owner or operator shall conduct an H_2S test on a grab sample and record the results as proof that the concentration is still within the range.

(ii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application, the owner or operator may submit new information following the procedures of Condition 16(a) within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(iii) If the operation change results in a sulfur content that is outside the range of concentrations included in the original application and the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin H_2S monitoring using daily stain sampling to demonstrate compliance using length-of-stain tubes with a maximum span between 200 and 400 ppmv inclusive when 1≤N≤5, where N = number of pump strokes. The owner or operator must begin monitoring according to the requirements in paragraphs §60.107a(a)(1) or (a)(2) as soon as practicable, but in no case later than 180 days after the operation change. During daily stain tube sampling, a daily sample exceeding 162 ppmv is an exceedance of the 3-hour H_2S concentration limit. The owner or operator of a fuel gas combustion device must also determine a rolling 365-day average using the stain sampling results; an average H_2S concentration of 5 ppmv must be used for days within the rolling 365-day period prior to the operation change.

17. *Sulfur monitoring for assessing root cause analysis threshold for affected flares.* Except as described in Condition 17(d), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall determine the total reduced sulfur concentration for each gas line directed to the affected flare in accordance with either Conditions 17(a), (b) or (c). Different options may be elected for different gas lines. If a monitoring system is in place that is capable of complying with the requirements related to either Conditions 17(a), (b) or (c), the owner or operator of a modified flare must comply with the requirements related to either Conditions 17(a), (b) or (c)

upon startup of the modified flare. If a monitoring system is not in place that is capable of complying with the requirements related to either Conditions 17(a), (b) or (c), the owner or operator of a modified flare must comply with the requirements related to either Conditions 17(a), (b) or (c) of no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(e)]

(a) *Total reduced sulfur monitoring requirements*. The owner or operator shall install, operate, calibrate and maintain an instrument or instruments for continuously monitoring and recording the concentration of total reduced sulfur in gas discharged to the flare.

(i) The owner or operator shall install, operate and maintain each total reduced sulfur monitor according to Performance Specification 5 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range monitor may be used to comply with the requirements of this paragraph and paragraph (a)(2) of §60 107a provided the applicable span specifications are met.

(ii) The owner or operator shall conduct performance evaluations of each total reduced sulfur monitor according to the requirements in §60.13(c) and Performance Specification 5 of appendix B to this part. The owner or operator of each total reduced sulfur monitor shall use EPA Method 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference-see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each total reduced sulfur monitor.

(b) *H_2S monitoring requirements.* The owner or operator shall install, operate, calibrate, and maintain an instrument or instruments for continuously monitoring and recording the concentration of H_2S in gas discharged to the flare according to the requirements in Condition 17(b)(i)-(iii) and shall collect and analyze samples of the gas and calculate total sulfur concentrations as specified in Conditions 17(b)(iv)-(ix).

(i) The owner or operator shall install, operate and maintain each H_2S monitor according to Performance Specification 7 of appendix B to part 60. The span value should be determined based on the maximum sulfur content of gas that can be discharged to the flare (e.g., roughly 1.1 to 1.3 times the maximum anticipated sulfur concentration), but may be no less than 5,000 ppmv. A single dual range H_2S monitor may be used to comply with the requirements of this paragraph and Condition 14 provided the applicable span specifications are met.

(ii) The owner or operator shall conduct performance evaluations of each H_2S monitor according to the requirements in §60.13(c) and Performance Specification 7 of appendix B to this part. The owner or operator shall use EPA Method 11, 15 or 15A of appendix A-5 to this part for conducting the relative accuracy evaluations. The method ANSI/ASME PTC 19.10-1981 (incorporated by reference - see §60.17) is an acceptable alternative to EPA Method 15A of appendix A-5 to this part. The alternative relative accuracy procedures described in section 16.0 of Performance Specification 2 of appendix B to this part (cylinder gas audits) may be used for conducting the relative

accuracy evaluations, except that it is not necessary to include as much of the sampling probe or sampling line as practical.

(iii) The owner or operator shall comply with the applicable quality assurance procedures in appendix F to part 60 for each H_2S monitor.

(iv) In the first 10 operating days after the date the flare must begin to comply with §60.103a(c)(1), the owner or operator shall collect representative daily samples of the gas discharged to the flare. The samples may be grab samples or integrated samples. The owner or operator shall take subsequent representative daily samples at least once per week or as required in Condition 17(b)(ix).

(v) The owner or operator shall analyze each daily sample for total sulfur using either EPA Method 15A of appendix A-5 to part 60, EPA Method 16A of appendix A-6 to part 60, ASTM Method D4468-85 (Reapproved 2006) (incorporated by reference - see §60.17) or ASTM Method D5504-08 (incorporated by reference - see §60.17).

(vi) The owner or operator shall develop a 10-day average total sulfur-to-H_2S ratio and 95-percent confidence interval as follows:

(A) Calculate the ratio of the total sulfur concentration to the H_2S concentration for each day during which samples are collected.

(B) Determine the 10-day average total sulfur-to-H_2S ratio as the arithmetic average of the daily ratios calculated in Condition 17(b)(vi)(A).

(C) Determine the acceptable range for subsequent weekly samples based on the 95-percent confidence interval for the distribution of daily ratios based on the 10 individual daily ratios using Equation 14 of §60.107a.

$$AR = Ratio_{Avg} \pm 2.262 \times SDev \qquad \text{(Eq. 14)}$$

Where:

AR = Acceptable range of subsequent ratio determinations, unitless.

RatioAvg = 10-day average total sulfur-to-H2S concentration ratio, unitless.

2.262 = t-distribution statistic for 95-percent 2-sided confidence interval for 10 samples (9 degrees of freedom).

SDev = Standard deviation of the 10 daily average total sulfur-to-H_2S concentration ratios used to develop the 10-day average total sulfur-to-H_2S concentration ratio, unitless.

(vii) For each day during the period when data are being collected to develop a 10-day average, the owner or operator shall estimate the total sulfur concentration using the measured total sulfur concentration measured for that day.

(viii) For all days other than those during which data are being collected to develop a 10-day average, the owner or operator shall multiply the most recent 10-day average total sulfur-to-H_2S ratio by the daily average H_2S concentrations obtained using the monitor as required by paragraph Condition 17(b)(i) through (iii) to estimate total sulfur concentrations.

(ix) If the total sulfur-to-H_2S ratio for a subsequent weekly sample is outside the acceptable range for the most recent distribution of daily ratios, the owner or operator shall develop a new 10-day average ratio and acceptable range based on data for the outlying weekly sample plus data collected over the following 9 operating days.

(c) *SO_2 monitoring requirements.* The owner or operator shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration of SO_2

from a process heater or other fuel gas combustion device that is combusting gas representative of the fuel gas in the flare gas line according to the requirements in paragraph (a)(1) of 60§ 107a, determine the F factor of the fuel gas at least daily according to the requirements in paragraphs (d)(2) through (4) of 60§ 107a, determine the higher heating value of the fuel gas at least daily according to the requirements in paragraph (d)(7) of this section, and calculate the total sulfur content (as SO2) in the fuel gas using Equation 15 of 60§ 107a.

$$TS_{FG} = C_{SO_2} \times F_d \times HHV_{FG} \qquad \text{(Eq. 15)}$$

Where:
TSFG = Total sulfur concentration, as SO2, in the fuel gas, ppmv.

CSO2 = Concentration of SO2 in the exhaust gas, ppmv (dry basis at 0-percent excess air).

Fd = F factor gas on dry basis at 0-percent excess air, dscf/MMBtu.

HHVFG = Higher heating value of the fuel gas, MMBtu/scf.

(d) *Exemptions from sulfur monitoring requirements.* Flares identified in Conditions 17(d)(i) through (iv) are exempt from the requirements in Conditions 17(a) through (c). For each such flare, except as provided in Condition 17(d)(iv), engineering calculations shall be used to calculate the SO_2 emissions in the event of a discharge that may trigger a root cause analysis under §60.103a(c)(1). [40 CFR §60.107a(e)(4)]

(i) Flares that can only receive:
  (A) Fuel gas streams that are inherently low in sulfur content as described in Conditions 15(a) through (d); and/or
  (B) Fuel gas streams that are inherently low in sulfur content for which the owner or operator has applied for an exemption from the H_2S monitoring requirements as described in Condition 16.

(ii) Emergency flares, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition 19.

(iii) Flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction, provided that for each such flare, the owner or operator complies with the monitoring alternative in Condition 19.

(iv) Secondary flares that receive gas diverted from the primary flare. In the event of a discharge from the secondary flare, the sulfur content measured by the sulfur monitor on the primary flare should be used to calculate SO_2 emissions, regardless of whether or not the monitoring alternative in Condition 19 is selected for the secondary flare.

18. *Flow monitoring for flares.* Except as provided in Condition 18(b), the owner or operator of an affected flare subject to §60.103a(c) through (e) shall install, operate, calibrate and maintain, in accordance with the specifications in Condition 18(a), a CPMS to measure and record the flow rate of gas discharged to the flare. If a flow monitor is not already in place, the owner or operator of a modified flare shall comply with the requirements of this paragraph by no later than November 11, 2015 or upon startup of the modified flare, whichever is later. [40 CFR §60.107a(f)]

(a) The owner or operator shall install, calibrate, operate and maintain each flow monitor according to the manufacturer's procedures and specifications and the following requirements.
  (i) Locate the monitor in a position that provides a representative measurement of the total gas flow rate.
  (ii) Use a flow sensor meeting an accuracy requirement of ±20 percent of the flow rate at velocities ranging from 0.1 to 1 feet per second and an accuracy of ±5 percent of the flow rate for velocities greater than 1 feet per second.
  (iii) Use a flow monitor that is maintainable online, is able to continuously correct for temperature and pressure and is able to record flow in standard conditions (as defined in §60.2) over one-minute averages.
  (iv) At least quarterly, perform a visual inspection of all components of the monitor for physical and operational integrity and all electrical connections for oxidation and galvanic corrosion if the flow monitor is not equipped with a redundant flow sensor.
  (v) Recalibrate the flow monitor in accordance with the manufacturer's procedures and specifications biennially (every two years) or at the frequency specified by the manufacturer.

19. Emergency flares, secondary flares and flares equipped with flare gas recovery systems designed, sized and operated to capture all flows except those resulting from startup, shutdown or malfunction are not required to install continuous flow monitors; provided, however, that for any such flare, the owner or operator shall comply with the monitoring alternative in 40 CFR 107a(g).
20. *Excess emissions.* For the purpose of reports required by §60.7(c), periods of excess emissions for flares subject to the concentration requirement in §60.103a(h) are defined as specified in Conditions 20(a) and (b). Determine a rolling 3-hour or a rolling daily average as the arithmetic average of the applicable 1-hour averages (e.g., a rolling 3-hour average is the arithmetic average of three contiguous 1-hour averages). Determine a rolling 30-day or a rolling 365-day average as the arithmetic average of the applicable daily averages (e.g., a rolling 30-day average is the arithmetic average of 30 contiguous daily averages).
  (a) H_2S concentration limits for flares.
    (i) Each rolling 3-hour period during which the average concentration of H_2S as measured by the H_2S continuous monitoring system required under Condition 14 exceeds 162 ppmv.
  (b) If the owner or operator of a flare becomes subject to the requirements of daily stain tube sampling in Condition 16(c)(iii), each day during which the daily concentration of H_2S exceeds 162 ppmv.

Flares Subject to 40 CFR 63 Subpart CC
(South Yard North Flare (P-642), South Yard South Flare (P-643), 1231 (P-117) Flare, Girard Point 1232 (P-118) Flare and Girard Point 433 Flare (P-119))
Each Flare at the facility listed above shall comply with the following requirement; [40 CFR Part 63 Subpart CC]

21. On or before January 30, 2019, the owner or operator of a flare used as a control device for an emission point subject to §63.670 shall meet the applicable requirements for flares as specified in paragraphs (a) through (q) of 40 CFR §63.670 and the applicable requirements in §63.671. The owner or operator may elect to comply with the requirements of paragraph §63.670(r) in lieu of the requirements in paragraphs (d) through (i), as applicable.

22. *Pilot flame presence:* The owner or operator shall operate each flare with a pilot flame present at all times when regulated material is routed to the flare. Each 15-minute block during which there is at least one minute where no pilot flame is present when regulated material is routed to the flare is a deviation of the standard. Deviations in different 15-minute blocks from the same event are considered separate deviations. The owner or operator shall monitor for the presence of a pilot flame as specified in paragraph (g) of §63.670.
23. *Visible emissions:* The owner or operator shall specify the smokeless design capacity of each flare and operate with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare. The owner or operator shall monitor for visible emissions from the flare as specified in paragraph (h) of §63.670.
24. *Flare tip velocity:* For each flare, the owner or operator shall comply with either paragraph (d)(1) or (2) of §63.670, provided the appropriate monitoring systems are in-place, whenever regulated material is routed to the flare for at least 15-minutes and the flare vent gas flow rate is less than the smokeless design capacity of the flare.
    (a) Except as provided in paragraph (d)(2) of §63.670 , the actual flare tip velocity (Vtip) must be less than 60 feet per second. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670.
    (b) Vtip must be less than 400 feet per second and also less than the maximum allowed flare tip velocity (Vmax) as calculated according to the following equation. The owner or operator shall monitor Vtip using the procedures specified in paragraphs (i) and (k) of §63.670 and monitor gas composition and determine NHVvg using the procedures specified in paragraphs (j) and (l) of §63.670.

$$Log_{10}(V_{max}) = \frac{NHV_{vg} + 1{,}212}{850}$$

Where:
Vmax = Maximum allowed flare tip velocity, ft/sec.
NHVvg = Net heating value of flare vent gas, as determined by paragraph (l)(4) of §63.670 , Btu/scf.
1,212 = Constant.
850 = Constant.

25. *Combustion zone operating limits:* For each flare, the owner or operator shall operate the flare to maintain the net heating value of flare combustion zone gas (NHVcz) at or above 270 British thermal units per standard cubic feet (Btu/scf) determined on a 15-minute block period basis when regulated material is routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVcz as specified in paragraph (m) of §63.670.
26. *Dilution operating limits for flares with perimeter assist air.* For each flare actively receiving perimeter assist air, the owner or operator shall operate the flare to maintain the net heating value dilution parameter (NHVdil) at or above 22 British thermal units per square foot (Btu/ft 2) determined on a 15-minute block period basis when regulated material is being routed to the flare for at least 15-minutes. The owner or operator shall monitor and calculate NHVdil as specified in paragraph (n) of §63.670.
27. *Pilot flame monitoring.* The owner or operator shall continuously monitor the presence of the pilot flame(s) using a device (including, but not limited to, a thermocouple, ultraviolet beam sensor, or infrared sensor) capable of detecting that the pilot flame(s) is present.
28. *Visible emissions monitoring.* The owner or operator shall monitor visible emissions while regulated materials are vented to the flare. An initial visible emissions demonstration must be

conducted using an observation period of 2 hours using Method 22 at 40 CFR part 60, appendix A-7. Subsequent visible emissions observations must be conducted using either the methods in paragraph (h)(1) of §63.670 or, alternatively, the methods in paragraph (h)(2) of §63.670 . The owner or operator must record and report any instances where visible emissions are observed for more than 5 minutes during any 2 consecutive hours as specified in § 63.655(g)(11)(ii).

(a) At least once per day, conduct visible emissions observations using an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If at any time the owner or operator sees visible emissions, even if the minimum required daily visible emission monitoring has already been performed, the owner or operator shall immediately begin an observation period of 5 minutes using Method 22 at 40 CFR part 60, appendix A-7. If visible emissions are observed for more than one continuous minute during any 5-minute observation period, the observation period using Method 22 at 40 CFR part 60, appendix A-7 must be extended to 2 hours or until 5-minutes of visible emissions are observed.

(b) Use a video surveillance camera to continuously record (at least one frame every 15 seconds with time and date stamps) images of the flare flame and a reasonable distance above the flare flame at an angle suitable for visual emissions observations. The owner or operator must provide real-time video surveillance camera output to the control room or other continuously manned location where the camera images may be viewed at any time.

29. *Flare vent gas, steam assist and air assist flow rate monitoring.* The owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate in the flare header or headers that feed the flare as well as any supplemental natural gas used. Different flow monitoring methods may be used to measure different gaseous streams that make up the flare vent gas provided that the flow rates of all gas streams that contribute to the flare vent gas are determined. If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the volumetric flow rate of assist air and/or assist steam used with the flare. If pre-mix assist air and perimeter assist are both used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.

(a) The flow rate monitoring systems must be able to correct for the temperature and pressure of the system and output parameters in standard conditions (*i.e.,* a temperature of 20 °C (68 °F) and a pressure of 1 atmosphere).

(b) Mass flow monitors may be used for determining volumetric flow rate of flare vent gas provided the molecular weight of the flare vent gas is determined using compositional analysis as specified in paragraph (j) of §63.670 so that the mass flow rate can be converted to volumetric flow at standard conditions using the following equation.

$$Q_{vol} = \frac{Q_{mass} \times 385.3}{MWt}$$

Where:
Qvol = Volumetric flow rate, standard cubic feet per second.
Qmass = Mass flow rate, pounds per second.
385.3 = Conversion factor, standard cubic feet per pound-mole.

MWt = Molecular weight of the gas at the flow monitoring location, pounds per pound-mole.

(c) Mass flow monitors may be used for determining volumetric flow rate of assist air or assist steam. Use equation in paragraph (i)(2) of §63.670 to convert mass flow rates to volumetric flow rates. Use a molecular weight of 18 pounds per pound-mole for assist steam and use a molecular weight of 29 pounds per pound-mole for assist air.

(d) Continuous pressure/temperature monitoring system(s) and appropriate engineering calculations may be used in lieu of a continuous volumetric flow monitoring systems provided the molecular weight of the gas is known. For assist steam, use a molecular weight of 18 pounds per pound-mole. For assist air, use a molecular weight of 29 pounds per pound-mole. For flare vent gas, molecular weight must be determined using compositional analysis as specified in paragraph (j) of §63.670.

30. *Flare vent gas composition monitoring.* The owner or operator shall determine the concentration of individual components in the flare vent gas using either the methods provided in paragraph (j)(1) or (2) of §63.670, to assess compliance with the operating limits in paragraph (e) of §63.670 and, if applicable, paragraphs (d) and (f) of §63.670 . Alternatively, the owner or operator may elect to directly monitor the net heating value of the flare vent gas following the methods provided in paragraphs (j)(3) of §63.670 and, if desired, may directly measure the hydrogen concentration in the flare vent gas following the methods provided in paragraphs (j)(4) of §63.670 . The owner or operator may elect to use different monitoring methods for different gaseous streams that make up the flare vent gas using different methods provided the composition or net heating value of all gas streams that contribute to the flare vent gas are determined.

(a) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring (*i.e.,* at least once every 15-minutes), calculating, and recording the individual component concentrations present in the flare vent gas.

(b) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, and maintain a grab sampling system capable of collecting an evacuated canister sample for subsequent compositional analysis at least once every eight hours while there is flow of regulated material to the flare. Subsequent compositional analysis of the samples must be performed according to Method 18 of 40 CFR part 60, appendix A-6, ASTM D6420-99 (Reapproved 2010), ASTM D1945-03 (Reapproved 2010), ASTM D1945-14 or ASTM UOP539-12 (all incorporated by reference - see § 63.14).

(c) Except as provided in paragraphs (j)(5) and (6) of §63.670 , the owner or operator shall install, operate, calibrate, and maintain a calorimeter capable of continuously measuring, calculating, and recording NHVvg at standard conditions.

(d) If the owner or operator uses a continuous net heating value monitor according to paragraph (j)(3) of §63.670 , the owner or operator may, at their discretion, install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the hydrogen concentration in the flare vent gas.

(e) Direct compositional or net heating value monitoring is not required for purchased (“pipeline quality”) natural gas streams. The net heating value of purchased natural gas streams may be determined using annual or more frequent grab sampling at any one representative location. Alternatively, the net heating value of any purchased natural gas stream can be assumed to be 920 Btu/scf.

(f) Direct compositional or net heating value monitoring is not required for gas streams that have been demonstrated to have consistent composition (or a fixed minimum net heating value) according to the methods in paragraphs (j)(6)(i) through (v) of §63.670 .

(i) The owner or operator shall submit to AMS and EPA a written application for an exemption from monitoring. The application must contain the following information:

(A) A description of the flare gas stream/system to be considered, including submission of a portion of the appropriate piping diagrams indicating the boundaries of the flare gas stream/system and the affected flare(s) to be considered;

(B) A statement that there are no crossover or entry points to be introduced into the flare gas stream/system (this should be shown in the piping diagrams) prior to the point where the flow rate of the gas streams is measured;

(C) An explanation of the conditions that ensure that the flare gas net heating value is consistent and, if flare gas net heating value is expected to vary (*e.g.,* due to product loading of different material), the conditions expected to produce the flare gas with the lowest net heating value;

(D) The supporting test results from sampling the requested flare gas stream/system for the net heating value. Sampling data must include, at minimum, 2 weeks of daily measurement values (14 grab samples) for frequently operated flare gas streams/systems; for infrequently operated flare gas streams/systems, seven grab samples must be collected unless other additional information would support reduced sampling. If the flare gas stream composition can vary, samples must be taken during those conditions expected to result in lowest net heating value identified in paragraph (j)(6)(i)(C) of §63.670 . The owner or operator shall determine net heating value for the gas stream using either gas composition analysis or net heating value monitor (with optional hydrogen concentration analyzer) according to the method provided in paragraph (l) of §63.670 ; and

(E) A description of how the 2 weeks (or seven samples for infrequently operated flare gas streams/systems) of monitoring results compares to the typical range of net heating values expected for the flare gas stream/system going to the affected flare (*e.g.,* “the samples are representative of typical operating conditions of the flare gas stream going to the loading rack flare” or “the samples are representative of conditions expected to yield the lowest net heating value of the flare gas stream going to the loading rack flare”).

(F) The net heating value to be used for all flows of the flare vent gas from the flare gas stream/system covered in the application. A single net heating value must be assigned to the flare vent gas either by selecting the lowest net heating value measured in the sampling program or by determining the 95th percent confidence interval on the mean value of all samples collected using the t-distribution statistic (which is 1.943 for 7 grab samples or 1.771 for 14 grab samples).

(ii) The effective date of the exemption is the date of submission of the information required in paragraph (j)(6)(i) of §63.670 .

(iii) No further action is required unless refinery operating conditions change in such a way that affects the exempt fuel gas stream/system (*e.g.,* the stream composition changes). If such a change occurs, the owner or operator shall follow the procedures in paragraph (j)(6)(iii)(A), (B), or (C) of §63.670 .

(A) If the operation change results in a flare vent gas net heating value that is still within the range of net heating values included in the original application, the owner or

operator shall determine the net heating value on a grab sample and record the results as proof that the net heating value assigned to the vent gas stream in the original application is still appropriate.

(B) If the operation change results in a flare vent gas net heating value that is lower than the net heating value assigned to the vent gas stream in the original application, the owner or operator may submit new information following the procedures of paragraph (j)(6)(i) of §63.670 within 60 days (or within 30 days after the seventh grab sample is tested for infrequently operated process units).

(C) If the operation change results in a flare vent gas net heating value has greater variability in the flare gas stream/system such the owner or operator chooses not to submit new information to support an exemption, the owner or operator must begin monitoring the composition or net heat content of the flare vent gas stream using the methods in §63.670 (*i.e.,* grab samples every 8 hours until such time a continuous monitor, if elected, is installed).

31. *Calculation methods for cumulative flow rates and determining compliance with Vtip operating limits*. The owner or operator shall determine Vtip on a 15-minute block average basis according to the following requirements.

(a) The owner or operator shall use design and engineering principles to determine the unobstructed cross sectional area of the flare tip. The unobstructed cross sectional area of the flare tip is the total tip area that vent gas can pass through. This area does not include any stability tabs, stability rings, and upper steam or air tubes because flare vent gas does not exit through them.

(b) The owner or operator shall determine the cumulative volumetric flow of flare vent gas for each 15-minute block average period using the data from the continuous flow monitoring system required in paragraph (i) of §63.670 according to the following requirements, as applicable. If desired, the cumulative flow rate for a 15-minute block period only needs to include flow during those periods when regulated material is sent to the flare, but owners or operators may elect to calculate the cumulative flow rates across the entire 15-minute block period for any 15-minute block period where there is regulated material flow to the flare.

(i) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block average flow volumes.

(ii) If continuous pressure/temperature monitoring system(s) and engineering calculations are used as allowed under paragraph (i)(4) of §63.670 , the owner or operator shall, at a minimum, determine the 15-minute block average temperature and pressure from the monitoring system and use those values to perform the engineering calculations to determine the cumulative flow over the 15-minute block average period. Alternatively, the owner or operator may divide the 15-minute block average period into equal duration subperiods(*e.g.*, three 5-minute periods) and determine the average temperature and pressure for each subperiod, perform engineering calculations to determine the flow for each subperiod, then add the volumetric flows for the subperiods to determine the cumulative volumetric flow of vent gas for the 15-minute block average period.

(c) The 15-minute block average Vtip shall be calculated using the following equation.

$$V_{tip} = \frac{Q_{cum}}{Area \times 900}$$

Where:
Vtip = Flare tip velocity, feet per second.
Qcum = Cumulative volumetric flow over 15-minute block average period, actual cubic feet.
Area = Unobstructed area of the flare tip, square feet.
900 = Conversion factor, seconds per 15-minute block average.

(d) If the owner or operator chooses to comply with paragraph (d)(2) of §63.670 , the owner or operator shall also determine the net heating value of the flare vent gas following the requirements in paragraphs (j) and (l) of §63.670 and calculate Vmax using the equation in paragraph (d)(2) of §63.670 in order to compare Vtip to Vmax on a 15-minute block average basis.

32. *Calculation methods for determining flare vent gas net heating value.* The owner or operator shall determine the net heating value of the flare vent gas (NHVvg) based on the composition monitoring data on a 15-minute block average basis according to the following requirements.

(a) If compositional analysis data are collected as provided in paragraph (j)(1) or (2) of §63.670 , the owner or operator shall determine NHVvg of a specific sample by using the following equation.

$$NHV_{vg} = \sum_{i=1}^{n} x_i NHV_i$$

Where:
NHVvg = Net heating value of flare vent gas, Btu/scf.
i = Individual component in flare vent gas.
n = Number of components in flare vent gas.
xi = Concentration of component i in flare vent gas, volume fraction.
NHVi = Net heating value of component i according to table 12 of this subpart, Btu/scf. If the component is not specified in table 12 of this subpart, the heats of combustion may be determined using any published values where the net enthalpy per mole of offgas is based on combustion at 25 °C and 1 atmosphere (or constant pressure) with offgas water in the gaseous state, but the standard temperature for determining the volume corresponding to one mole of vent gas is 20 °C.

(b) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 but a hydrogen concentration monitor is not used, the owner or operator shall use the direct output of the monitoring system(s) (in Btu/scf) to determine the NHVvg for the sample.

(c) If direct net heating value monitoring data are collected as provided in paragraph (j)(3) of §63.670 and hydrogen concentration monitoring data are collected as provided in paragraph (j)(4) of §63.670 , the owner or operator shall use the following equation to determine NHVvg for each sample measured via the net heating value monitoring system.

*NHV*vg = *NHV*measured 938*x*H2

Where:
NHVvg = Net heating value of flare vent gas, Btu/scf.
NHVmeasured = Net heating value of flare vent gas stream as measured by the continuous net heating value monitoring system, Btu/scf.
xH2 = Concentration of hydrogen in flare vent gas at the time the sample was input into the net heating value monitoring system, volume fraction.
938 = Net correction for the measured heating value of hydrogen (1,212 − 274), Btu/scf.

(d) Use set 15-minute time periods starting at 12 midnight to 12:15 a.m., 12:15 a.m. to 12:30 a.m. and so on concluding at 11:45 p.m. to midnight when calculating 15-minute block averages.

(e) When a continuous monitoring system is used as provided in paragraph (j)(1) or (3) of §63.670 and, if applicable, paragraph (j)(4) of §63.670 , the owner or operator may elect to determine the 15-minute block average NHVvg using either the calculation methods in paragraph (l)(5)(i) of §63.670 or the calculation methods in paragraph (l)(5)(ii) of §63.670 . The owner or operator may choose to comply using the calculation methods in paragraph (l)(5)(i) of §63.670 for some flares at the petroleum refinery and comply using the calculation methods (l)(5)(ii) of §63.670 for other flares. However, for each flare, the owner or operator must elect one calculation method that will apply at all times, and use that method for all continuously monitored flare vent streams associated with that flare. If the owner or operator intends to change the calculation method that applies to a flare, the owner or operator must notify AMS and EPA 30 days in advance of such a change.

(i) *Feed-forward calculation method.* When calculating NHVvg for a specific 15-minute block:

(A) Use the results from the first sample collected during an event, (for periodic flare vent gas flow events) for the first 15-minute block associated with that event.

(B) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the second 15-minute block associated with that event.

(C) For all other cases, use the results that are available from the most recent sample prior to the 15-minute block period for that 15-minute block period for all flare vent gas steams. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:45 a.m. to 1:00 a.m.

(ii) *Direct calculation method.* When calculating NHVvg for a specific 15-minute block:

(A) If the results from the first sample collected during an event (for periodic flare vent gas flow events) are not available until after the second 15-minute block starts, use the results from the first sample collected during an event for the first 15-minute block associated with that event.

(B) For all other cases, use the arithmetic average of all NHVvg measurement data results that become available during a 15-minute block to calculate the 15-minute block average for that period. For the purpose of this requirement, use the time that the results become available rather than the time the sample was collected. For example, if a sample is collected at 12:25 a.m. and the analysis is completed at 12:38 a.m., the results are available at 12:38 a.m. and these results would be used to determine compliance during the 15-minute block period from 12:30 a.m. to 12:45 a.m.

(f) When grab samples are used to determine flare vent gas composition:

(i) Use the analytical results from the first grab sample collected for an event for all 15-minute periods from the start of the event through the 15-minute block prior to the 15-minute block in which a subsequent grab sample is collected.

(ii) Use the results from subsequent grab sampling events for all 15 minute periods starting with the 15-minute block in which the sample was collected and ending with the 15-minute block prior to the 15-minute block in which the next grab sample is collected. For the purpose of this requirement, use the time the sample was collected rather than the time the analytical results become available.

(g) If the owner or operator monitors separate gas streams that combine to comprise the total flare vent gas flow, the 15-minute block average net heating value shall be determined separately for each measurement location according to the methods in paragraphs (l)(1) through (6) of §63.670 and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

33. *Calculation methods for determining combustion zone net heating value.* The owner or operator shall determine the net heating value of the combustion zone gas (NHVcz) as specified in paragraph (m)(1) or (2) of §63.670, as applicable.

(a) Except as specified in paragraph (m)(2) of §63.670 , determine the 15-minute block average NHVcz based on the 15-minute block average vent gas and assist gas flow rates using the following equation. For periods when there is no assist steam flow or premix assist air flow, NHVcz = NHVvg.

$$NHV_{cz} = \frac{Q_{vg} \times NHV_{vg}}{\left(Q_{vg} + Q_{s} + Q_{a,premix}\right)}$$

Where:
NHVcz = Net heating value of combustion zone gas, Btu/scf.
NHVvg = Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.
Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.
Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

(b) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVcz using the following equation.

$$NHV_{cz} = \frac{\left(Q_{vg} - Q_{NG2} + Q_{NG1}\right) \times NHV_{vg} + \left(Q_{NG2} - Q_{NG1}\right) \times NHV_{NG}}{\left(Q_{vg} + Q_{s} + Q_{a,premix}\right)}$$

Where:
NHVcz = Net heating value of combustion zone gas, Btu/scf.
NHVvg = Net heating value of flare vent gas for the 15-minute block period, Btu/scf.
Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.
QNG2 = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.
QNG1 = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1=QNG2.
NHVNG = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

34. *Calculation methods for determining the net heating value dilution parameter*. The owner or operator shall determine the net heating value dilution parameter (NHVdil) as specified in paragraph (n)(1) or (2) of §63.670, as applicable.

(a) Except as specified in paragraph (n)(2) of §63.670 , determine the 15-minute block average NHVdil based on the 15-minute block average vent gas and perimeter assist air flow rates using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{Q_{vg} \times Diam \times NHV_{vg}}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHVdil = Net heating value dilution parameter, Btu/ft 2.

NHVvg = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as

$Diam = 2 \times \sqrt{Area/\pi}$.

Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

Qa,perimeter = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

(b) Owners or operators of flares that use the feed-forward calculation methodology in paragraph (l)(5)(i) of §63.670 and that monitor gas composition or net heating value in a location representative of the cumulative vent gas stream and that directly monitor supplemental natural gas flow additions to the flare must determine the 15-minute block average NHVdil using the following equation only during periods when perimeter assist air is used. For 15-minute block periods when there is no cumulative volumetric flow of perimeter assist air, the 15-minute block average NHVdil parameter does not need to be calculated.

$$NHV_{dil} = \frac{\left[(Q_{vg} - Q_{NG2} + Q_{NG1}) \times NHV_{vg} + (Q_{NG2} - Q_{NG1}) \times NHV_{NG}\right] \times Diam}{(Q_{vg} + Q_s + Q_{a,premix} + Q_{a,perimeter})}$$

Where:

NHVdil = Net heating value dilution parameter, Btu/ft 2.

NHVvg = Net heating value of flare vent gas determined for the 15-minute block period, Btu/scf.

Qvg = Cumulative volumetric flow of flare vent gas during the 15-minute block period, scf.

QNG2 = Cumulative volumetric flow of supplemental natural gas to the flare during the 15-minute block period, scf.

QNG1 = Cumulative volumetric flow of supplemental natural gas to the flare during the previous 15-minute block period, scf. For the first 15-minute block period of an event, use the volumetric flow value for the current 15-minute block period, i.e., QNG1 =QNG2.

NHVNG = Net heating value of supplemental natural gas to the flare for the 15-minute block period determined according to the requirements in paragraph (j)(5) of §63.670 , Btu/scf.

Diam = Effective diameter of the unobstructed area of the flare tip for flare vent gas flow, ft. Use the area as determined in paragraph (k)(1) of §63.670 and determine the diameter as

$Diam = 2 \times \sqrt{Area/\pi}$.

Qs = Cumulative volumetric flow of total steam during the 15-minute block period, scf.

Qa,premix = Cumulative volumetric flow of premix assist air during the 15-minute block period, scf.

Qa,perimeter = Cumulative volumetric flow of perimeter assist air during the 15-minute block period, scf.

35. *Emergency flaring provisions*. The owner or operator of a flare that has the potential to operate above its smokeless capacity under any circumstance shall comply with the provisions in paragraphs (o)(1) through (8) of §63.670 .
    (a) Develop a flare management plan to minimize flaring during periods of startup, shutdown, or emergency releases. The flare management plan must include the information described in paragraphs (o)(1)(i) through (vii) of §63.670 .
        (i) A listing of all refinery process units, ancillary equipment, and fuel gas systems connected to the flare for each affected flare.
        (ii) An assessment of whether discharges to affected flares from these process units, ancillary equipment and fuel gas systems can be minimized or prevented during periods of startup, shutdown, or emergency releases. The flare minimization assessment must (at a minimum) consider the items in paragraphs (o)(1)(ii)(A) through (C) of §63.670 . The assessment must provide clear rationale in terms of costs (capital and annual operating), natural gas offset credits (if applicable), technical feasibility, secondary environmental impacts and safety considerations for the selected minimization alternative(s) or a statement, with justifications, that flow reduction could not be achieved. Based upon the assessment, each owner or operator of an affected flare shall identify the minimization alternatives that it has implemented by the due date of the flare management plan and shall include a schedule for the prompt implementation of any selected measures that cannot reasonably be completed as of that date.
            (A) Modification in startup and shutdown procedures to reduce the quantity of process gas discharge to the flare.
            (B) Implementation of prevention measures listed for pressure relief devices in § 63.648(j)(5) for each pressure relief device that can discharge to the flare.
            (C) Installation of a flare gas recovery system or, for facilities that are fuel gas rich, a flare gas recovery system and a co-generation unit or combined heat and power unit.
        (iii) A description of each affected flare containing the information in paragraphs (o)(1)(iii)(A) through (G) of §63.670 .

(A) A general description of the flare, including whether it is a ground flare or elevated (including height), the type of assist system (e.g., air, steam, pressure, non-assisted), whether the flare is used on a routine basis or if it is only used during periods of startup, shutdown or emergency release, and whether the flare is equipped with a flare gas recovery system.
(B) The smokeless capacity of the flare based on design conditions. Note: A single value must be provided for the smokeless capacity of the flare.
(C) The maximum vent gas flow rate (hydraulic load capacity).
(D) The maximum supplemental gas flow rate.
(E) For flares that receive assist steam, the minimum total steam rate and the maximum total steam rate.
(F) For flares that receive assist air, an indication of whether the fan/blower is single speed, multi-fixed speed (e.g., high, medium, and low speeds), or variable speeds. For fans/blowers with fixed speeds, provide the estimated assist air flow rate at each fixed speed. For variable speeds, provide the design fan curve (e.g., air flow rate as a function of power input).
(G) Simple process flow diagram showing the locations of the flare following components of the flare: Flare tip (date installed, manufacturer, nominal and effective tip diameter, tip drawing); knockout or surge drum(s) or pot(s) (including dimensions and design capacities); flare header(s) and subheader(s); assist system; and ignition system.

(iv) Description and simple process flow diagram showing all gas lines (including flare waste gas, purge or sweep gas (as applicable), supplemental gas) that are associated with the flare. For purge, sweep, supplemental gas, identify the type of gas used. Designate which lines are exempt from composition or net heating value monitoring and why (e.g., natural gas, gas streams that have been demonstrated to have consistent composition, pilot gas). Designate which lines are monitored and identify on the process flow diagram the location and type of each monitor. Designate the pressure relief devices that are vented to the flare.

(v) For each flow rate, gas composition, net heating value or hydrogen concentration monitor identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of the manufacturer's specifications, including, but not limited to, make, model, type, range, precision, accuracy, calibration, maintenance and quality assurance procedures.

(vi) For each pressure relief device vented to the flare identified in paragraph (o)(1)(iv) of §63.670 , provide a detailed description of each pressure release device, including type of relief device (rupture disc, valve type) diameter of the relief device opening, set pressure of the relief device and listing of the prevention measures implemented. This information may be maintained in an electronic database on-site and does not need to be submitted as part of the flare management plan unless requested to do so by AMS and EPA.

(vii) Procedures to minimize or eliminate discharges to the flare during the planned startup and shutdown of the refinery process units and ancillary equipment that are connected to the affected flare, together with a schedule for the prompt implementation of any procedures that cannot reasonably be implemented as of the date of the submission of the flare management plan.

(b) Each owner or operator required to develop and implement a written flare management plan as described in paragraph (o)(1) of §63.670 must submit the plan to AMS and EPA as

described in paragraphs (o)(2)(i) through (iii) of §63.670 .

(i) The owner or operator must develop and implement the flare management plan no later than January 30, 2019 or at startup for a new flare that commenced construction on or after February 1, 2016.

(ii) The owner or operator must comply with the plan as submitted by the date specified in paragraph (o)(2)(i) of §63.670 . The plan should be updated periodically to account for changes in the operation of the flare, such as new connections to the flare or the installation of a flare gas recovery system, but the plan need be re-submitted to AMS and EPA only if the owner or operator alters the design smokeless capacity of the flare. The owner or operator must comply with the updated plan as submitted.

(iii) All versions of the plan submitted to AMS and EPA shall also be submitted to the following address: U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Sector Policies and Programs Division, U.S. EPA Mailroom (E143-01), Attention: Refinery Sector Lead, 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Electronic copies in lieu of hard copies may also be submitted to refineryRTR@epa.gov.

(c) The owner or operator of a flare subject to this subpart shall conduct a root cause analysis and a corrective action analysis for each flow event that contains regulated material and that meets either the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(i) The vent gas flow rate exceeds the smokeless capacity of the flare and visible emissions are present from the flare for more than 5 minutes during any 2 consecutive hours during the release event.

(ii) The vent gas flow rate exceeds the smokeless capacity of the flare and the 15-minute block average flare tip velocity exceeds the maximum flare tip velocity determined using the methods in paragraph (d)(2) of §63.670 .

(d) A root cause analysis and corrective action analysis must be completed as soon as possible, but no later than 45 days after a flare flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . Special circumstances affecting the number of root cause analyses and/or corrective action analyses are provided in paragraphs (o)(4)(i) through (v) of §63.670 .

(i) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event that meets both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 .

(ii) You may conduct a single root cause analysis and corrective action analysis for a single continuous flare flow event regardless of the number of 15-minute block periods in which the flare tip velocity was exceeded or the number of 2 hour periods that contain more the 5 minutes of visible emissions.

(iii) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares that are operated in series (i.e., cascaded flare systems) to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 .

(iv) You may conduct a single root cause analysis and corrective action analysis for a single event that causes two or more flares to have a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 , regardless of the configuration of the flares, if the root cause is reasonably expected to be a force majeure event, as defined in this subpart.

(v) Except as provided in paragraphs (o)(4)(iii) and (iv) of §63.670 , if more than one flare

has a flow event that meets the criteria in paragraph (o)(3)(i) or (ii) of §63.670 during the same time period, an initial root cause analysis shall be conducted separately for each flare that has a flow event meeting the criteria in paragraph (o)(3)(i) or (ii) of §63.670 . If the initial root cause analysis indicates that the flow events have the same root cause(s), the initially separate root cause analyses may be recorded as a single root cause analysis and a single corrective action analysis may be conducted.

(e) Each owner or operator of a flare required to conduct a root cause analysis and corrective action analysis as specified in paragraphs (o)(3) and (4) of §63.670 shall implement the corrective action(s) identified in the corrective action analysis in accordance with the applicable requirements in paragraphs (o)(5)(i) through (iii) of §63.670 .

(i) All corrective action(s) must be implemented within 45 days of the event for which the root cause and corrective action analyses were required or as soon thereafter as practicable. If an owner or operator concludes that no corrective action should be implemented, the owner or operator shall record and explain the basis for that conclusion no later than 45 days following the event.

(ii) For corrective actions that cannot be fully implemented within 45 days following the event for which the root cause and corrective action analyses were required, the owner or operator shall develop an implementation schedule to complete the corrective action(s) as soon as practicable.

(iii) No later than 45 days following the event for which a root cause and corrective action analyses were required, the owner or operator shall record the corrective action(s) completed to date, and, for action(s) not already completed, a schedule for implementation, including proposed commencement and completion dates.

(f) The owner or operator shall determine the total number of events for which a root cause and corrective action analyses was required during the calendar year for each affected flare separately for events meeting the criteria in paragraph (o)(3)(i) of §63.670 and those meeting the criteria in paragraph (o)(3)(ii) of §63.670 . For the purpose of this requirement, a single root cause analysis conducted for an event that met both of the criteria in paragraphs (o)(3)(i) and (ii) of §63.670 would be counted as an event under each of the separate criteria counts for that flare. Additionally, if a single root cause analysis was conducted for an event that caused multiple flares to meet the criteria in paragraph (o)(3)(i) or (ii) of §63.670 , that event would count as an event for each of the flares for each criteria in paragraph (o)(3) of §63.670 that was met during that event. The owner or operator shall also determine the total number of events for which a root cause and correct action analyses was required and the analyses concluded that the root cause was a force majeure event, as defined in this subpart.

(g) The following events would be a violation of this emergency flaring work practice standard.

(i) Any flow event for which a root cause analysis was required and the root cause was determined to be operator error or poor maintenance.

(ii) Two visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(iii) Two flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for the same root cause for the same equipment.

(iv) Three visible emissions exceedance events meeting the criteria in paragraph (o)(3)(i) of §63.670 that were not caused by a force majeure event from a single flare in a 3

calendar year period for any reason.

(v) Three flare tip velocity exceedance events meeting the criteria in paragraph (o)(3)(ii) of §63.670 that were not caused by a force majeure event from a single flare in a 3 calendar year period for any reason.

36. *Flare monitoring records*. The owner or operator shall keep the records specified in § 63.655(i)(9).
37. *Reporting*. The owner or operator shall comply with the reporting requirements specified in § 63.655(g)(11).

Requirements for flare monitoring systems [40 CFR §63.671]

38. *Operation of CPMS*. For each CPMS installed to comply with applicable provisions in § 63.670, the owner or operator shall install, operate, calibrate, and maintain the CPMS as specified in paragraphs (a)(1) through (8) of §63.671 .
    (a) Except for CPMS installed for pilot flame monitoring, all monitoring equipment must meet the applicable minimum accuracy, calibration and quality control requirements specified in table 13 of this subpart.
    (b) The owner or operator shall ensure the readout (that portion of the CPMS that provides a visual display or record) or other indication of the monitored operating parameter from any CPMS required for compliance is readily accessible onsite for operational control or inspection by the operator of the source.
    (c) All CPMS must complete a minimum of one cycle of operation (sampling, analyzing and data recording) for each successive 15-minute period.
    (d) Except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall operate all CPMS and collect data continuously at all times when regulated emissions are routed to the flare.
    (e) The owner or operator shall operate, maintain, and calibrate each CPMS according to the CPMS monitoring plan specified in paragraph (b) of §63.671 .
    (f) For each CPMS except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraph (c) of §63.671 .
    (g) The owner or operator shall reduce data from a CPMS as specified in paragraph (d) of §63.671.
    (h) The CPMS must be capable of measuring the appropriate parameter over the range of values expected for that measurement location. The data recording system associated with each CPMS must have a resolution that is equal to or better than the required system accuracy.
39. *CPMS monitoring plan.* The owner or operator shall develop and implement a CPMS quality control program documented in a CPMS monitoring plan that covers each flare subject to the provisions in 1 and each CPMS installed to comply with applicable provisions in 1. The owner or operator shall have the CPMS monitoring plan readily available on-site at all times and shall submit a copy of the CPMS monitoring plan to AMS and EPA upon request by AMS and EPA. The CPMS monitoring plan must contain the information listed in paragraphs (b)(1) through (5) of §63.671 .
    (a) Identification of the specific flare being monitored and the flare type (air-assisted only, steam-assisted only, air- and steam-assisted, pressure-assisted, or non-assisted).

(b) Identification of the parameter to be monitored by the CPMS and the expected parameter range, including worst case and normal operation.

(c) Description of the monitoring equipment, including the information specified in paragraphs (b)(3)(i) through (vii) of §63.670 .
- (i) Manufacturer and model number for all monitoring equipment components installed to comply with applicable provisions in § 63.670.
- (ii) Performance specifications, as provided by the manufacturer and any differences expected for this installation and operation.
- (iii) The location of the CPMS sampling probe or other interface and a justification of how the location meets the requirements of paragraph (a)(1) of §63.670 .
- (iv) Placement of the CPMS readout, or other indication of parameter values, indicating how the location meets the requirements of paragraph (a)(2) of §63.670 .
- (v) Span of the CPMS. The span of the CPMS sensor and analyzer must encompass the full range of all expected values.
- (vi) How data outside of the span of the CPMS will be handled and the corrective action that will be taken to reduce and eliminate such occurrences in the future.
- (vii) Identification of the parameter detected by the parametric signal analyzer and the algorithm used to convert these values into the operating parameter monitored to demonstrate compliance, if the parameter detected is different from the operating parameter monitored.

(d) Description of the data collection and reduction systems, including the information specified in paragraphs (b)(4)(i) through (iii) of §63.670 .
- (i) A copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard and to calculate the applicable averages.
- (ii) Identification of whether the algorithm excludes data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments.
- (iii) If the data acquisition algorithm does not exclude data collected during CPMS breakdowns, out-of-control periods, repairs, maintenance periods, instrument adjustments or checks to maintain precision and accuracy, calibration checks, and zero (low-level), mid-level (if applicable) and high-level adjustments, a description of the procedure for excluding this data when the averages calculated as specified in paragraph (e) of §63.670 are determined.

(e) Routine quality control and assurance procedures, including descriptions of the procedures listed in paragraphs (b)(5)(i) through (vi) of this section and a schedule for conducting these procedures. The routine procedures must provide an assessment of CPMS performance.
- (i) Initial and subsequent calibration of the CPMS and acceptance criteria.
- (ii) Determination and adjustment of the calibration drift of the CPMS.
- (iii) Daily checks for indications that the system is responding. If the CPMS system includes an internal system check, the owner or operator may use the results to verify the system is responding, as long as the system provides an alarm to the owner or operator or the owner or operator checks the internal system results daily for proper operation and the results are recorded.
- (iv) Preventive maintenance of the CPMS, including spare parts inventory.
- (v) Data recording, calculations and reporting.

(vi) Program of corrective action for a CPMS that is not operating properly.

40. *Out-of-control periods.* For each CPMS installed to comply with applicable provisions in § 63.670 except for CPMS installed for pilot flame monitoring, the owner or operator shall comply with the out-of-control procedures described in paragraphs (c)(1) and (2) of this section.
    (a) A CPMS is out-of-control if the zero (low-level), mid-level (if applicable) or high-level calibration drift exceeds two times the accuracy requirement of table 13 of this subpart.
    (b) When the CPMS is out of control, the owner or operator shall take the necessary corrective action and repeat all necessary tests that indicate the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour a performance check (e.g., calibration drift) that indicates an exceedance of the performance requirements established in this section is conducted. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. The owner or operator shall not use data recorded during periods the CPMS is out of control in data averages and calculations, used to report emissions or operating levels, as specified in paragraph (d)(3) of this section.
41. *CPMS data reduction.* The owner or operator shall reduce data from a CPMS installed to comply with applicable provisions in § 63.670 as specified in paragraphs (d)(1) through (3) of this section.
    (a) The owner or operator may round the data to the same number of significant digits used in that operating limit.
    (b) Periods of non-operation of the process unit (or portion thereof) resulting in cessation of the emissions to which the monitoring applies must not be included in the 15-minute block averages.
    (c) Periods when the CPMS is out of control must not be included in the 15-minute block averages.
42. *Additional requirements for gas chromatographs.* For monitors used to determine compositional analysis for net heating value per § 63.670(j)(1), the gas chromatograph must also meet the requirements of paragraphs (e)(1) through (3) of this section.
    (a) The quality assurance requirements are in table 13 of this subpart.
    (b) The calibration gases must meet one of the following options:
        (i) The owner or operator must use a calibration gas or multiple gases that include all of compounds listed in paragraphs (e)(2)(i)(A) through (K) of this section that may be reasonably expected to exist in the flare gas stream and optionally include any of the compounds listed in paragraphs (e)(2)(i)(L) through (O) of this section. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.
            (A) Hydrogen.
            (B) Methane.
            (C) Ethane.
            (D) Ethylene.
            (E) Propane.
            (F) Propylene.
            (G) n-Butane.
            (H) iso-Butane.

(I) Butene (general). It is not necessary to separately speciate butene isomers, but the net heating value of trans-butene must be used for co-eluting butene isomers.
(J) 1,3-Butadiene. It is not necessary to separately speciate butadiene isomers, but you must use the response factor and net heating value of 1,3-butadiene for co-eluting butadiene isomers.
(K) n-Pentane. Use the response factor for n-pentane to quantify all C5 hydrocarbons.
(L) Acetylene (optional).
(M) Carbon monoxide (optional).
(N) Propadiene (optional).
(O) Hydrogen sulfide (optional).

(ii) The owner or operator must use a surrogate calibration gas consisting of hydrogen and C1 through C5 normal hydrocarbons. All of the calibration gases may be combined in one cylinder. If multiple calibration gases are necessary to cover all compounds, the owner or operator must calibrate the instrument on all of the gases.

(c) If the owner or operator chooses to use a surrogate calibration gas under paragraph (e)(2)(ii) of this section, the owner or operator must comply with paragraphs (e)(3)(i) and (ii) of this section.

(i) Use the response factor for the nearest normal hyd calibration mixture to quantify unknown componen

(ii) Use the response factor for n-pentane to quantify u the analysis that elute after n-pentane.

Acid Gas and Tail Gas units are permanently shutdown. Thus, replace "Acid Gas" or "Tail Gas" with "Hydrocarbon."

Monitoring Requirements

43. The Permittee shall monitor the following:

(a) The Permittee shall monitor the fuel type and fuels usage and sulfur content of the fuel burned for each flare pilot on a daily basis. [SO_2 Operating Permit]

(b) The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall determine SO_2 emissions using the same analysis and calculations used in the modeling demonstration. [SO_2 Operating Permit]

(c) SO_2 Emission Calculations for the Acid Gas (AG) Flaring [Consent Decree Order 05-CV-2866]

(i) The quantity of SO_2 emissions resulting from AG Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR] [TD] [ConcH_2S] [8.44×10^{-5}].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Acid Gas was first flared.

(ii) The rate of SO_2 emissions from AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

ER = [FR] [ConcH_2S] [0.169].

Acid Gas and Tail Gas units are permanently shutdown. Thus, replace "Acid Gas" or "Tail Gas" with "Hydrocarbon."

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

where

ER = Emission Rate in pounds of SO_2 per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour

TD = Total Duration of Flaring Incident in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment.

Recordkeeping Requirements

44. The Permittee shall keep the following records:

(a) For all flares, continuous records of presence of pilot flame.

(b) For all flares record the following:

(i) Fuel ~~types, fuel~~ usage~~, and sulfur analysis of the fuel~~ burned in the pilots on a daily basis. [SO_2 Operating Permit No. SO2-95-039]

(c) The sulfur content of the natural gas burnt in the flare pilot may be based on AP-42 factors for combustion sources.

(d) Occurrences when the feed to the flare has exceeded the worst case analysis for SO_2 in the modeling demonstration including the date, time, duration and calculated emissions of the exceedance. [SO2 Operating Permit No. SO2-95-039]

(i) Date, time, duration, and calculated emissions of any exceedance.

(ii) SO_2 emission for each Acid Gas or Tail Gas Flaring incident. [Consent Decree Order 05-CV-2866]

(b) SO_2 emission for each Hydrocarbon Flaring Incident. SO_2 emission calculations for each Hydrocarbon flaring Incident shall use AG Flaring Incident formulas. [Consent Decree Order 05-CV-2866]

Acid Gas and Tail Gas units are permanently shutdown. Thus, replace "Acid Gas" or "Tail Gas" with "Hydrocarbon."

Reporting Requirements

45. The Permittee shall submit an excess emission and continuous r performance report and/or a summary report to the EPA Adminis stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

46. No later than 45 days following the end of an Acid Gas Flaring Incident occurring after Date of Entry, the Permittee shall submit to AMS and EPA a report with following: [Consent Decree Order 05-CV-2866]

    (a) The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, the Permittee shall set forth the starting and ending dates and times of each release;

    (b) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

    (c) The steps, if any, that the Permittee took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

    (d) A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;

    (e) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If the Permittee concludes that corrective action(s) is (are) required the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If the Permittee concludes that corrective action is not required, the report shall explain the basis for that conclusion;

    (f) A statement that:

        (i) specifically identifies each of the grounds for stipulated penalties as specified in Paragraphs 56 and 57 of the Consent Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds;

    (g) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 53.d and 53.e of the Consent Decree shall be submitted; provided, however, that if the Permittee has not submitted a report or a series of reports containing the information required to be submitted within the 45-day time period set forth (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section XI of the Consent Decree shall apply, but the Permittee shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Sunoco's failure to submit the report required under this Paragraph within the time frame set forth.

Acid Gas and Tail Gas units are permanently shutdown. Thus, replace "Acid Gas" or "Tail Gas" with "Hydrocarbon."

(h) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), the Permittee shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

47. For each Tail Gas Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) of the facility TV Operating permit. [Consent Decree Order 05-CV-2866]

48. For each Hydrocarbon Flaring Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) of the facility TV Operating permit. and shall: [Consent Decree Order 05-CV-2866]

(i) Submit the Hydrocarbon Flaring Incident reports as part of the Semi-Annual Progress Reports in accordance with Section D.1(e)(6) of the facility TV Operating permit.

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

INSTALLATION PERMIT

Installation Permit Nos.: IP18-000373-374 Date: November 9, 2018

Plant ID: 01501

Owner: PES Refining and Marketing
Address: 3144 Passyunk Ave
Philadelphia, PA 19145
Attention: Janet Ferris
Environmental Manager

Source: PES Philadelphia Refinery
Location: 3144 Passyunk Ave
Philadelphia, PA 19145

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an installation permit application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on November 9, 2018 approved plans for the following:

1) Installation and temporary operation of the air following contamination device(s):

Installation Permit No(s).	Source Description and Location	Manufacturer / Manufacture Date	Model No	Serial No.	Rated Capacity HP= Horsepower	Type of fuel
18-000373	Flood Control RICE For flood control at GP 2nd and J	John Deere / 2012	6068HF 285	PE6068L209 665	147 HP	ULSD
18-000374	Flood Control RICE For flood control at Girard point 2-separtor	Caterpillar/2010	C9	JSC20784	275HP	Diesel (ULSD)

Hp – Horsepower
GP – Girard Point
kW - Kilowatt
WWTP – Wastewater Treatment Plant
RICE - Reciprocating Internal Combustion Engine
ULSD – Ultra Low Sulfur Diesel

This installation permit expires on November 9, 2019.
This Installation Permit is subject to conditions prescribed in the attachment.

Rahel Gebrekidan

_____
Rahel Gebrekidan
(215) 685-9429

1. Each flood control RICE shall be installed, operated, and maintained in accordance with both the manufacturer's specification and the specifications in the application (as approved herein).

Emission Limits

2. Nitrogen Oxides (NOx) emissions from each flood control RICE shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period. [Assures compliance with the Plan Approval Exemption, 25 Pa Code § 127.14(a)(8)]
3. Carbon Monoxide (CO) emissions from each flood control RICE shall not exceed 1% by volume of exhaust gases. [AMR VIII]
4. Particulate Matter (PM) emissions from each flood control RICE shall not exceed 0.04 grain per dry standard cubic foot. [25 Pa Code §123.13(c)(1)(i)]
5. PES may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following: [25 Pa Code §123.41]
   (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour;
   (b) Equal to or greater than 60% at any time.
6. In addition to the emission requirements of Conditions 2 thru 5, the 147 hp flood control RICE shall comply with the following emission requirements:
   (a) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]
   (b) CO emissions shall not exceed 5.0 g/kW-hr or 3.7 g/hp-hr; [Tier 3 Engine]
   (c) PM emissions shall not exceed 0.30 g/kW-hr or 0.23 g/hp-hr. [Tier 3 Engine]
7. In addition to the emission requirements of Conditions 2 thru 5, the 275 hp flood control RICE shall comply with the following emission requirements:
   (a) NMHC + NOx emissions shall not exceed 4.0 g/kW-hr or 3.0 g/hp-hr; [Tier 3 Engine]
   (b) CO emissions shall not exceed 3.5 g/kW-hr or 2.6 g/hp-hr; [Tier 3 Engine]
   (c) PM emissions shall not exceed 0.20 g/kW-hr or 0.15 g/hp-hr. [Tier 3 Engine]

Work Standard Practices

8. Each flood control RICE shall only burn ultra low sulfur diesel fuel. The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm). [Application]
9. Each flood control RICE shall comply with the following:
   (a) Each flood control RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.
   (b) Each flood control RICE may be operated during storm events for emergency water pumping to control flood.
   (c) Each flood control RICE may be operated for the purposes specified in Conditions 9(a) for up to 100 hours per calendar year.
   (d) Each flood control RICE shall operate less than 500 hours per rolling 12 month period for all operation. [Assures compliance with Condition 2]:

Monitoring and Recordkeeping Requirements

10. PES shall keep records of the following:
    (a) NOx emission calculations or verification to demonstrate compliance with Condition 2.

Verification may be based on operating hours and manufacturer's specifications or other AMS-approved emission factors;

(b) Fuel type used and fuel manifests to demonstrate compliance with Condition 8;

(c) Operating hours of each RICE in accordance with Conditions 9(a).

(d) EPA Tier rating of each temporary RICE.

11. All records shall be kept for five (5) years and be produced upon request by Air Management Services.

cc: AMS Conformance File

CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES

RACT PLAN APPRO

Only keep the following sources at NorthStar 1(A):
(6) Boiler House #3 [Boiler #37, Boiler #39, Boiler #40] and
(16) Fugitive leaks
Permit conditions to be kept at NorthStar are outlined in green boxes.
Only transfer to Host Sources 1(A):
(19) Girard Point Barge Loading (P130) and
(20) Point Breeze Marine Barge Loading (P636).
Permit conditions to be transferred to Host are outlined in blue boxes.

Plan Approval No.: IP16-000269

Effective Date: April 24, 2020

Expiration Date: None

Replaces Permit Nos. PA Permit Numbers 51-1501 and 51-1517 dated

In accordance with provisions of the Air Pollution Control Act, the Act
after due consideration of a Reasonably Available Control Technology
Code, Title 25, Chapter 129.91 thru 129.95, of the rules and regulations
Protection (PADEP), Air Management Services (AMS) approved the R
listed in section 1.A. Emission Sources of the attached RACT Plan App

Facility:	Philadelphia Energy Soultions Refining and Marketing LLC (PES)
Owner:	Philadelphia Energy Soultions Refining and Marketing LLC
Location:	Girard Point Processing Area located at 3001 Penrose Ave
	Point Breeze Processing Area located at 3144 Passyunk Ave
Mailing Address:	3144 Passyunk Ave., Philadelphia, PA 19145
SIC Code(s):	2911
Plant ID:	1501 and 1517
Facility Contact:	Charles Barksdale
Phone:	(215) 339-2074
Permit Contact:	Charles Barksdale
Phone:	(215) 339-2074
Responsible Official:	Daniel J. Statile
Title:	General Manager

4/24/24

Edward Wiener, Chief of Source Registration — Date

The RACT plan approval is subject to the following conditions:

1. The purpose of this Plan Approval is to establish Nitrogen Oxides (NOx)/Volatile Organic Compound (VOC) Reasonably Available Control Technology (RACT) for PES Girard Point Processing Area and Point Breeze Processing Area. This includes the following emission sources and control equipment:

   A. Emission Sources

   (1) Process Heaters: Unit 137: F1 heater (415 MMBTU/hr)
   F2 heater (155 MMBTU/hr)
   F3 heater (60 MMBTU/hr)
   All three heaters burn refinery fuel gas.

   (2) Process Heater: Unit 231: B-101 heater (104.5 MMBTU/hr) fires refinery fuel gas.

   (3) Process Heater: Unit 433: H-1 heater (260 MMBTU/hr) Heater fires refinery fuel gas.

   (4) Process Heaters: Unit 1332: H-400 heater (186 MMBTU/hr)
   H-401 heater (233 MMBTU/hr)
   H-2 heater (60 MMBTU/hr)
   These heaters burn refinery fuel gas.

   Replace with "natural gas."

   (5) Process Heater: Unit 1232: B-104 heater (70 MMBTU/hr) Heater fires refinery fuel gas.

   (6) Boiler House #3: Boiler #37 (495 MMBTU/hr)
   Boiler #39 (495 MMBTU/hr)
   Boiler #40 (660 MMBTU/hr)
   These boilers fire ~~refinery fuel gas~~.

   (7) Crude Unit 210: Section A HTR H101 (192.0 MMBTU/hr)
   Section B HTR H201 (254.0 MMBTU/hr
   Section C HTR 13H1 (235.4 MMBTU/hr)
   These heaters above fire refinery fuel gas.

   (8) Hydrocracker Unit 859: HTR 1H1 (98 MMBTU/hr – installed in 2009) Unit fires refinery fuel gas.

(9) Reformer Unit 864: HTR PH1 (80 MMBTU/hr)
HTR PH11 (74 MMBTU/hr)
HTR PH12 (85.1 MMBTU/hr)
These heaters fire refinery fuel gas.

(10) Distillate HDS Unit 865: HTR 11H1 (87.3 MMBTU/hr after installation of ULNBs)
HTR 11H2 (64.2 MMBTU/hr)
These heaters fire refinery fuel gas.

(11) Gas-Oil HDS Unit 866: HTR 12H1Heater (61.2 MMBTU/hr) fires refinery fuel gas

(12) Reformer Unit 860: HTR 2H3 (174.67 MMBTU/hr) Unit fires refinery fuel gas.
HTR 2H5 (155 MMBTU/hr) Unit fires refinery fuel gas.

HTR 2H2 (69.78 MMBTU/hr) Unit fires refinery fuel gas.
HTR 2H4 (99.44 MMBTU/hr) Unit fires refinery fuel gas.

HTR 2H7 (59 MMBTU/hr) Unit fires refinery fuel gas.

(13) 868 FCCU HTR 8H101 Unit fires refinery fuel gas

(14) 868 FCCU Catalyst Regenerator

(15) Cooling towers

(16) Fugitive leaks: valves, flanges, compressors, pumps, pipes.

(17) Unit 870: HTR H01 (97 MMBTU/hr)
HTR H02 (53 MMBTU/hr
These heaters fire refinery fuel gas.

(18) Unit 1232 FCCU

(19) Girard Point Barge Loading (P130)

(20) Point Breeze Marine Barge Loading (P636)

B. Control Equipment

(1) Ultra-low NOx burner (ULNB) systems are installed on the following sources to control NOx emissions:
Unit 433 H-1 heater
Unit 1232 B-104 heater
#3 Boiler House boilers #37, #39, and #40.
Unit 210 H201 heater
Unit 870 H01 and H02 heaters
Unit 859 1H1 heater
Unit 137 F-3 heater

Unit 1332 H-2 heater.

(2) Flue Gas Recirculation (FGR) is also installed on #3 Boiler House boilers #37, #39, and #40.

(3) Selective Catalytic Reduction (SCR) shall be installed on Unit 1332 H-400 and H-401 heaters. PES shall operate the SCR system while operating the heaters *(H-400/401)* except during times required to replace SCR catalyst or to do maintenance to the SCR/air pre-heater system or to operate the heaters at low firing rate during reformer catalyst regenerations. PES shall take a daily NOx sample during these maintenance periods when it is necessary to by-pass the *SCR/air* pre-heater system and the NOx CEM, and the heaters are operated in natural draft mode. During these natural draft operating periods the maximum allowable NOx limitation will be 0.15 lb/MMBTU on a daily average, as defined in Condition 4.B below. All emissions during the natural draft duration shall be counted in the rolling 365-day limit in Condition 4.B.

(4) Thermal Oxidizer shall be operated on Girard Point Barge Loading (CD-011).

2. This approval requires and authorizes:

A. The installation of Ultra Low NOx Burners on 231 B101 heater and 865 11H1 heater to comply with RACT requirements by August 19, 2015.

B. PES will use combustion tuning to comply with RACT requirements for the following heaters:

Unit 137: F1 heater, F2 heater, F3 heater
Unit 1332: H-400 heater, H-401 heater, H-2 heater
Crude Unit: 210A HTR H101, 210C HTR 13H1
Hydrocracker Unit 859: HTR 1H1
Reformer Unit 864: HTR PH1, HTR PH11, HTR PH12

Distillate HDS Unit 865: HTR 11H2
Reformer Unit 860: HTR 2H3, HTR 2H5, HTR 2H4, HTR 2H2, HTR 2H7
Gas Oil HDS Unit 866: HTR 12H1
Unit 868: HTR 8H101

Replace with "natural gas." There are no petroleum refining operations at NorthStar.

C. All ~~process heaters and~~ boilers are limited to ~~refinery fuel gas~~ and will be capped at the heat input specified in the table below.

Process Unit	Source	Heat Input Cap (MMBTU/hr)
Unit 137:	F1 heater	415
	F2 heater	155
Unit 433:	H-1 heater	260
Unit 1332:	H-400 heater	186
Unit 1232:	B-104 heater	70
Boiler House #3:	Boilers #37, and #39	495
	Boiler #40	660

D. PES shall monitor all fuel input to all ~~heaters and~~ boilers with BTU limitations on a daily basis to insure capacity limits are not exceeded or PES shall install fuel limiting devices on the ~~heaters or~~ boilers to keep capacities below allowable.

E. The 868 FCCU NOx emissions shall be limited to 100 ppmdv @ 0% O_2 on a 7-day rolling average 130.2 tons per rolling 365-day period. PES shall follow good combustion practices controlling the level of excess oxygen and CO promoter in the regenerator to minimize NOx **and VOC** emissions from the regenerator. **Operators shall be trained according to industry standards.** A NOx Continuous Emission Monitoring System (CEMS) shall be operated on the unit.

F. The 1232 FCCU shall have Selective Catalytic Reduction (SCR). NOx emissions shall not exceed 30 ppmdv @ 0% O_2 on a 7-day rolling average and 208.28 tons per rolling 365-day period. The 1232 FCCU shall be operated with good combustion practices. **Operators shall be trained according to industry standards.** A NOx Continuous Emission Monitoring System (CEMS) shall be operated on the unit.

G. The 1232 FCCU shall vent to the CO Boiler when operating in partial-burn mode and shall follow good combustion practices. **Operators shall be trained according to industry standards.**

H. PES shall utilize an equipment monitoring program in accordance with 40 CFR 63 subpart CC for VOC fugitive emissions from cooling towers.

I. Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder. **VOC emissions from Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of less than 4 psi shall not exceed 13.9 tons per rolling 12-month period.**

J. Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4 psi or greater. VOC emissions from Point Breeze Marine Barge Loading shall not exceed 25.99 tons per rolling 12-month period.

K. PES shall comply with the requirements of 25 Pa Code Section 129.58 for VOC fugitive emissions.

L. PES shall perform quarterly combustion tuning on Unit 860-2H8 Heater, Unit 864-PH7 Heater, Unit 1332 H-1 Heater, Unit 1332 H-3 Heater, Unit 1332 H-601 Heater, and Unit 1332 H-602 Heater.

3. RACT Implementation Schedule

A. PES shall immediately begin the implementation of the measures necessary to comply with the approved RACT Plan Approval.

B. Sources proposing combustion tuning to comply with RACT requirements of 25 PA Code 129.91(f) shall perform the annual combustion tuning by December 31st of each year not to exceed 12 months between tunings.

C. Sources applicable to presumptive RACT requirements of 25 PA Code 129.93(b)(2) shall complete the annual adjustment or tune-up by December 31st of each year not to exceed 12 months between tunings.

D. Sources proposing installing Ultra Low NOx Burners to comply with RACT requirements of 25 PA Code 129.91(f) shall perform combustion tuning annually by December 31st of each year not to exceed 12 months between tunings.

~~**E. The 231 B101 heater shall be limited to 91 MMBTU/hr until the burners are installed. The 865 11H1 heater shall be limited to 72.2 MMBTU/hr until the burners are installed. The 0.03 lbs/MMBTU NOx emission limit listed below for each unit will not become applicable until the burners are installed.**~~

4. Testing Requirements and Stack Emission Limitations

A. For units installing ULNB, PES shall conduct performance tests for NOx. The results of these tests have been submitted to AMS.

B. The final NOx RACT emission limits for the #3 Boiler House boilers, ~~137 Unit F1 heater, and Unit 210 H201 heater~~, have been established through the use of Department approved Continuous Emission Monitoring System (CEMS). Compliance with the limitations listed below will be on a 30-day rolling average based on hourly averages of CEM data for the Unit 137 F1 heater, on a daily average based on hourly averages of CEM data for limits noted as daily average, and on a 365-day rolling average based on hourly averages of CEM data for the other units. The limits for the Unit 231 B101 heater and Unit 865 11H1 heater are not applicable until the Ultra Low NOx Burners are installed.

Source	Limitation
Boiler House #3 – boilers #37, #39, and #40	0.040 lbs. NOx/MMBTU
Boiler House #3 – boilers #37, #39, and #40	0.10 lbs. NOx/MMBTU (daily average)
137 Unit F1 heater	0.230 lbs. NOx/MMBTU
137 Unit F2 heater	**0.25 lbs. NOx/MMBTU**
Unit 210 H201 heater	0.03 lbs. NOx/MMBTU
Unit 231 B101 heater	0.03 lbs. NOx/MMBTU
Unit 865 11H1 heater	0.03 lbs. NOx/MMBTU
Process Heater Unit 1332 H-400 heater	0.06 lbs. NOx/MMBTU
Process Heater Unit 1332 H-401 heater	0.06 lbs. NOx/MMBTU
Process Heater Unit 1332 H-400 heater	0.15 lbs. NOx/MMBTU (daily average)
Process Heater Unit 1332 H-401 heater	0.15 lbs. NOx/MMBTU (daily average)
Process Heater Unit 860 2H8 heater	**0.098 lbs. NOx/MMBTU**
Process Heater Unit 864 PH7 heater	**0.06 lbs. NOx/MMBTU**
Process Heater Unit 1332 H-1 heater	**0.098 lbs. NOx/MMBTU**
Process Heater Unit 1332 H-3 heater	**0.098 lbs. NOx/MMBTU**
Process Heater Unit 1332 H-601 heater	**0.098 lbs. NOx/MMBTU**
Process Heater Unit 1332 H-602 heater	**0.098 lbs. NOx/MMBTU**

i. **In addition to the above emission limits, NOx emissions from each of the following units shall not exceed 0.25 lbs/MMBTU heat input on a rolling 30 operating day average. Compliance shall be determined based on CEMS in accordance with 25 Pa Code Sections 129.100(a)(1) and 129.98 and Appendix: NO_X Emission Averaging Plan.**

- **(a) #3 Boilerhouse Boiler #37**
- **(b) #3 Boilerhouse Boiler #39**
- **(c) #3 Boilerhouse Boiler #40**
- **(d) Unit 137 F-2 Heater**
- **(e) Unit 210 H201 Heater**
- **(f) Unit 433 H-1 Heater**
- **(g) Unit 1332 H-400 Heater**
- **(h) Unit 1332 H-401 Heater**

ii. **In addition to the above emission limit, NOx emissions from Unit 137 F-1 Heater shall not exceed 0.23 lbs/MMBTU heat input on a rolling 30 operating day average. Compliance shall be determined based on CEMS in accordance with 25 Pa Code Section 129.100(a)(1).**

iii. **The following units shall comply with the NOx emission limits in Conditions 4.B.i and 4.B.ii by complying with the NOx Emissions Averaging Plan in the Appendix to this RACT Plan Approval:**

- **a. Unit 137 F-1 Heater**
- **b. Unit 137 F-2 Heater**
- **c. Unit 1332 H-400 Heater**
- **d. Unit 1332 H-401 Heater**
- **e. #3 Boilerhouse Boiler #37**
- **f. #3 Boilerhouse Boiler #39**

g. #3 Boilerhouse Boiler #40

C. Compliance with emission limits for combustion sources listed below **~~shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year sampling, PES may petition AMS for semi-annual monitoring. AMS may, at~~** ~~any time, require three one-hour stack tests.~~ **shall be determined based on source testing in accordance with 25 Pa Code Section 129.100(a)(4).**

	Limitation (lbs. NOx/MMBTU
Source	Gas
Process Heater Unit 433 H-1 heater	0.035
Crude Unit 210A HTR H101	0.089
Crude Unit 210C HTR 13H1	0.104
F-2 @ 137 Unit	0.257
F-3 @ 137 Unit	0.060
B-101@ 231 Unit	0.122
H-2 @ 1332 Unit	0.040
B-104 @ 1232 Unit	0.177
1H-1 @ 859 Unit	0.020
PH-1 @ 864 Unit	0.167
PH-11 @ 864 Unit	0.145
PH-12 @ 864 Unit	0.119
11H-1 @ 865 Unit	0.113
2H-3 @ 860 Unit	0.163
2H-5 @ 860 Unit	0.163
2H-2 @ 860 Unit	**~~0.350~~ 0.25**
2H-4 @ 860 Unit	**~~0.270~~ 0.25**
2H-7 @ 860 Unit	0.157
Unit 865 11H2 heater	0.113
Unit 866 12H1 heater	0.113
Unit 868 8H101 heater	0.113
H01 @ 870 Unit	0.035
H02 @ 870 Unit	0.035

D. All annual combustion tuning shall at a minimum meet the requirements set forth in 129.93 (b)(2) through (5).

E. At least thirty (30) days prior to a performance NOx test, PES shall inform AMS of the date and time of the scheduled test.

~~F. PES shall conduct performance tests to determine compliance with the lbs NOx/MMBTU emission limits of this plan approval for the following heaters:~~

~~i. Within 180 days of the installation of ULNBs for the Unit 231 B101 Heater and the Unit 865 11H1 Heater.~~

~~ii. By June 08, 2016 for the Unit 210 H101 Heater, Unit 865 11H2 Heater, Unit 866 12H1 Heater, and Unit 868 8H101 Heater.~~

~~iii. Testing shall be conducted in accordance with 25 Pa. Code Chapter 139~~

G. The Unit 210 H201 Heater shall be equipped with continuous monitors and recorders for NOx and O_2. The continuous monitors and recorders shall meet the requirements of 25 Pa. Code Chapter 139.

H. Each heater listed below shall be limited to the following rolling 365-day heat input limits:

i. Unit 231 B101 Heater shall not exceed 856,000 MMBTU on a rolling 365-day basis.

ii. Unit 865 11H1 Heater shall not exceed 699,000 MMBTU on a rolling 365-day basis.
iii. Unit 865 11H2 Heater shall not exceed 500,000 MMBTU on a rolling 365-day basis.
iv. Unit 210 H101 Heater shall not exceed 1,643,000 MMBTU on a rolling 365-day basis.
v. Unit 210 H201A/B Heater shall not exceed 2,172,000 MMBTU on a rolling 365-day basis.
vi. Unit 866 12H1 Heater shall not exceed 456,000 MMBTU on a rolling 365-day basis.
vii. Unit 868 8H101 Heater shall not exceed 480,000 MMBTU on a rolling 365-day basis.

5. Recordkeeping and Reporting Requirements

A. The permittee shall maintain a file containing all the records and other data that are required to be collected to demonstrate compliance with NOx/VOC RACT requirements of 25 PA Code 129.91 - 129.94 **and 129.100**.

B. The records shall provide sufficient data and calculations to clearly demonstrate that the requirements of §129.91-129.94 **and 129.100** are met.

C. Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement.

D. Records shall be retained for at least two years and shall be made available to the Department on request.

7. The company shall not impose conditions upon or otherwise restrict the Department's access to the aforementioned source(s) and/or any associated air cleaning device(s) and shall allow the Department to have access at any time to said source(s) and associated air cleaning device(s) with such measuring and recording equipment, including equipment recording visual observations, as the Department deems necessary and proper for performing its duties and for the effective enforcement of the Air Pollution Control Act.

8. Revisions to any conditions approved as RACT by EPA will require resubmission as revision to the PA State Implementation Plan. The applicant shall bear the cost of public hearing and notification required for EPA approval as stipulated in 25 PA Code §129.9**1** (h).

Appendix: NO_X Emission Averaging Plan - ***Note: This entire Appendix is being added to the RACT Plan Approval***

A. Averaging Units:

TABLE 1: NO_X Emission Averaging Units

Averaging Plan[1]	Source	Permitted Capacity (MMBTU/hr)	RACT NO_X[2] Emission Limitation lbs/MMBTU [$E_{iallowable}$]	Reference
Group 1	Unit 137 F-1 Heater	415	0.23[3]	Condition 4.B.ii Assures compliance with 25 Pa Code §129.97(g)(1)(iv)
	Unit 137 F-2 Heater	155	0.25[3]	Condition 4.B.i Assures compliance with 25 Pa Code §129.97(g)(1)(iv)
Group 2	Unit 1332 H-400 Heater	186	0.25	Condition 4.B.i Assures compliance with 25 Pa Code §129.97(g)(1)(iv)
	Unit 1332 H-401 Heater	233	0.25	Condition 4.B.i Assures compliance with 25 Pa Code §129.97(g)(1)(iv)
Group 3	#3 Boilerhouse Boiler #37	495	0.25	Condition 4.B.i Assures compliance with 25 Pa Code §129.97(g)(1)(iv)
	#3 Boilerhouse Boiler #39	495	0.25	Condition 4.B.i Assures compliance with 25 Pa Code §129.97(g)(1)(iv)
	#3 Boilerhouse Boiler #40	660	0.25	Condition 4.B.i Assures compliance with 25 Pa Code §129.97(g)(1)(iv)

[1]Each group is a separate averaging plan consisting of units that share a common stack with a NOx CEMS.
[2]Each emission limit is on a rolling 30 operating day average.
[3]For Group 1, the 0.23 lbs/MMBTU limit applies whenever Unit 137 F-1 Heater is in operation, regardless of Unit 137 F-2 operating status. If only Unit 137 F-2 Heater is operating, then the 0.25 lbs/MMBTU limit applies.

B. Averaging Plans:

For sources in the NOx emissions averaging plan, PES will demonstrate compliance with the NOx emission limitation (See Table 1) for on a continuous basis. The actual NOx emissions from the sources involved in the averaging plan must be less than the allowable NOx mass emissions if the source were subject to an emission limit on a source specified in 25 PA Code §129.97 or another more stringent applicable emission limit. Equation 1 is used to calculate emissions and demonstrate compliance with RACT II.

$$\sum_{i=1}^{n} Ei_{actual} \leq \sum_{i=1}^{n} Ei_{allowable} \qquad \text{Eq. 1}$$

Where:

Ei_{actual} = Actual NO_X mass emissions, including emissions during start-ups, shutdowns and malfunctions, for air contamination source i on a 30-day rolling basis.

$Ei_{allowable}$ = Allowable NO_X mass emissions computed using the allowable emission rate limitations for air contamination source i on a 30-day rolling basis specified in §129.97. If an air contamination source included in an averaging plan is subject to a numerical emission rate limit that is more stringent than the applicable allowable emission rate limitation in §129.97, then the numerical emission rate limit shall be used for the calculation of the allowable NO_X mass emissions.

n = The number of air contamination sources included in the NOx emissions averaging plan.

Replace with "natural gas." There are no petroleum refining operations at NorthStar.

The actual NOx emissions from the combustion sources are estimated using various monitored parameters. The NOx CEMS measures the concentration [parts per million (ppm)] of NOx in the flue gas of the unit. In addition to a NOx CEMS, a certified oxygen (O2) monitor is used to measure the percent oxygen in the flue gas. The F factor, a ratio of combustion gas volumes to heat inputs) is measured daily. ~~The Unit 137 F factor comes from a daily sample of the fuel gas sample line at the unit.~~ The #3 Boilerhouse (BH) F factor comes a daily sample of the ~~fuel gas~~ line at the boilers. ~~The 1332 F factor is from a daily sample of the fuel gas mix drum at the Girard Point Refinery.~~ PES also monitors the heat input (MMbtu/hr) to each ~~heater and~~ boiler. These measured parameters, NOx concentration (ppm), percent oxygen (%O2), F factor (scf/MMBtu), and heat input (MMBtu/hr), are used to calculate the mass emissions based on EPA Method 19.

References to a NOx concentration or O2% for a particular unit in the equations below means the NOx concentration or O2% measured at the shared stack. ~~For example, 137 F1 NOx conc is the NOx~~ concentration measured by the NOx CEMS at the stack shared by 137 Heaters F1 and F2.

Equations 2, 3, and 4 below show how the mass emissions for the sources in this NOx averaging plan are calculated.

137 F1 NOx emissions = 137 F1 NOx conc * F factor 137 * M19 conversion factor * 20.9/(20.9 - O2% 137 F1) * Heat input 137 F1 Eq. 2

Where:

137 F1 NOx Emissions = actual NOx mass emissions from Unit 137 F-1 Heater (lbs)

137 F1 NOx conc = NOx concentration measured by CEMS at 137 F-1 Heater (ppm)

F Factor 137 = F factor for Unit 137 (scf/MMBtu)

M19 conversion Factor = EPA Method 19 Conversion factor from ppm NOx to lb/scf = 1.194 x 10-7 lb/ppm·scf

O2% 137 F1 = percent oxygen at Unit 137

Heat input 137 F1 = heat input to Unit 137 F-1 Heater (MMBtu)

137 F2 NOx emissions = 137 F2 NOx conc * F factor 137 * M19 conversion factor * 20.9/(20.9 - O2% 137 F2) * Heat input 137 F2 Eq. 3

Where:

137 F2 NOx Emissions = actual NOx mass emissions from Unit 137 F-2 Heater (lbs)

137 F2 NOx conc = NOx concentration measured by CEMS at 137 F-2 Heater (ppm)

O2% 137 F2 = percent oxygen at Unit 137

Heat input 137 F2 = heat input to Unit 137 F-2 Heater (MMBtu)

1332 H400 NOx emissions = 1332 H400 NOx conc * F factor 1332 * M19 conversion factor * 20.9/(20.9 - O2% 1332 H400) * Heat input 1332 H400 Eq. 4

Where:

1332 H400 NOx Emissions = actual NOx mass emissions from Unit 1332 H-400 Heater (lbs)

1332 H400 NOx conc = NOx concentration measured by CEMS at 1332 H-400 Heater (ppm)

F factor 1332 = F factor for Unit 137 (scf/MMBtu)

O2% 1332 H400 = percent oxygen at Unit 1332 H-400 heater

Heat input 1332 H400 = heat input to Unit 1332 H-400 Heater (MMBtu)

1332 H401 NOx emissions = 1332 H401 NOx conc * F factor 1332 * M19 conversion factor * 20.9/(20.9 - O2% 1332 H401) * Heat input 1332 H401 Eq. 5

Where:

1332 H401 NOx Emissions = actual NOx mass emissions from Unit 1332 H-401 Heater (lbs)

1332 H401 NOx conc = NOx concentration measured by CEMS at 1332 H-401 Heater (ppm)

O2% 1332 H401 = percent oxygen at Unit 1332 H-401 heater

Heat input 1332 H401 = heat input to Unit 1332 H-401 Heater (MMBtu)

BH 37 NOx emissions = BH 37 NOx conc * F factor 3BH * M19 conversion factor * 20.9/(20.9 - O2% BH 37) * Heat input BH 37 Eq. 6

Where:

BH 37 NOx Emissions = actual NOx mass emissions from #3 BH Boiler #37 (lbs)

BH 37 NOx conc = NOx concentration measured by CEMS at #3 BH Boiler #37 (ppm)

F factor 3BH = F factor for #3 Boilerhouse (scf/MMBtu)

O2% BH 37 = percent oxygen at #3 BH Boiler #37

Heat input BH 37= heat input to #3 BH Boiler #37 (MMBtu)

BH 39 NOx emissions = BH 39 NOx conc * F factor 3BH * M19 conversion factor * 20.9/(20.9 - O2% BH 39) * Heat input BH 39 Eq. 7

Where:

BH 39 NOx Emissions = actual NOx mass emissions from #3 BH Boiler #39 (lbs)

BH 39 NOx conc = NOx concentration measured by CEMS at #3 BH Boiler #39 (ppm)

O2% BH 39 = percent oxygen at #3 BH Boiler #39

Heat input BH 39= heat input to #3 BH Boiler #39 (MMBtu)

BH 40 NOx emissions = BH 40 NOx conc * F factor 3BH * M19 conversion factor * 20.9/(20.9 - O2% BH 40) * Heat input BH 40 Eq. 8

Where:
BH 40 NOx Emissions = actual NOx mass emissions from #3 BH Boiler #40 (lbs)

BH 40 NOx conc = NOx concentration measured by CEMS at #3 BH Boiler #40 (ppm)

O2% BH 40 = percent oxygen at #3 BH Boiler #40

Heat input BH 40 = heat input to #3 BH Boiler #40 (MMBtu)

The actual NOx mass emissions (Σiactual) will be estimated for each source in the averaging plan using Equations 2 through 8 above. The mass emissions (pounds [lbs]) will be calculated on a 30 operating day rolling basis. Emissions during start-ups, shutdowns, and malfunction will be included in these emissions. PES will calculate the actual NOx mass emissions for the three NOx emissions averaging plans based on Equations 9, 10, and 11 below:

Group 1 Σiactual = 137 F1 NOx emissions + 137 F2 NOx emissions Eq. 9
Group 2 Σiactual = 1332 H400 NOx emissions + 1332 H401 NOx emissions Eq. 10
Group 3 Σiactual = BH 37 NOx emissions + BH 39 NOx emissions + BH 40 NOx emissions Eq. 11

Where:
Group 1 Σiactual = actual NOx mass emissions from 137 F-1 Heater and 137 F-2 Heater (lbs)
Group 2 Σiactual = actual NOx mass emissions from 1332 H-400 Heater and 1332 H-401 Heater (lbs)
Group 3 Σiactual = actual NOx mass emissions from #3 Boilerhouse (BH) Boilers #37, #39, and #40 (lbs)

The allowable NOx emissions (Σiallowable) are calculated using the RACT NOx emission rate and the heat input to the combustion source. PES will calculate allowable NOx emissions for the three NOx emissions averaging plans based on Equation 12, 13, and 14:

Group 1 Eiallowable = (137 F1 EF * 137 F1 Heat Duty) + (137 F2 EF * 137 F2 Heat duty) Eq. 12

Group 1 Eiallowable = allowable mass emissions for 137 F-1 Heater and 137 F-2 Heater (lbs)
137 F1 EF = RACT II NOx emission limit for 137 F-1 Heater = 0.23 lb NOx/MMBtu
137 F1 Heat Duty = total heat duty at 137 F-1 Heater during past 30 operating days (MMBtu)
137 F2 EF = RACT II NOx emission limit for 137 F-2 Heater = 0.25 lb NOx/MMBtu
137 F2 Heat Duty = total heat duty at 137 F-2 Heater during past 30 operating days (MMBtu)

Group 2 Eiallowable = (1332 H400 EF * 1332 H400 Heat duty) + (1332 H401 EF + 1332 H401 Heat duty) Eq. 13

Group 2 Eiallowable = allowable mass emissions for 1332 H-400 Heater and 1332 H-401 Heater (lbs)
1332 H400 EF = RACT II NOx emission limit for 1332 H-400 Heater = 0.25 lb NOx/MMBtu
1332 H400 Heat Duty = total heat duty at 1332 H-400 Heater during past 30 operating days (MMBtu)
1332 H401 EF = RACT II NOx emission limit for 1332 H-401 Heater = 0.25 lb NOx/MMBtu
1332 H401 Heat Duty = total heat duty at 1332 H-401 Heater during past 30 operating days (MMBtu)

Group 3 Eiallowable = (Boiler 37 EF * Boiler 37 Heat duty) + (Boiler 39 EF * Boiler 39 Heat duty) + (Boiler 40 EF * Boiler 40 Heat duty) Eq. 14

Group 3 Eiallowable = allowable mass emissions for #3 Boilerhouse (BH) Boilers #37, #39, and #40 (lbs)
Boiler 37 EF = RACT II NOx emission limit for #3 BH Boiler #37 = 0.25 lb NOx/MMBtu
Boiler 37 Heat Duty = total heat duty at #3 BH Boiler #37 during past 30 operating days (MMBtu)
Boiler 39 EF = RACT II NOx emission limit for #3 BH Boiler #39 = 0.25 lb NOx/MMBtu
Boiler 39 Heat Duty = total heat duty at #3 BH Boiler #39 during past 30 operating days (MMBtu)
Boiler 40 EF = RACT II NOx emission limit for #3 BH Boiler #40 = 0.25 lb NOx/MMBtu
Boiler 40 Heat Duty = total heat duty at #3 BH Boiler #40 during past 30 operating days (MMBtu)

After calculating the actual NOx mass emissions and allowable NOx mass emissions for the averaging group, these values will be compared using Equation 1. If the actual NOx mass emissions are less than or equal to the allowable NOx mass emissions, then all combustion sources within the group are in compliance with the RACT NOx limitation.

City of Philadelphia
Department of Public Health
Air Management Services

Title V/State Operating Permit No. V06-016

Philadelphia Energy Solutions Refining and Marketing LLC

3144 Passyunk Avenue
Philadelphia, PA 19145

Issuance Date: July 18, 2014
Effective Date: July 18, 2014
Amendment Date: September 11, 2015
Expiration Date: July 18, 2019

City of Philadelphia
Department of Public Health
Air Management Services

Effective Date: July 18, 2014

Expiration Date: July 18, 2019

Amendment Date: September 11, 2015

Replaces Permit No. V95-038

SECTION A. SOURCE IDENTIFICATION

In accordance with the provisions of the Pennsylvania Code Title 25, Philadelphia Code Title III, and Air Management Regulation (AMR) XIII, the Permittee (Permittee) identified below is authorized by Philadelphia Air Management Services (AMS) to operate the air emission source(s) listed in Table A-1. This facility is subject to all terms and conditions specified in this permit. Nothing in this permit relieves the Permittee from its obligations to comply with all applicable Federal, State and Local laws and regulations.

Facility:	Philadelphia Energy Solutions Refining and Marketing LLC
Owner:	Philadelphia Energy Solutions Refining and Marketing LLC
Location:	3144 Passyunk Avenue, Philadelphia, PA 19145
Mailing Address:	Same
SIC Code(s):	~~2911~~ 1795
Plant ID:	01501
Facility Contact:	Charles D. Barksdale Jr.
Phone:	(215) 339-2074
Permit Contact:	Charles D. Barksdale Jr.
Phone:	(215) 339-2074
Responsible Official:	Mark Brandon
Title:	Vice President and General Manager

Edward Wiener, Chief of Source Registration Date

TABLE A1-FACILITY INVENTORY LIST

Commented [A1]: Green Text is NorthStar
Blue Text is Host
Red Text is to be removed
Green Text with gray highlight is modified NorthStar
Blue Text with gray highlight is modified Host

ID Group	Source Name	Capacity	Fuel/Material^	Construction Date
Group 01 – Boilers and Heater				
CU-018 (GP)	#37 Boiler	495 MM Btu/hr	~~Refinery Gas~~ Natural Gas	1952
CU-020 (GP)	#39 Boiler	495 MM Btu/hr	~~Refinery Gas~~ Natural Gas	1952
CU-021 (GP)	#40 Boiler	660 MM Btu/hr	~~Refinery Gas~~ Natural Gas	1954
Group 02 – Process Heaters				
CU-004 (GP)	Unit 1232 B-104 Heater	70 MM Btu/hr	Refinery Gas	1954
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	45 MM Btu/hr	Refinery Gas	1958
CU-006 (GP)	Unit 1332 H-602 Heater	49 MM Btu/hr	Refinery Gas	1958
CU-007 (GP)	Unit 1332 H-601 Heater	48 MM Btu/hr	Refinery Gas	1958
CU-008 (GP)	Unit 1332 H-600 Heater (IDLED)	21.3 MM Btu/hr	Refinery Gas	1958
CU-009 (GP)	Unit 1332 H-2 Heater	60 MM Btu/hr	Refinery Gas	2005
CU-010 (GP)	Unit 1332 H-401 Heater	233 MM Btu/hr	Refinery Gas	1958
CU-011 (GP)	Unit 1332 H-400 Heater	186 MM Btu/hr	Refinery Gas	1958
CU-012 (GP)	Unit 1332 H-3 Heater	43 MM Btu/hr	Refinery Gas	1958
CU-013 (GP)	Unit 137 F-1 Heater	415 MM Btu/hr	Refinery Gas	1952
CU-014 (GP)	Unit 137 F-2 Heater	155 MM Btu/hr	Refinery Gas	1952
CU-015 (GP)	Unit 137 F-3 Heater	60 MM Btu/hr	Refinery Gas	1974
CU-016 (GP)	Unit 231 B-101 Heater	91 MM Btu/hr	Refinery Gas	1957
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	260 MM Btu/hr	Refinery Gas	1973
CU-101 (PB)	Unit 210 H-101 Heater	183 MMBTU/hr	Refinery Gas	Dec-64
CU-102 (PB)	Unit 210 H-201 Heater	242 MMBTU/hr	Refinery Gas	May-73
CU-103 (PB)	Unit 210 13H-1 Heater	235.4 MMBTU/hr	Refinery Gas	May-73
CU-108 (PB)	Unit 860 2H-1 Heater (IDLED)	49.0 MMBTU/hr	Refinery Gas	Mar-67
CU-109 (PB)	Unit 860 2H-2 Heater	69.8 MMBTU/hr	Refinery Gas	Mar-67

CU-110 (PB)	Unit 860 2H-3 Heater	174.7 MMBTU/hr	Refinery Gas	Mar-67
CU-111 (PB)	Unit 860 2H-4 Heater	99.4 MMBTU/hr	Refinery Gas	Mar-67
CU-112 (PB)	Unit 860 2H-5 Heater	155 MMBTU/hr	Refinery Gas	Mar-67
CU-113 (PB)	Unit 860 2H-6 Heater (IDLED)	36.7 MMBTU/hr	Refinery Gas	Mar-67
CU-114 (PB)	Unit 860 2H-7 Heater	59 MMBTU/hr	Refinery Gas	Mar-67
CU-115 (PB)	Unti 860 2H-8 Heater	49.6 MMBTU	Refinery Gas	Mar-67
CU-118 (PB)	Unit 864 PH-1 Heater	80 MMBTU/hr	Refinery Gas	Aug-71
CU-123 (PB)	Unit 864 PH-7 Heater	45.5 MMBTU/hr	Refinery Gas	Aug-71
CU-124 (PB)	Unit 864 PH-11 Heater	74 MMBTU/hr	Refinery Gas	Aug-71
CU-125 (PB)	Unit 864 PH-12 Heater	85.1 MMBTU/hr	Refinery Gas	Aug-71
CU-126 (PB)	Unit 865 11H-1 Heater	72.2 MMBTU/hr	Refinery Gas	May-73
CU-127 (PB)	Unit 86511H-2 Heater	49.9 MMBTU/hr	Refinery Gas	May-73
CU-128 (PB)	Unit 866 12H-1 Heater	43 MMBTU/hr	Refinery Gas	May-73
CU-129 (PB)	Unit 868 8H-101 Heater Inc.	49.5 MMBTU/hr	Refinery Gas / Natural Gas	7/2003
CU-137 (PB)	Unit 870 (Tier II Low Sulfur Gas Hydrodesulfurization Plant), H1 Heater	97 MMBTU/hr	Refinery Gas / Natural Gas	2004
CU-138 (PB)	Unit 870 (Tier II Low Sulfur Gas Hydrodesulfurization Plant), H2 Heater	53 MMBTU/hr	Refinery Gas / Natural Gas	2004
CU-139	Unit 859 1H-1 Heater	98 MMBTU/hr	Refinery Gas / Natural Gas	2009

Group 03 - Flares

P-117 (GP) - CD012	1231 Flare – Unit 1232		~~RFG~~ Natural Gas or purchased propane (pilot)	1946
P-118 (GP) – CD013	1232 Flare – Unit 1232		~~RFG~~ Natural Gas or purchased propane (pilot)	Replaced 2005
P-119 (GP) - CD014	433 Flare		RFG	1972
P-642 (PB) CD111	Flare, North Flare in South Yard		~~RFG~~ Natural Gas or purchased propane (pilot)	Replaced 2004

P-643 (PB) CD112	Flare, South Flare in South Yard (currently idled)		~~RFG~~ Natural Gas or purchased propane (pilot)	1973
P-646 (PB)	Flares (2), Emergency Sulfur Plant		RFG	Replaced 2005

Group 04 - Loading Facilities and Control Equipment

P-129 (GP)	~~1733~~ Tank Truck Loading – ~~Cumene~~ Petroleum Liquids < 1.5 psia			
P-183 (GP)	~~Unit 1732 benzene~~ petroleum liquids < 11.1 psia railcar unloading station			
P-638 (PB)	Propane Loading Station			
CD-104	LPG Flare	Used by P-638		

Group 05 – Sulfur Recovery Units

P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	100 tons/day		
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	100 tons/day		
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Used by P-659 and P-660		
CD-109	Tail Gas Incinerator (TGU-1)	Used by P-659 and P-660		
CD-114	TGU 2			
CD-113	Backup Tail Gas Unit (BUTGU)	Used by P-659 and P-660		10/2002

Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV

[40 CFR 60.480, 60.590, & 63.648; 25 Pa Code 129.58; AMR V Section XIII A., 40 CFR 61 Subpart J]

Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components Subject to 40 CFR 63 Subpart H

[40 CFR 63.160-182; 25 Pa Code 129.571; AMR V Section XIII A & B.]

Group 08 – Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[25 Pa Code 129.58, Case-by-case RACT, 25 Pa Code §§129.91-129.95; AMR V Section XIII A.]

Group 09 – Cooling Towers

P-125 (GP)	Cooling Tower 1232 - Unit 1232	50,000 gallons per minute		
P-126 (GP)	Cooling Tower 433 - Unit 433			
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733			
P-128 (GP)	Cooling Tower 137 – Unit 137			
P-632 (PB)	Cooling Tower, Unit 868	1,110,000		
P-633 (PB)	Cooling Tower, Unit 210	1,566,000		
P-634 (PB)	Cooling Tower, Unit 864	1,080,000		
P-635 (PB)	Cooling Tower, Complex	3,158,000		

Group 10 – Miscellaneous Process Vents (Group 1) subject to 40 CFR 63 Subparts G and CC

P-184 (GP)	Four vents [one goes to CD-006, and three go to a process heater (CD-006) or to CD-012 or CD-013]	1.Fuel gas from E-401 absorber at Unit 231: controlled to a flare per 63.643(a)(1) 2. Off gas from sour water stripper 8733: controlled to a flare per 63.643(a)(1) 3.Off gas from Merox unit at Unit 433: controlled via heater or flare 4. Vacuum tower off gas at Unit 137 via heater		
CD-006	F-1 Heater	Used by P-184		
P-181	Six vents (go to CD-012 or CD-013)	1. Steam use in UE6, UE12, UE24 2. P004		

		3. Part of sources P-123 and P-114 4. Extractor Tower PCV, Extractor receiver vent, Water receiver vent, Solvent Regen Ejector vent, Deprop overhead vent, Benzene recycle tower vent 5. Part of source P-115		
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	Vents at 210 Unit A/B Vacuum Tower		

Group 13A – Tanks Subject to 40 CFR 63 Subpart G

P-001 (GP)	T-1116, EFR	>40M Gal	Naphtha	1953
P-005 (GP)	T-217, IFR	>40M Gal	Benzene	1991
P-017 (GP)	T-790, IFR	>40M Gal	Benzene	1962
P-018 (GP)	T-791, IFR	>40M Gal	Benzene	1962
P-021 (GP)	T-795, IFR	>40M Gal	Clay Tower BTX	1973
P-022 (GP)	T-798, IFR	>40M Gal	Benzene	1964
P-023 (GP)	T-799, IFR	>40M Gal	Benzene	1964
P-024 (GP)	T-1117, EFR	>40M Gal	Benzene/Toluene	1953
P-025 (GP)	T-1205, IFR	>40M Gal	~~Benzene~~ Petroleum Liquids < 11.1 psia	1972
P-029 (GP)	T-1214, IFR	>40M Gal	~~Benzene~~ Petroleum Liquids < 11.1 psia	1961
P-523 (PB)	Tank # 121, IFR	>40M Gal	Benzene/Toluene	1940

Group 13B - Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC

~~P-012 (GP)~~	~~T-272, IFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1971~~
P-015 (GP)	T-285, IFR	>40M Gal	Naphtha	1971

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P-016 (GP)	T-286, IFR	>40M Gal	Naphtha	1948
P-034 (GP)	T-276, IFR	>40M Gal	Naphtha	1945
P-538 (PB)	T-172	>40M Gal	Gasoline	
P-545 (PB)	Tank #190, IFR	>40M Gal	Reformer Feed	1950
P-547 (PB)	Tank #204, IFR	>40M Gal	Dewatering	1931

Group 13C – Internal Floating Roof Tanks Subject to 40 CFR 60, Subpart Kb

P-009 (GP)	T-250, IFR	>40M Gal	Naphtha/Furnace Oil	1988
P-010 (GP)	T-251, IFR	>40M Gal	Naphtha	1993
P-012 (GP)	T-272, IFR	>40M Gal	Recovered Oil	1971
P-134 (GP)	T-270, IFR	>40M Gal	Recovered Oil	1992
P-135 (GP)	T-767, IFR	>40M Gal	Recovered Oil	1992
P-136 (GP) (temp inactive)	T-768, IFR	>40M Gal	Recovered Oil	1994
P-137 (GP)	T-1101, IFR	>40M Gal	Recovered Oil	2011
P-159 (GP)	T-1086	>40M Gal	Spent caustic	1954
P-160 (GP)	T-1087	>40M Gal	Spent caustic	1954
P-174 (GP)	T-1007	>40M Gal	~~RCRA CC waste~~ Oily Wastewater	1990
P-501 (PB)	Tank # 26, IFR	>40M Gal	Ethanol	1995
P-511 (PB)	Tank # 37, IFR	>40M Gal	Gasoline	1994
P-594 (PB)	Tank #847, IFR	>40M Gal	Crude Oil	1954
P-603 (PB)	Tank #885, IFR	>40M Gal	Crude Oil	1974
P-604 (PB)	Tank #886, IFR	>40M Gal	Crude Oil	1974

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Group 14A – External Floating Roof Tanks Subject to only Local and State Regulations

Group 14B – External Floating Roof Tanks Subject to 40 CFR 63, Subpart CC

P-502 (PB)	Tank # 27, EFR	>40M Gal	Gasoline components	1976
P-503 (PB)	Tank # 28, EFR	>40M Gal	Alkylate	1958
P-504 (PB)	Tank # 29, EFR	>40M Gal	Reformate	1955
P-507 (PB)	Tank # 33, EFR	>40M Gal	Gasoline	1956
P-508 (PB)	Tank # 34, EFR	>40M Gal	Gasoline	1954
P-509 (PB)	Tank # 35, EFR	>40M Gal	Gasoline	1954
P-512 (PB)	Tank # 38, EFR	>40M Gal	Gasoline	1959
P-513 (PB)	Tank # 39, EFR	>40M Gal	Gasoline	1955
P-514 (PB)	Tank # 40, EFR	>40M Gal	Gasoline	1982
~~P-521 (PB)~~	~~Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)~~	~~>40M Gal~~	~~Recovered Oil~~	~~1981~~
P-525 (PB)	Tank # 126, EFR	>40M Gal	Reformer Feed	1955
P-526 (PB)	Tank # 128, EFR	>40M Gal	Reformate	1959
P-527 (PB)	Tank # 129, EFR	>40M Gal	Reformate	1971
P-537 (PB)	Tank # 162, EFR	>40M Gal	Gasoline	1908
P-540 (PB)	Tank # 176, EFR	>40M Gal	Reformer Feed	1967
P-541 (PB)	Tank # 178, EFR	>40M Gal	Gasoline Blending Components	1974
P-542 (PB)	Tank #179, EFR	>40M Gal	Reformer Feed	1974
~~P-546 (PB)~~	~~Tank #191, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1958~~
~~P-579 (PB)~~	~~Tank #826, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~2002~~
~~P-587 (PB)~~	~~Tank #840, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1953~~
~~P-588 (PB)~~	~~Tank #841, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1953~~
~~P-590 (PB)~~	~~Tank #843, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1954~~
~~P-594 (PB)~~	~~Tank #847, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1954~~
P-599 (PB)	Tank #881, EFR	>40M Gal	Crude Oil	1958
P-600 (PB)	Tank #882, EFR	>40M Gal	Crude Oil	1959
~~P-601 (PB)~~	~~Tank #883, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1961~~
~~P-602 (PB)~~	~~Tank #884, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1974~~
~~P-603 (PB)~~	~~Tank #885, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1974~~
~~P-604 (PB)~~	~~Tank #886, EFR~~	~~>40M Gal~~	~~Crude Oil~~	~~1974~~

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Group 14C – External Floating Roof Tanks Subject to 40 CFR 60 Subpart Kb Requirements (or equivalent)

P-006 (GP)	T-228, EFR		Stormwater/Process Water	1991
P-155 (GP)	T-844	>40M Gal	#2 sep. water	1976
P-162 (GP)	T-1136	>40M Gal	#4 sep. water	1976
P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	>40M Gal	Recovered Oil	1981
P-546 (PB)	Tank #191, EFR	>40M Gal	Recovered Oil	1958
P-579 (PB)	Tank #826, EFR	>40M Gal	Crude Oil	2002
P-587 (PB)	Tank #840, EFR	>40M Gal	Crude Oil	1953
P-588 (PB)	Tank #841, EFR	>40M Gal	Crude Oil	1953
P-590 (PB)	Tank #843, EFR	>40M Gal	Crude Oil	1954
P-601 (PB)	Tank #883, EFR	>40M Gal	Crude Oil	1961
P-602 (PB)	Tank #884, EFR	>40M Gal	Crude Oil	1974
P-624 (PB)	Tank # 7300, EFR	NA	Stormwater/Process Water	1992
P-627 (PB)	Tank #7308, EFR	NA	Stormwater/Process Water	1972

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Group 15A – ~~Group 2 Storage Tanks~~ Petroleum Liquids Storage Tanks

P-002 (GP)	T-1216, IFR	>40M Gal	~~Cumene~~ Petroleum Liquids < 11.1 psia	1975
P-003 (GP)	T-1217, IFR	>40M Gal	~~Cumene~~ Petroleum Liquids < 11.1 psia	1961
P-019 (GP)	T-792, Fixed Roof	>40M Gal	Cumene	1962
P-020 (GP)	T-793, Fixed Roof	>40M Gal	Cumene	1962
P-027 (GP)	T-1211, Fixed Roof	>40M Gal	~~Cumene~~ Petroleum Liquids < 1.5 psia	1960
P-028 (GP)	T-1213, Fixed Roof	>40M Gal	~~Cumene~~ Petroleum Liquids < 1.5 psia	1960
P-030 (GP)	T-1215, Fixed Roof	>40M Gal	~~Cumene~~ Petroleum Liquids < 1.5 psia	1961
P-031 (GP)	T-1219, Fixed Roof	>40M Gal	~~Cumene~~ Petroleum Liquids < 1.5 psia	1961
P-032 (GP)	T-273, Fixed Roof	>40M Gal	~~Cat Charge Stock~~ Resid	1941
P-035 (GP)	T-280, Fixed Roof	>40M Gal	Cat Charge Stock	1947
P-036 (GP)	T-282, Fixed Roof	>40M Gal	~~Low Sulfur Diesel~~ Gas Oil or Cat	1947

			Charge Stock	
P-037 (GP)	T-284, Fixed Roof	>40M Gal	~~Low Sulfur Diesel~~ Gas Oil or Cat Charge Stock	1948
P-039 (GP)	T-494, Fixed Roof	>40M Gal	~~Cutting Oil~~ Main Fract Bottoms	1965
P-144 (GP)	T-219	>40M Gal	~~Cutter stock~~ Light Cycle Oil	1925
P-146 (GP)	T-225	>40M Gal	Non-Commercial # 6 oil	1973
P-147 (GP)	T-227	>40M Gal	~~Non-Commercial # 6 oil~~ Main Fract Bottoms	1954
P-150 (GP)	T-281	>40M Gal	Cat charge stock	1946
P-151 (GP)	T-676	>40M Gal	Non-Commercial # 6 oil	1953
P-153 (GP)	T-794	>40M Gal	~~Wet glycol solvent~~ (Plant TEG) – tetra ethylene glycol	1990
P-154 (GP)	T-796	16.8M Gal	~~Glycol solvent~~ Fresh TEG	1962
P-157 (GP)	T-1038	>40M Gal	Non-Commercial # 6 oil	1972
P-166 (GP)	T-1218	>40M Gal	~~Cumene~~ Petroleum Liquids < 1.5 psia	1960
P-167 (GP)	T-1220	>40M Gal	~~Cumene~~ Petroleum Liquids < 1.5 psia	1963
P-175 (GP)	T-3000	500 gal	Lube Oil	NA
P-176 (GP)	T-3001	500 gal	Lube Oil	
P-177 (GP)	T-3002	1000 gal	Lube Oil	
P-178 (GP)	T-3004	1000 gal	Lube Oil	
P-179 (GP)	T-3005	500 gal	Lube Oil	
P-515 (PB)	Tank # 42, Cone Roof	>40M Gal	Diesel	2013
P-516 (PB)	Tank # 43, Cone Roof	>40M Gal	Jet/Kero	1958
P-518 (PB)	Tank # 83, Cone Roof	>40M Gal	Super K-1	1950
P-519 (PB)	Tank # 84, Cone Roof	>40M Gal	Jet/Kero	1950
P-520 (PB)	Tank # 85, Cone Roof	>40M Gal	LS Diesel	1955
P-529 (PB)	Tank # 144, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-530 (PB)	Tank # 145, Cone Roof	>40M Gal	Main Fract Bottoms	1994
P-534 (PB)	Tank # 151, EFR	>40M Gal	~~Cracking Stocks~~ Gas Oil	1979
P-535 (PB)	Tank # 152, Cone Roof	>40M Gal	Cracking Stocks	1959
P-551 (PB)	Tank #253, Cone Roof	>40M Gal	Heating Oil	1923
P-563 (PB)	Tank #663, Cone Roof	>40M Gal	~~Asphalt/Cracking Stocks~~ Main Fract	1959

			Bottoms	
P-565 (PB)	Tank #666, Cone Roof	>40M Gal	Cracking Stocks	1954
P-567 (PB)	Tank #668, Cone Roof	>40M Gal	Wash Oil	1957
P-571 (PB)	Tank #672, Cone Roof	>40M Gal	~~Cracking Stocks (Light Cycle Oil)~~ Gas Oil	1957
P-574 (PB)	Tank #821, IFR	>40M Gal	Cracking Stocks	1941
P-575 (PB)	Tank #822, IFR	>40M Gal	Dewatering	1941
P-576 (PB)	Tank #823, Cone Roof	>40M Gal	Cracking Stocks (Low Sulfur Diesel)	1941
P-577 (PB)	Tank #824, Cone Roof	>40M Gal	Cracking Stocks	1941
P-578 (PB)	Tank #825, Cone Roof	>40M Gal	Heating Oil	1954
P-580 (PB)	Tank #831, EFR	>40M Gal	Jet/Kero	1943
P-582 (PB)	Tank #833, IFR	>40M Gal	~~Cracking Stocks~~ Gas Oil	1950
P-584 (PB)	Tank #835, IFR	>40M Gal	Med Distillate	1953
P-585 (PB)	Tank #836, IFR	>40M Gal	Med Distillate	1954
P-623 (PB)	Tank #7275, Open Top	>40M Gal	Wastewater (Stormwater)	1952
P - (433)	Tank #1051, EFR	>40MGal	Spent Potassium Chloride	

Group 15B – Fixed Roof Tanks Subject to Subpart Kb Recordkeeping Requirements

P-158 (GP)	T-1039	>40M Gal	Non-Commercial # 6 oil	1989
P-171 (GP)	T-1004	>40M Gal	RCRA misc waste	1989
P-172 (GP)	T-1005	>40M Gal	RCRA misc waste	1989

Group 17 – Marine Loading Equipment

P-130 (GP)	Barge Loading – Girard Point Wharf			
CD-011	~~Flare~~ Thermal Oxidizer for P130	Used by P-130		
P-636 (PB)	Marine Barge Loading			

Group 18 – Fluidized Catalytic Cracking Units

P-120 (GP)	FCCU, Unit 1232 Regenerator			1964
CD-004	CO Boiler	580 MMBTU/Hr Used by P-120		
	1232 SCR	Used by P-120		
	Wet Gas Scrubber	Used by P-120		
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	47,500 bbl/day on 365 day avg, max 50,000 bbl/any given day		
CD-110	Electrostatic Precipitator	Used by P-661		

Group 19 – Inter-Refinery Pipeline Equipment

P-664 (PB)	Inter-Refinery Pipeline			

Group 20 – Alkylation Unit

P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)			
CD-014	Flare (Unit 433)	Used by P-182		
P-662 (PB)	Alkylation Unit 869			
CD-111 (P-642)	North Flare South Yard	Used by P-662		
CD-112	South Flare South Yard (idled)	Used by P-662		

Group 21 – Hydrogen Purification

P-674 (PB)	H2 Purification			

Group 22 – Degreasing Vats

P-108 (GP)	Degreasing Vats		Degreaser	NA
(PB)	Machine/Fab Shop - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(PB)	Machine/Fab Shop - Agitating	65 gal	SK Premium Solvent, Petroleum	

	Parts Washer Model 81		Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(PB)	Machine/Fab Shop – Model SK 34.1R	25 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Garage – Model E3000	10 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	2960 gal	Diesel Fuel	
(GP)	Bundle Pad – 22 x 6 x 4 Bundle Cleaner	4578 gal	Diesel Fuel	
(GP)	3 Boiler House - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	3 Boiler House - Agitating Parts Washer Model 81	65 gal	SK Premium Solvent, Petroleum Distillates, 100 % VOC, 02 mmHg, MSDS 82658	
(GP)	I&E Bldg – Model 250 Recycling Parts Washer	20 gal	SK Premium Gold Solvent, MSDS 82655 / 82774	

Group 23 – Butane Isomerization

P-121 (GP)	Butane Isomerization - Unit 331			

Group 25A – ~~Refining~~ Wastewater

P-131 (GP)	4A API Separator – WWT			
CD-002	Carbon Adsorber	Used by P-131		
P-132 (GP)	2B API Separator – WWT			
CD-003	Carbon Adsorber	Used by P-132		
P-639 (PB)	API Separators A&B – Bio Plant			
CD-105	Carbon Adsorption	Used by P-639		

P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC			
CD-010	Carbon Adsorber	Used by P-114		
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant			
CD-106	Carbon Adsorption	Used by P-640		
P-641 (PB)	Bio Plant Sewer System – Refinery			
CD-107	Carbon Adsorption	Used by P-641		
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC			
P-141 (GP)	T-1146, T-1147	Roughing Filters at WWTP	Wastewater	NA
CD-007	Carbon Adsorber	Used by P-141		
P-142 (GP)	T-1142, T-1143	Oxidation Tanks at WWTP	Wastewater	NA

Group 25B – SOCMI Wastewater

P-123	SOCMI Wastewater			
P-115	Refining Wastewater			
P-180 (GP)	Cumene Production Unit 1733			
P-181 (GP)	Benzene Production Unit 1732			

Group 26 – Benzene and Cumene Production

P-180 (GP)	Cumene Production Unit 1733			
P-181 (GP)	Benzene Production Unit 1732			
UV-15	Regenerator Bottoms Process Vent			
CUV-12	DIBP Overhead Receiver Process Vent			

CUV-312	Cumene "C" Tower Receiver Process Vent			

Group 27 – Emergency Generator and Fire Pump

EM-001	Caterpillar (model 3412DITTA) Emergency Generator	896 HP	Diesel	2004
FP-010	24PEN4 Fire Pump #4	211 Hp	Diesel	2011
FP-011	24P1 Fire Engine (Haenn's Wharf)	210 Hp	Diesel	2012
FP-012	Fire Pump (1st and Wharf #8)	475 bhp	ULSD	
FP-013	24P2 North Fire Pump (Haenn's Wharf)	210 bhp	ULSD	
FP-014	24P3 South Fire Pump (Short Pier)	350	ULSD	
FP-015	24PEN5 Fire Pump (North Yard)	250 bhp	ULSD	
FP-016	24PEN6 Fire Pump (North Yard Wharf)	250 bhp	ULSD	
FP-017	28P-1150A HF Mitigation Water Pump FP-12#1 (Unit 433)	487 bhp	ULSD	
FP-018	28P-1150B HF Mitigation Water Pump FP+12 #2 (Unit 433)	487 bhp	ULSD	
FP-019	Belmont Firehouse Williams Pump (fire pump) affixed to a trailer	750 bhp	ULSD	

Group 28 – Internal Combustion Engines

IC-002	53P-800C pump	200 bhp	Diesel	
IC-005	FE-5(2) Flood Control Pump Driver	28 bhp	Diesel	
IC-006	Godwin 894572/4 Flood Control	115 bhp	Diesel	

	Pump Driver			
IC-007	B-2623 Flood Control Pump Driver	102 bhp	Diesel	
IC-008	Engine Set 1290 (northside of 8 Sep)	214 bhp	Diesel	
rIC-001	Rental back-up pump (2nd &1st, 3BH sump)	≤ 14 bhp	Diesel	
rIC-002	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-003	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-004	Rental back-up air compressor (small maintenance air compressors)	≤ 55 bhp	Diesel	
rIC-005	Rental back-up air compressor (small maintenance air compressors)	≤ 101 bhp	Diesel	
rIC-006	Rental back-up air compressor (small maintenance air compressors)	≤ 101 bhp	Diesel	
rIC-007	Rental back-up pump (WW pump 270 Tk to WWTP)	≤ 144 bhp	Diesel	

Group 29 - Stacks

S-111 (GP)	Used by CU-004, B-104 HTR			
S-112 (GP)	Used by CU-005, H-1 Debutanizer HTR			
S-113 (GP)	Used by CU-006, H-602 HTR			

S-114 (GP)	Used by CU-007, H-601 HTR			
S-115 (GP)	Used by CU-008, H-600 HTR			
S-116 (GP)	Used by CU-009, H-2 HTR			
S-117 (GP)	Used by CU-010, H-401 HTR			
S-117A (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-117B (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-117C (GP)	Used by CU-010, H-401 HTR	Back-up stack (dampers normally closed)		
S-118 (GP)	Used by CU-011, H-400 HTR			
S-118A (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-118B (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-118C (GP)	Used by CU-011, H-400 HTR	Back-up stack (dampers normally closed)		
S-119 (GP)	Used by CU-012, H-3 HTR			
S-120 (GP)	Used by CU-013, F-1 HTR Used by CU-014, F-2 HTR			
S-122 (GP)	Used by CU-015, F-3 HTR			
S-123A (GP)	Used by CU-016, B-101 HTR			
S-123B (GP)	Used by CU-016, B-101 HTR			
S-123C (GP)	Used by CU-016, B-101 HTR			
S-124 (GP)	Used by CU-017, H-1 Iso Stripper Heater			
S-125 (GP)	Used by CU-018, 37 Boiler Used by CU-020, 39 Boiler Used by CU-021, 40 Boiler			
S-131 (GP)	Used by P-131, 4A API Separator Unit – WWT			
S-132 (GP)	Used by P-132, 2B API Separator Unit – WWT			

S-133 (GP)	Used by CD-004 FCCU/CO Boiler			
S-134 (GP)	Used by P-121 Butane Isomerization			
S-138 (GP)	Used by P-125, 1232 Cooling Tower			
S-139 (GP)	Used by P-126, 433 Cooling Tower			
S-140 (GP)	Used by P-127, 490 Cooling Tower			
S-141 (GP)	Used by P-128, 137 Cooling Tower			
S-142 (GP)	Used by P-129, 1733 Loading Rack			
S-143 (GP)	Used by P-130, Barge Loading – Girard Point Wharf			
S-144 (GP)	Used by P-108 Degreasing Vats			
S-145 (GP)	Used by P-109, 40 CFR 60, Subpart GGG Leaks			
S-146 (GP)	Used by P-110, 40 CFR 63, Subpart CC Leaks			
S-147 (GP)	Used by P-111, 40 CFR 63, Subpart H Leaks			
S-148 (GP)	Used by P-112, 40 CFR 63, Subpart J			
S-149 (GP)	Used by P-113, 29 PA 129.58 Equipment Leaks			
S-150 (GP)	Used by P-114, 40 CFR 61, Subpart FF Wastes			
S-151 (GP)	Used by P-115, Miscellaneous Wastewater			
S-153 (GP)	Used by P-117, 1231 Flare			
S-154 (GP)	Used by P-118, 1232 Flare			

S-155 (GP)	Used by P-119, 433 Flare			
S-156 (GP)	Used by P-120, 1232 FCCU			
S-200 (GP)	Used by P-001, T-1116			
S-201 (GP)	Used by P-002, T-1216			
S-202 (GP)	Used by P-003, T-1217			
S-204 (GP)	Used by P-005, T-217			
S-205 (GP)	Used by P-006, T-228			
S-208 (GP)	Used by P-009, T-250			
S-209 (GP)	Used by P-010, T-251			
S-211 (GP)	Used by P-012, T-272			
S-214 (GP)	Used by P-015, T-285			
S-215 (GP)	Used by P-016, T-286			
S-216 (GP)	Used by P-017, T-790			
S-217 (GP)	Used by P-018, T-791			
S-218 (GP)	Used by P-019, T-792			
S-219 (GP)	Used by P-020, T-793			
S-220 (GP)	Used by P-021, T-795			
S-221 (GP)	Used by P-022, T-798			
S-222 (GP)	Used by P-023, T-799			
S-223 (GP)	Used by P-024, T-1117			
S-224 (GP)	Used by P-025, T-1205			
S-226 (GP)	Used by P-027, T-1211			
S-227 (GP)	Used by P-028, T-1213			
S-228 (GP)	Used by P-029, T-1214			
S-229 (GP)	Used by P-030, T-1215			
S-230 (GP)	Used by P-031, T-1219			
S-231 (GP)	Used by P-032, T-273			
S-232 (GP)	Used by P-033, T-275			
S-233 (GP)	Used by P-034, T-276			
S-234 (GP)	Used by P-035, T-280			
S-235 (GP)	Used by P-036, T-282			
S-236 (GP)	Used by P-037, T-284			

S-238 (GP)	Used by P-039, T-494			
S-242 (GP)	Used by P-043, T-291			
S-243 (GP)	Used by P-044, T-292			
S-244 (GP)	Used by P-045, T-229			
S-245 (GP)	Used by P-134, T-270			
S-246 (GP)	Used by P-135, T-767			
S-247 (GP)	Used by P-136, T-768			
S-248 (GP)	Used by P-137, T-1101			
S-252 (GP)	Used by P-141, Two roughing filters (110 and 111)			
S-253 (GP)	Used by P-142, Two oxidation tanks (101 and 102)			
S-254 (GP)	Used by P-143, 1732 and 1733 Plant Accumulators			
S-801 (PB)	Used by CU-101, Unit 210A, HTR H201			
S-802 (PB)	Used by CU-102, Unit 210B, HTR H201			
S-803 (PB)	Used by CU-103, Unit 210C, HTR 13H1			
S-804 (PB)	Not in use			
S-805 (PB)	Not in use			
S-806 (PB)	Not in use			
S-807 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2 Used by CU-111, Unit 860, HTR 2H4			
S-808 (PB)	Used by CU-108, Unit 860, HTR 2H1 Used by CU-109, Unit 860, HTR 2H2			

	Used by CU-111, Unit 860, HTR 2H4			
S-809 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5			
S-810 (PB)	Used by CU-110, Unit 860, HTR 2H3 Used by CU-112, Unit 860, HTR 2H5			
S-811 (PB)	Used by CU-113, Unit 860, HTR 2H6			
S-812 (PB)	Used by CU-114, Unit 860, HTR 2H7			
S-813 (PB)	Used by CU-115, Unit 860, HTR 2H8			
S-818 (PB)	Used by CU-118, Unit 864, HTR PH1			
S-822 (PB)	Used by CU-123, Unit 864, HTR PH7			
S-823 (PB)	Used by CU-124, Unit 864, HTR PH11			
S-824 (PB)	Used by CU-125, Unit 864, HTR PH12			
S-825 (PB)	Used by CU-126, Unit 865, HTR 11H1			
S-826 (PB)	Used by CU-127, Unit 865, HTR 11H2			
S-827 (PB)	Used by CU-128, Unit 865, HTR 12H1			
S-828 (PB)	Used by CU-129, FCCU 868, HTR 8H101			

S-829 (PB)	Used by CU-130, H1 Heater			
S-836 (PB)	Used by P-501, Tank #26			
S-837 (PB)	Used by P-502, Tank #27			
S-838 (PB)	Used by P-503, Tank #28			
S-839 (PB)	Used by P-504, Tank #29			
S-840 (PB)	Used by P-505, Tank #30			
S-842 (PB)	Used by P-507, Tank #33			
S-843 (PB)	Used by P-508, Tank #34			
S-844 (PB)	Used by P-509, Tank #35			
S-845 (PB)	Used by P-510, Tank #36			
S-846 (PB)	Used by P-511, Tank #37			
S-847 (PB)	Used by P-512, Tank #38			
S-848 (PB)	Used by P-513, Tank #39			
S-849 (PB)	Used by P-514, Tank #40			
S-850 (PB)	Used by P-515, Tank #42			
S-851 (PB)	Used by P-516, Tank #43			
S-853 (PB)	Used by P-518, Tank #83			
S-854 (PB)	Used by P-519, Tank #84			
S-855 (PB)	Used by P-520, Tank #85			
S-856 (PB)	Used by P-521, Tank #117			
S-858 (PB)	Used by P-523, Tank #121			
S-859 (PB)	Used by P-524, Tank #125			
S-860 (PB)	Used by P-525, Tank #126			
S-861 (PB)	Used by P-526, Tank #128			
S-862 (PB)	Used by P-527, Tank #129			
S-864 (PB)	Used by P-529, Tank #144			
S-865 (PB)	Used by P-530, Tank #145			
S-869 (PB)	Used by P-534, Tank #151			
S-870 (PB)	Used by P-535, Tank #152			
S-872 (PB)	Used by P-537, Tank #162			
S-873 (PB)	Used by P-538, Tank #172			
S-875 (PB)	Used by P-540, Tank #176			

S-876 (PB)	Used by P-541, Tank #178			
S-877 (PB)	Used by P-542, Tank #179			
S-880 (PB)	Used by P-545, Tank #190			
S-881 (PB)	Used by P-546, Tank #191			
S-882 (PB)	Used by P-547, Tank #204			
S-886 (PB)	Used by P-551, Tank #253			
S-902 (PB)	Used by P-567, Tank #668			
S-906 (PB)	Used by P-571, Tank #672			
S-909 (PB)	Used by P-574, Tank #821			
S-910 (PB)	Used by P-575, Tank #822			
S-911 (PB)	Used by P-576, Tank #823			
S-912 (PB)	Used by P-577, Tank #824			
S-913 (PB)	Used by P-578, Tank #825			
S-914 (PB)	Used by P-579, Tank #826			
S-915 (PB)	Used by P-580, Tank #831			
S-917 (PB)	Used by P-582, Tank #833			
S-919 (PB)	Used by P-584, Tank #835			
S-920 (PB)	Used by P-585, Tank #836			
S-922 (PB)	Used by P-587, Tank #840			
S-923 (PB)	Used by P-588, Tank #841			
S-924 (PB)	Used by ~~P-589~~ P-590, Tank ~~#841~~ #843			
S-929 (PB)	Used by P-594, Tank #847			
S-934 (PB)	Used by P-599, Tank #881			
S-935 (PB)	Used by P-600, Tank #882			
S-936 (PB)	Used by P-601, Tank #883			
S-937 (PB)	Used by P-602, Tank #884			
S-938 (PB)	Used by P-603, Tank #885			
S-939 (PB)	Used by P-604, Tank #886			
S-958 (PB)	Used by P-623, Tank #7275			
S-959 (PB)	Used by P-624, Tank #7300 – Bio Plant			

S-962 (PB)	Used by P-627, Tank #7308 – Bio Plant			
S-963 (PB)	Used by P-628, Tank #7309 – South Yard			
S-966 (PB)	Used by P-632, Cooling Tower – Unit 868			
S-967 (PB)	Used by P-633, Cooling Tower – Unit 210			
S-968 (PB)	Used by P-634, Cooling Tower – Unit 864			
S-969 (PB)	Used by P-635, Cooling Tower – Complex Unit			
S-970 (PB)	Used by P-636, Barge Loading			
S-972 (PB)	Used by P-638, Rail Car Loading			
S-973 (PB)	Used by P-639, Bio Plant DNF Unit A&B			
S-974 (PB)	Used by P-640, Bio Plant Sewer System			
S-975 (PB)	Used by P-641, Bio Plant Sewer System			
S-976 (PB)	Used by P-642, North Flare in South Yard			
S-977 (PB)	Used by P-643, South Flare in South Yard Used by P-662, 869 Alkylation Unit			
S-978 (PB)	Used by P-638, LPG Rail Car and Tank Truck Loading/Unloading			
S-980 (PB)	Used by P-646, Two Emergency Sulfur Plant Flare (Unit 867)			
S-983 (PB)	Used by P-659 and P-660, North			

	and South Claus Sulfur Recovery Plant (Unit 867)			
	TGU -2			
S-985 (PB)	Used by P-661, FCCU (Unit 868)			
S-986 (PB)	Used by P-662, Alkylation Unit 869			
S-987 (PB)	Used by P-664, Inter-refinery Pipeline			
S-988 (PB)	Used by P-665, 40 CFR 60, Subpart GGG Leaks			
S-990 (PB)	Used by P-667, 40 CFR 61, Subpart FF Wastes			
S-994 (PB)	Used by P-671, 25 PA Code 129.58 Equipment Leaks			
S-996 (PB)	Used by P-670, 40 CFR 61, Subpart J Equipment Leaks			
S-997 (PB)	Used by P-674, Hydrogen Purification Unit 861			
S-8701 (PB)	Used by CU-137 (Unit 870 H1 heater)			
S-8702 (PB)	Used by CU-138 (Unit 870 H2 heater)			
S3412 (PB)	Used by EM-001			

Group IN - Insignificant Activities

P-044 (GP)	T-292, IFR (used for odor control	Not in VOL Service	Sour Water	1945
(PB)	Garage – Brake Cleaner Model 26.1	2 gal	Aqueous Brake Cleaner, Armakleen MPC MSDS 82783	
(GP)	Garage – Brake Cleaner Model 26.1	2 gal	Aqueous Brake Cleaner, Armakleen MPC MSDS 82783	

^ - RFG (Refinery Fuel Gas) or Refinery Gas means either refinery gas or natural gas or any mixture thereof.

Commented [A26]: NorthStar requests removal or revision of the process flow diagrams.

PROCESS FLOW DIAGRAM FOR THE SUNOCO PHILADELPHIA REFINERY GIRARD POINT

PROCESS FLOW DIAGRAM FOR THE SUNOCO PHILADELPHIA REFINERY POINT BREEZE

FACILITY INVENTORY INDEX

CD-002	Adsorber	Group 25A
CD-003	Adsorber	Group 25A
CD-004	CO Boiler	Group 18
CD-005	Electrostatic Precipitator	Group 18
CD-006	F-1 Heater	Group 10
CD-007	Adsorber	Group 25A
CD-010	Carbon Adsorber	Group 25A
CD-011	~~Flare~~ Thermal Oxidizer for P130	Group 17
CD-014	Flare (Unit 433)	Group 20
CD-103	Refinery Fuel Gas System – Boilers and Heaters	Group 17
CD-104	LPG Flare	Group 04
CD-105	Carbon Adsorption	Group 25A
CD-106	Carbon Adsorption	Group 25A
CD-107	Carbon Adsorption	Group 25A
CD-108	Amine Tail Gas Scrubber – Reduction Control System	Group 05
CD-109	Tail Gas Incinerator (TGU-1)	Group 05
CD-110	Electrostatic Precipitator	Group 18
CD-111 (P-642)	North Flare South Yard	Group 20
CD-112	South Flare South Yard	Group 20
CD-114	Tail Gas Incinerator (TGU-2)	Group 05
CU-004 (GP)	Unit 1232 B-104 Heater	Group 02
CU-005 (GP)	Unit 1332 H-1 Debutanizer Heater	Group 02
CU-006 (GP)	Unit 1332 H-602 Heater	Group 02
CU-007 (GP)	Unit 1332 H-601 Heater	Group 02
CU-008 (GP)	Unit 1332 H-600 Heater	Group 02
CU-009 (GP)	Unit 1332 H-2 Heater	Group 02
CU-010 (GP)	Unit 1332 H-401 Heater	Group 02
CU-011 (GP)	Unit 1332 H-400 Heater	Group 02
CU-012 (GP)	Unit 1332 H-3 Heater	Group 02
CU-013 (GP)	Unit 137 F-1 Heater	Group 02
CU-014 (GP)	Unit 137 F-2 Heater	Group 02
CU-015 (GP)	Unit 137 F-3 Heater	Group 02
CU-016 (GP)	Unit 231 B-101 Heater	Group 02
CU-017 (GP)	Unit 433 Isostripper H-1 Heater	Group 02
CU-018 (GP)	#37 Boiler	Group 01
CU-020 (GP)	#39 Boiler	Group 01
CU-021 (GP)	#40 Boiler	Group 01
CU-101 (PB)	Unit 210 H-101 Heater	Group 02

CU-102 (PB)	Unit 210 H-201 Heater	Group 02
CU-103 (PB)	Unite 210 13H-1 Heater	Group 02
CU-108 (PB)	2H-1 Heater (IDLED)	Group 02
CU-109 (PB)	Unit 860 2H-2 Heater	Group 02
CU-110 (PB)	Unit 860 2H-3 Heater	Group 02
CU-111 (PB)	Unit 860 2H-4 Heater	Group 02
CU-112 (PB)	Unit 860 2H-5 Heater	Group 02
CU-113 (PB)	Unit 860 2H-6 Heater	Group 02
CU-114 (PB)	Unit 860 2H-7 Heater	Group 02
CU-115 (PB)	Unit 860 2H-8 Heater	Group 02
CU-117 (PB)	Unit 861, Heater 3H-1 (Idle)	Group 02
CU-118 (PB)	Unit 864 PH-1 Heater	Group 02
CU-119 (PB)	PH-2 Heater (Idle)	Group 02
CU-120 (PB)	PH-3 Heater (Idle)	Group 02
CU-121 (PB)	PH-4 Heater (Idle)	Group 02
CU-122 (PB)	PH-5 Heater (Idle)	Group 02
CU-123 (PB)	Unit 864 PH-7 Heater	Group 02
CU-124 (PB)	Unit 864 PH-11 Heater	Group 02
CU-125 (PB)	Unit 864 PH-12 Heater	Group 02
CU-126 (PB)	Unit 865 11H-1 Heater	Group 02
CU-127 (PB)	Unit 865 11H-2 Heater	Group 02
CU-128 (PB)	Unit 866 12H-1 Heater	Group 02
CU-129 (PB)	Unit 868 8H-101 Heater	Group 02
CU-137 (PB)	Unit 870 H1 Heater	Group 02
CU-138 (PB)	Unit 870 H2 Heater	Group 02
CU-139 (PB)	Unit 859 1-H1 Heater	Group 02
P-001 (GP)	T-1116, EFR	Group 14B
P-002 (GP)	T-1216, IFR	Group 15A
P-003 (GP)	T-1217, IFR	Group 15A
P-004 (GP)	T-202, IFR	Group 15A
P-005 (GP)	T-217, IFR	Group 13A
P-006 (GP)	T-228, EFR	Group 14C
P-007 (GP)	T-238, Fixed Roof	Group 15A
P-008 (GP)	T-242, EFR	Group 14B
P-009 (GP)	T-250, IFR	Group 13C
P-010 (GP)	T-251, IFR	Group 13C
P-011 (GP)	T-271, Fixed Roof	Group 15B
P-012 (GP)	T-272, IFR	Group ~~13B~~ 13C
P-013 (GP)	T-279, Fixed Roof	Group 15A
P-015 (GP)	T-285, IFR	Group 13B
P-016 (GP)	T-286, IFR	Group 13B
P-017 (GP)	T-790, IFR	Group 13A
P-018 (GP)	T-791, IFR	Group 13A

P-019 (GP)	T-792, Fixed Roof	Group 15A
P-020 (GP)	T-793, Fixed Roof	Group 15A
P-021 (GP)	T-795, IFR	Group 13A
P-022 (GP)	T-798, IFR	Group 13A
P-023 (GP)	T-799, IFR	Group 13A
P-024 (GP)	T-1117, EFR	Group 13A
P-025 (GP)	T-1205, IFR	Group 13A
P-026 (GP)	T-1208, IFR	Group 13A
P-027 (GP)	T-1211, Fixed Roof	Group 15A
P-028 (GP)	T-1213, Fixed Roof	Group 15A
P-029 (GP)	T-1214, IFR	Group 13A
P-030 (GP)	T-1215, Fixed Roof	Group 15A
P-031 (GP)	T-1219, Fixed Roof	Group 15A
P-032 (GP)	T-273, Fixed Roof	Group 15A
P-033 (GP)	T-275, Fixed Roof	Group 15A
P-034 (GP)	T-276, IFR	Group 13B
P-035 (GP)	T-280, Fixed Roof	Group 15A
P-036 (GP)	T-282, Fixed Roof	Group 15A
P-037 (GP)	T-284, Fixed Roof	Group 15A
P-039 (GP)	T-494, Fixed Roof	Group 15A
P-040 (GP)	T-495, Fixed Roof	Group 15A
P-045 (GP)	T-229, IFR	Group 13C
P-108 (GP)	Degreasing Vats	Group 22
P-114 (GP)	Wastewater – Subject to or exempt from 40 CFR 61 Subpart FF and 40 CFR 63, Subpart CC	Group 25A
P-115	Refining Wastewater	Group 25B
P-117 (GP) - CD012	1231 Flare – Unit 1232	Group 03
P-118 (GP) – CD013	1232 Flare – Unit 1232	Group 03
P-119 (GP) - CD014	433 Flare	Group 03
P-120 (GP)	FCCU, Unit 1232 Regenerator	Group 18
P-121 (GP)	Butane Isomerization - Unit 331	Group 23
P-123	SOCMI Wastewater	Group 25B
P-125 (GP)	Cooling Tower 1232 - Unit 1232	Group 09
P-126 (GP)	Cooling Tower 433 - Unit 433	Group 09
P-127 (GP)	Cooling Tower 490 – Units 1332, 231, 1732, and 1733	Group 09
P-128 (GP)	Cooling Tower 137 – Unit 137	Group 09
P-129 (GP)	~~1733~~ Tank Truck Loading – ~~Cumene~~ Petroleum Liquids < 1.5	Group 04

	psia	
P-130 (GP)	Barge Loading – Girard Point Wharf	Group 17
P-131 (GP)	4A API Separator – WWT	Group 25A
P-132 (GP)	2B API Separator – WWT	Group 25A
P-134 (GP)	T-270, IFR	Group 13C
P-135 (GP)	T-767, IFR	Group 13C
P-136 (GP)	T-768, IFR	Group 13C
P-137 (GP)	T-1101, IFR	Group 13C
P-141 (GP)	T-1146, T-1147	Group 25A
P-142 (GP)	T-1142, T-1143	Group 25A
P-144 (GP)	T-219	Group 15A
P-145 (GP)	T-223	Group 15A
P-146 (GP)	T-225	Group 15A
P-147 (GP)	T-227	Group 15A
P-148 (GP)	T-267	Group 15A
P-149 (GP)	T-268	Group 15A
P-150 (GP)	T-281	Group 15A
P-151 (GP)	T-676	Group 15A
P-152 (GP)	T-677	Group 15A
P-153 (GP)	T-794	Group 15A
P-154 (GP)	T-796	Group 15A
P-155 (GP)	T-844	Group 14C
P-156 (GP)	T-1108	Group 15A
P-157 (GP)	T-1038	Group 15A
P-158 (GP)	T-1039	Group 15B
P-159 (GP)	T-1086	Group 13C
P-160 (GP)	T-1087	Group 13C
P-161 (GP)	T-1128	Group 15A
P-162 (GP)	T-1136	Group 14C
P-163 (GP)	T-1209	Group 13A
P-164 (GP)	T-1210	Group 15A
P-165 (GP)	T-1212	Group 15A
P-166 (GP)	T-1218	Group 15A
P-167 (GP)	T-1220	Group 15A
P-168 (GP)	T-271	Group 15A
P-170 (GP)	T-277	Group 15A
P-171 (GP)	T-1004	Group 15B
P-172 (GP)	T-1005	Group 15B
P-173 (GP)	T-1006	Group 15B
P-174 (GP)	T-1007	Group 13C
P-175 (GP)	T-3000	Group 15A
P-176 (GP)	T-3001	Group 15A
P-177 (GP)	T-3002	Group 15A
P-178 (GP)	T-3004	Group 15A

P-179 (GP)	T-3005	Group 15A
P-180 (GP)	Cumene Production Unit 1733	Groups 25B, 26
P-181 (GP)	Benzene Production Unit 1732	Groups 25B, 26
P-181	Six vents (go to CD-012 or CD-013)	Group 10
P-182 (GP)	Alkylation Unit 433 (Refinery Process Unit)	Group 20
P-183 (GP)	~~Unit 1732 benzene~~ petroleum liquids < 11.1 psia railcar unloading station	Group 04
P-184 (GP)	Four vents (one goes to CD-006, and three go to a process heater or to CD-012 or CD-013	Group 10
P-501 (PB)	Tank # 26, IFR	Group 13C
P-502 (PB)	Tank # 27, EFR	Group 14B
P-503 (PB)	Tank # 28, EFR	Group 14B
P-504 (PB)	Tank # 29, EFR	Group 14B
P-505 (PB)	Tank # 30, EFR	Group 14B
P-506 (PB)	Tank # 32, IFR	Group 13B
P-507 (PB)	Tank # 33, EFR	Group 14B
P-508 (PB)	Tank # 34, EFR	Group 14B
P-509 (PB)	Tank # 35, EFR	Group 14B
P-510 (PB)	Tank # 36, EFR	Group 14B
P-511 (PB)	Tank # 37, IFR	Group 13C
P-512 (PB)	Tank # 38, EFR	Group 14B
P-513 (PB)	Tank # 39, EFR	Group 14B
P-514 (PB)	Tank # 40, EFR	Group 14B
P-515 (PB)	Tank # 42, EFR	Group 15A
P-516 (PB)	Tank # 43, Cone Roof	Group 15A
P-517 (PB)	Tank # 44, Cone Roof	Group 15A
P-518 (PB)	Tank # 83, Cone Roof	Group 15A
P-519 (PB)	Tank # 84, Cone Roof	Group 15A
P-520 (PB)	Tank # 85, Cone Roof	Group 15A
P-521 (PB)	Tank #117, EFR (also subject to NSPS Subpart Ka – less stringent)	Group 14B
P-522 (PB)	Tank # 119, IFR	Group 13B
P-523 (PB)	Tank # 121, IFR	Group 13A
P-524 (PB)	Tank # 125, EFR	Group 14B
P-525 (PB)	Tank # 126, EFR	Group 14B
P-526 (PB)	Tank # 128, EFR	Group 14B
P-527 (PB)	Tank # 129, EFR	Group 14B
P-528A (PB)	Tank # 140, Cone Roof	Group 15A
P-529 (PB)	Tank # 144, Cone Roof	Group 15A
P-530 (PB)	Tank # 145, Cone Roof	Group 15A

P-531 (PB)	Tank # 146, EFR	Group 14B
P-532 (PB)	Tank # 149, Cone Roof	Group 15A
P-533 (PB)	Tank # 150, EFR	Group 15A
P-534 (PB)	Tank # 151, EFR	Group 15A
P-535 (PB)	Tank # 152, Cone Roof	Group 15A
P-536 (PB)	Tank # 161, Cone Roof	Group 15A
P-537 (PB)	Tank # 162, EFR	Group 14B
P-538 (PB)	Tank # 172, IFR	Group 13B
P-540 (PB)	Tank # 176, EFR	Group 14B
P-541 (PB)	Tank # 178, EFR	Group 14B
P-542 (PB)	Tank #179, EFR	Group 14B
P-543 (PB)	Tank #181, EFR	Group 14B
P-544 (PB)	Tank #182, IFR	Group 13B
P-545 (PB)	Tank #190, IFR	Group 13B
P-546 (PB)	Tank #191, EFR	Group 14B
P-547 (PB)	Tank #204, IFR	Group 13B
P-550 (PB)	Tank #252, Cone Roof	Group 15A
P-551 (PB)	Tank #253, Cone Roof	Group 15A
P-555 (PB)	Tank #298, Cone Roof	Group 15A
P-563 (PB)	Tank #663, Cone Roof	Group 15A
P-564 (PB)	Tank #665, Cone Roof	Group 15A
P-564A (PB)	Tank #664, Cone Roof	Group 15A
P-565 (PB)	Tank #666, Cone Roof	Group 15A
P-566 (PB)	Tank #667, Cone Roof	Group 15A
P-567 (PB)	Tank #668, Cone Roof	Group 15A
P-568 (PB)	Tank #669, Cone Roof	Group 15A
P-569 (PB)	Tank #670, Cone Roof	Group 15A
P-571 (PB)	Tank #672, Cone Roof	Group 15A
P-574 (PB)	Tank #821, Cone Roof	Group 15A
P-575 (PB)	Tank #822, IFR	Group 15A
P-576 (PB)	Tank #823, IFR	Group 15A
P-577 (PB)	Tank #824, Cone Roof	Group 15A
P-578 (PB)	Tank #825, Cone Roof	Group 15A
P-579 (PB)	Tank #826, EFR	Group 14B
P-580 (PB)	Tank #831, EFR	Group 15A
P-581 (PB)	Tank #832, Cone Roof	Group 15A
P-582 (PB)	Tank #833, IFR	Group 15A
P-583 (PB)	Tank #834, Cone Roof	Group 15A
P-584 (PB)	Tank #835, IFR	Group 15A
P-585 (PB)	Tank #836, IFR	Group 15A
P-587 (PB)	Tank #840, EFR	Group 14B
P-588 (PB)	Tank #841, EFR	Group 14B
P-590 (PB)	Tank #843, EFR	Group 14B
P-591 (PB)	Tank #844, EFR	Group 14C
P-593 (PB)	Tank #846, EFR	Group 14B

P-594 (PB)	Tank #847, ~~EFR~~ IFR	Group ~~14B~~ 13C
P-595 (PB)	Tank #848, EFR	Group 14A
P-596 (PB)	Tank #849, EFR	Group 14B
P-598 (PB)	Tank #880, EFR	Group 14A
P-600 (PB)	Tank #882, EFR	Group 14B
P-601 (PB)	Tank #883, EFR	Group 14B
P-602 (PB)	Tank #884, EFR	Group 14B
P-603 (PB)	Tank #885, ~~EFR~~ IFR	Group ~~14B~~ 13C
P-604 (PB)	Tank #886, ~~EFR~~ IFR	Group ~~14B~~ 13C
P-623 (PB)	Tank #7275, Cone Roof	Group 15A
P-624 (PB)	Tank # 7300, EFR	Group 14C
P-627 (PB)	Tank #7308, EFR	Group 14C
P-632 (PB)	Cooling Tower, Unit 868	Group 09
P-633 (PB)	Cooling Tower, Unit 210	Group 09
P-634 (PB)	Cooling Tower, Unit 864	Group 09
P-635 (PB)	Cooling Tower, Complex	Group 09
P-636 (PB)	Marine Barge Loading	Group 17
P-638 (PB)	Propane Loading Station	Group 04
P-639 (PB)	API Separators A&B – Bio Plant	Group 25A
P-640 (PB)	Dissolved Nitrogen Floatation Unit A&B – Bio Plant	Group 25A
P-641 (PB)	Bio Plant Sewer System – Refinery	Group 25A
P-642 (PB) CD111	Flare, North Flare in South Yard	Group 03
P-643 (PB) CD112	Flare, South Flare in South Yard (IDLED)	Group 03
P-646 (PB)	Flares, Emergency Sulfur Plant	Group 03
P-659 (PB)	North Claus Sulfur Recovery Plant – Unit 867	Group 05
P-660 (PB)	South Claus Sulfur Recovery Plant – Unit 867	Group 05
P-661 (PB)	Fluid Catalytic Cracking Regenerator – Unit 868	Group 18
P-662 (PB)	Alkylation Unit 869	Group 20
P-664 (PB)	Inter-Refinery Pipeline	Group 19
P-667 (PB)	Benzene Wastewater Sources 40 CFR 61, Subpart FF & 40 CFR 63, Subpart CC	Group 25A
P-674 (PB)	H2 Purification	Group 21
P-1002 (PB)	Group 1 Vents 40 CFR 63, Subpart CC	Group 10

SECTION B. GENERAL REQUIREMENTS

1. Definitions

[25 Pa Code §121.1]

Words and terms that are not otherwise defined in this permit shall have the meanings set forth in Section 3 of the Pennsylvania Air Pollution Control Act (35 P.S. §4003) and 25 Pa Code §121.1.

2. Property Rights

[25 Pa Code §127.512(c)(4)]

This permit does not convey property rights of any sort, or any exclusive privileges.

3. Permit Expiration

[25 Pa Code §127.446(a) and (c)]

This operating permit is issued for a fixed term of 5 years and shall expire on the date specified on the front page of this permit. The terms and conditions of the expired permit shall automatically continue pending issuance of a new Title V permit, provided the Permittee has submitted a timely and complete application and paid applicable fees required under 25 Pa Code §127, Subchapter I and AMS is unable, through no fault of the Permittee, to issue or deny a new permit before the expiration of the previous permit. An application is complete if it contains sufficient information to begin processing the application, has the applicable sections completed and has been signed by a responsible official.

4. Permit Renewal

[25 Pa Code §§127.412, 127.413, 127.414, 127.446(e) & 127.503]

(a) The Permittee shall submit a complete application for renewal of the Title V permit at least 6 months and not more than 18 months before the expiration date of this permit. The Permittee shall submit to AMS a timely and complete application.

(b) The application for permit renewal shall include the current permit number, the appropriate renewal fee, a description of any permit revisions and off-permit changes that occurred during the permit term, and any applicable requirements that were promulgated and not incorporated into the permit during the permit term. The application for renewal of the Title V permit shall include submission of supplemental compliance review forms in accordance with 25 Pa Code §127.412(b) or (j).

(c) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information during the permit renewal process. The Permittee shall also provide additional information as necessary to address any requirements that become applicable to the source

after the date a complete renewal application was submitted but prior to release of a draft permit.

5. Transfer of Ownership or Operation

[25 Pa Code §§127.450(a)(4), 127.464(a) & AMR I Sec. II.A.5.c.]

(a) In accordance with 25 Pa Code §127.464(a) this permit may not be transferred to another person, except in cases of transfer-of-ownership which are documented and approved to the satisfaction of AMS.

(b) In accordance with 25 Pa Code §127.450(a)(4), a change in ownership or operational control of the source shall be treated as an administrative amendment if:

(1) AMS determines that no other change in the permit is necessary;

(2) A written agreement has been submitted to AMS identifying the specific date of the transfer of permit responsibility, coverage and liability between the current and the new Permittee; and

(3) A compliance review form has been submitted to AMS and the permit transfer has been approved by AMS.

6. Inspection and Entry

[25 Pa Code §127.513, 35 P.S. §4008, §114 of the Clean Air Act & Phila. Code §3-304]

(a) Upon presentation of credentials and other documents as may be required by law for inspection and entry purposes, the Permittee shall allow AMS or authorized representatives of AMS to perform the following:

(1) Enter at reasonable times upon the Permittee's premises where a Title V source is located or emissions related activity is conducted, or where records are kept under the conditions of this permit;

(2) Have access to and copy or remove, at reasonable times, any records that are kept under the conditions of this permit;

(3) Inspect at reasonable times, facilities, equipment including monitoring and air pollution control equipment, practices, or operations regulated or required under this permit;

(4) Sample or monitor, at reasonable times, any substances or parameters for the purpose of assuring compliance with the permit or applicable requirements as authorized by the Clean Air Act, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code, or the regulations promulgated thereunder.

(b) Pursuant to 35 P.S. §4008, no person shall hinder, obstruct, prevent, or interfere with AMS or its personnel in the performance of any duty authorized under the Pennsylvania Air Pollution Control Act, Philadelphia Air Management Code, or regulations adopted thereunder.

(c) Nothing in this permit condition shall limit the ability of the EPA to inspect or enter the premises of the Permittee in accordance with Section 114 or other applicable provisions of the Clean Air Act.

7. Compliance Requirements

[25 Pa Code §§127.25, 127.444, 127.512(c)(1) & AMR I Sec. II.A.5.b.]

(a) The Permittee shall comply with the conditions of this permit. Noncompliance with this permit constitutes a violation of the Clean Air Act, the Pennsylvania Air Pollution Control Act, and/or the Philadelphia Air Management Code and is grounds for one or more of the following:

(1) Enforcement action

(2) Permit termination, revocation and reissuance or modification

(3) Denial of permit renewal application.

(b) A person may not cause or permit the operation of a source subject to 25 Pa Code Article III or the Philadelphia Air Management Code, unless the source(s) and air cleaning devices identified in the application for the plan approval/ installation permit and operating permit and the plan approval/ installation permit issued to the source are operated and maintained in accordance with specifications in the application and conditions in the plan approval/ installation permit and operating permit issued by AMS. A person may not cause or permit the operation of an air contamination source subject to 25 Pa Code Chapter 127 or the Philadelphia Air Management Code in a manner inconsistent with good operating practices.

(c) For purposes of sub-condition (b) of this permit condition, the specifications in applications for plan approvals/ installation permits and operating permits are the physical configurations and engineering design details which AMS determines are essential for the Permittee's compliance with the applicable requirements in this Title V permit.

(d) The Permittee shall not change any installation such that the registered information concerning it is no longer accurate without first notifying AMS.

8. Need to Halt or Reduce Activity Not A Defense

[25 Pa Code §127.512(c)(2)]

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9. Duty to Provide Information

[25 Pa Code §127.411(d), §127.512(c)(5) & AMR I Sec. II.B. and C.]

(a) The Permittee shall furnish to AMS, within a reasonable time, information that AMS may request in writing to determine whether cause exists for modifying,

revoking and reissuing, or terminating the permit, or to determine compliance with the permit.

(b) Upon request, the Permittee shall also furnish AMS copies of records that the Permittee is required to keep by this permit, or for information claimed to be confidential, the Permittee may furnish such records along with any claim of confidentiality.

10. Reopening and Revising The Title V Permit for Cause

[25 Pa Code §§127.463, 127.512(c)(3), & 127.542]

(a) This Title V permit may be modified, revoked, reopened and reissued or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation, reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay a permit condition.

(b) This permit may be reopened and reissued prior to expiration of the permit under one or more of the following circumstances:

(1) Additional applicable requirements under the Clean Air Act, Pennsylvania Air Pollution Control Act, or Philadelphia Air Management Code become applicable to a Title V facility with a remaining permit term of 3 or more years prior to the expiration date of this permit. AMS will revise the permit as expeditiously as practicable but not later than 18 months after promulgation of the applicable standards or regulations. No such revision is required if the effective date of the requirement is later than the expiration date of this permit, unless the original permit or its terms and conditions has been extended.

(2) Additional requirements, including excess emissions requirements, become applicable to an affected source under the acid rain program. Excess emissions offset plans for an affected source shall be incorporated into the permit upon approval by the Administrator of EPA.

(3) AMS or the EPA determines that this permit contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions of this permit.

(4) AMS or the Administrator of EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(c) Proceedings to revise this permit shall follow the same procedures which apply to initial permit issuance and shall affect only those parts of this permit for which cause to revise exists. The revision shall be made as expeditiously as practicable.

(d) Regardless of whether a revision is made in accordance with (b)(1) above, the Permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations.

11. Reopening a Title V Permit for Cause by EPA

[25 Pa Code §127.543]

As required by the Clean Air Act and regulations adopted thereunder, this permit may be modified, reopened and reissued, revoked or terminated for cause by EPA in accordance with procedures specified in 25 Pa Code §127.543.

12. Significant Operating Permit Modifications

[25 Pa Code §127.541]

When permit modifications during the term of this permit do not qualify as minor permit modifications or administrative amendments, the Permittee shall submit an application for significant Title V permit modifications in accordance with 25 Pa Code §127.541.

13. Minor Operating Permit Modifications

[25 Pa Code §§121.1, 127.462 & AMR I Sec. II.A.]

(a) The Permittee may make minor permit modifications (as defined in 25 Pa Code §121.1) in accordance with 25 Pa Code §127.462.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) shall extend to an operational flexibility change authorized by 25 Pa Code §127.462.

14. Administrative Operating Permit Modifications

[25 Pa Code §127.450]

(a) The Permittee may request administrative operating permit amendments, as defined in §127.450(a), according to the procedures specified in §127.450. Administrative amendments are not authorized for any amendment precluded by the Clean Air Act or the regulations thereunder from being processed as an administrative amendment.

(b) Unless precluded by the Clean Air Act or the regulations thereunder, AMS will, upon taking final action granting a request for an administrative permit amendment in accordance with §127.450(c), allow coverage by the permit shield in 25 Pa Code §127.516 (relating to permit shield) for administrative permit amendments which meet the relevant requirements of 25 Pa Code Article III.

15. Severability Clause

[25 Pa Code §127.512(b) & AMR I Sec. VIII]

The provisions of this permit are severable, and if any provision of this permit is determined by the Environmental Hearing Board (Department of Licenses and Inspections Review Board until the Environmental Hearing Board is approved) or a court of competent jurisdiction to be invalid or unenforceable, such a determination will not affect the remaining provisions of this permit.

16. Fee Payment

[25 Pa Code §§127.704, 127.705 & 127.707]

(a) The Permittee shall pay fees to AMS in accordance with the applicable fee schedules in 25 Pa Code Chapter 127 Subchapter I (relating to plan approval and operating permit fees).

(b) Emission fees. The Permittee shall, on or before September 1 of each year, pay applicable annual Title V emission fees for emissions occurring in the previous calendar year as specified in 25 Pa Code §127.705. The Permittee is not required to pay an emission fee for emissions of more than 4,000 tons of each regulated pollutant emitted from the facility.

(c) As used in this permit condition, the term “regulated pollutant” is defined as a Volatile Organic Compound, each pollutant regulated under Sections 111 and 112 of the Clean Air Act and each pollutant for which a National Ambient Air Quality Standard has been promulgated, except that carbon monoxide is excluded. Payment shall be made to AMS.

(d) Late Payment. Late payment of emission fees will subject the Permittee to the penalties prescribed in 25 Pa Code §127.707 and may result in the suspension or termination of the Title V permit. The Permittee shall pay a penalty of fifty per centum (50%) of the fee amount, plus interest on the fee amount computed in accordance with 26 U.S.C.A. §6621(a)(2) from the date the emission fee should have been paid in accordance with the time frame specified in 25 Pa Code §127.705(c).

(e) The Permittee shall pay an annual operating permit administration fee according to the fee schedule established in 25 Pa Code §127.704(c) if the facility, identified in subparagraph (iv) of the definition of the term “Title V facility” in 25 Pa Code §121.1, is subject to Title V after the EPA Administrator completes rulemaking requiring regulation of those sources under Title V of the Clean Air Act.

(f) This permit condition does not apply to a Title V facility which qualifies for exemption from emission fees under 35 P.S. §4006.3(f).

17. Authorization for De Minimis Emissions Increases

[25 Pa Code §§127.14(b), 127.449 & Phila. Code §3-306]

(a) This permit authorizes de minimis emission increases from a new or existing source in accordance with 25 Pa Code §§127.14 and 127.449 without the need for a plan approval, Phila. Code §3-306 without the need for an installation permit, or prior issuance of a permit modification. The Permittee shall provide AMS with 7 days prior written notice before commencing any de minimis emission increase that would result from either: (1) a physical change of minor significance under 127.14.(c)(1) and Phila. Code §3-306; or (2) the construction, installation, modification or reactivation of an air contamination source. The written notice shall:

(1) Identify and describe the pollutants that will be emitted as a result of the de minimis increase.

(2) Provide emission rates in tons/year and in terms necessary to establish compliance consistent with any applicable requirement.

AMS may disapprove or condition the de minimis emission increase at any time.

(b) Except as provided below in (c) and (d) of this permit condition, the Permittee is authorized during the term of this permit to make the following de minimis emission increases (expressed in tons per year), up to the following amounts without the need for a plan approval or installation permit or prior issuance of a permit modification:

(1) Four tons of carbon monoxide from a single source during the term of the permit and 20 tons of carbon monoxide at the facility during the term of the permit.

(2) One ton of NO_x from a single source during the term of the permit and five tons of NO_x at the facility during the term of the permit.

(3) One and six-tenths tons of oxides of sulfur from a single source during the term of the permit and eight tons of oxides of sulfur at the facility during the term of the permit.

(4) Six-tenths of a ton of PM-10 from a single source during the term of the permit and three tons of PM-10 at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(5) One ton of VOCs from a single source during the term of the permit and five tons of VOCs at the facility during the term of the permit. This shall include emissions of a pollutant regulated under Section 112 of the Clean Air Act unless precluded by the Clean Air Act, or 25 Pa Code Article III.

(c) The Permittee is authorized to install the following minor sources without the need for a plan approval or installation permit:

(1) Air conditioning or ventilation systems not designed to remove pollutants generated or released from other sources.

(2) Combustion units rated at 250,000 or less Btu per hour of net load rating.

(3) Laboratory equipment used exclusively for chemical or physical analysis.

(d) This permit does not authorize de minimis emission increases if the emissions increase would cause one or more of the following:

(1) Increase the emissions of the pollutant regulated under Section 112 of the Clean Air Act except as authorized in subparagraph (b)(4) & (5) of this permit condition.

(2) Subject the facility to the prevention of significant deterioration requirements in 25 Pa Code Chapter 127, Subchapter D and/or the new source review requirements in subchapter E.

(3) Violate any applicable requirement of the Air Management Code, the Air Pollution Control Act, the Clean Air Act, or the regulations thereunder.

(4) Changes which are modifications under the provision of Title 1 of the Clean Air Act and emission increases which would exceed the allowable emissions level (expressed as a rate of emissions or in terms of total emissions) under the Title V permit.

(e) Unless precluded by the Clean Air Act or the regulations thereunder, the permit shield described in 25 Pa Code §127.516 (relating to permit shield) applies to de minimis emission increases and the installation of minor sources made pursuant to this permit condition.

(f) Emissions authorized under this permit condition shall be included in the monitoring, recordkeeping and reporting requirements of this permit.

(g) Except for de minimis emission increases allowed under this permit, or sources and physical changes meeting the requirements of 25 Pa Code §127.14, the Permittee is prohibited from making physical changes or engaging in activities that are not specifically authorized under this permit without first applying for a plan approval. A City of Philadelphia Installation Permit is required if the activities are subject to the Philadelphia Air Management Code. In accordance with 25 Pa Code §127.14(b), a plan approval is not required for the construction, modification, reactivation, or installation of the sources creating the de minimis emissions increase.

(h) The Permittee may not meet de minimis emission threshold levels by offsetting emission increases or decreases at the same source.

18. Reactivation of Sources

[25 Pa Code §§127.11, 127.11a, 127.215 & AMR I Sec. II.A.5.]

(a) The Permittee shall notify AMS of any source that is out of operation for more than a year in its semiannual monitoring report.

(b) The Permittee may reactivate a source at the facility that has been out of operation or production for at least one year, but less than or equal to 5 years, if the source is reactivated in accordance with the requirements of 25 Pa Code §§127.11a and 127.215. The reactivated source will not be considered a new source.

(c) A source which has been out of operation or production for more than five years but less than 10 years may be reactivated and will not be considered a new source if the Permittee satisfies the conditions specified in 25 Pa Code §127.11a(b).

19. Circumvention

[25 Pa Code §§121.9, 127.216 & AMR I Sec. VII]

(a) The Permittee may not circumvent the requirements of 25 Pa Code Chapter 127, by causing or allowing a pattern of ownership or development, including the phasing, staging, delaying or engaging in incremental construction, over a geographic area of a facility which, except for the pattern of ownership or

development, would otherwise require a permit or submission of a plan approval application.

(b) No person may permit the use of a device, stack height which exceeds good engineering practice stack height, dispersion technique or other technique which, without resulting in reduction of the total amount of air contaminants emitted, conceals or dilutes an emission of air contaminants which would otherwise be in violation of this permit, the Pennsylvania Air Pollution Control Act, the Philadelphia Air Management Code or the regulations promulgated thereunder, except that with prior approval of AMS, the device or technique may be used for control of malodors.

20. Operational Flexibility

[25 Pa Code §127.3 & AMR I Sec. XII]

(a) The Permittee is authorized to make changes within the Title V facility in accordance with the following provisions in 25 Pa Code Chapter 127 and in Phila. Code §3-306 which implement the operational flexibility requirements of Section 502(b)(10) of the Clean Air Act and Section 6.1(i) of the Pennsylvania Air Pollution Control Act:

(1) Section 127.14 and Phila. Code §3-306, whichever is more stringent (relating to exemptions)

(2) Section 127.447 (relating to alternative operating scenarios)

(3) Section 127.448 (relating to emissions trading at facilities with Federally enforceable emissions caps)

(4) Section 127.449 (relating to de minimis emission increases)

(5) Section 127.450 (relating to administrative operating permit amendments)

(6) Section 127.462 (relating to minor operating permit amendments)

(7) Subchapter H (relating to general plan approvals and operating permits)

(b) Unless precluded by the Clean Air Act or the regulations adopted thereunder, the permit shield authorized under 25 Pa Code §127.516 shall extend to operational flexibility changes made at this Title V facility pursuant to this permit condition and other applicable operational flexibility terms and conditions of this permit.

21. Approved Economic Incentives and Emission Trading Programs

[25 Pa Code §127.512(e)]

No permit revision shall be required under approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for in this Title V permit.

22. Permit Shield

[25 Pa Code §§127.516, 127.450(d), 127.449(f) & 127.462(g)]

(a) The Permittee's compliance with the conditions of this permit shall be deemed in compliance with applicable requirements as of the date of permit issuance if either of the following applies:

(1) The applicable requirements are included and are specifically identified in this permit.

(2) AMS specifically identifies in the permit other requirements that are not applicable to the permitted facility.

(b) Nothing in 25 Pa Code §127.516 or the Title V permit shall alter or affect the following:

(1) The provision of Section 303 of the Clean Air Act, including the authority of the Administrator of the EPA provided thereunder.

(2) The liability of the Permittee for a violation of an applicable requirement prior to the time of permit issuance.

(3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act.

(4) The ability of the EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(c) Unless precluded by the Clean Air Act or regulations thereunder, final action by AMS on administrative amendments, minor and significant permit modifications, and operational flexibility changes shall be covered by the permit shield provided such amendments, modifications and changes meet the relevant requirements of 25 Pa Code Article III.

(d) The permit shield authorized under §127.516 is in effect for the permit terms and conditions in this Title V permit, including administrative operating permit amendments and minor operating permit modifications.

SECTION C. FACILITY WIDE REQUIREMENTS

1. Fugitive Emissions

[25 Pa Code §§123.1, 123.2, & AMR II Sec. VIII]

(a) No person may permit the emission into the outdoor atmosphere of a fugitive air contaminant from a source other than the following:

(1) Construction, or demolition of buildings or structures.

(2) Grading, paving and maintenance of roads and streets.

(3) Use of roads and streets. Emissions from material in or on trucks, railroad cars, and other vehicular equipment are not considered as emissions from use of roads and streets.

(4) Clearing of land.

(5) Stockpiling of materials.

(6) Sources and classes of sources other than those identified in paragraphs 1(a)(1)-1(a)(5) for which the Permittee has obtained a determination from AMS that fugitive emissions from the source, after appropriate control, meet the following requirements:

(i) The emissions are of minor significance with respect to causing air pollution.

(ii) The emissions are not preventing or interfering with the attainment or maintenance of an ambient air quality standard.

(b) The Permittee may not permit fugitive particulate matter from a source specified in paragraphs 1(a)(1)-1(a)(6) if the emissions are visible at the point the emissions pass outside the facility's property.

(c) The Permittee shall take all reasonable actions to prevent particulate matter emitted from a source identified in paragraphs 1(a)(1)-1(a)(6) from becoming airborne. These actions include, but are not limited to, the following:

(1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads, or the clearing of land.

(2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts.

(3) Paving and maintenance of roadways.

(4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means.

2. Odor Emissions Limitations

[25 Pa Code §123.31(b) & AMR V Sec. XX]

A person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the person on whose land the source is being operated.

3. Visible Emissions Limitations

[25 Pa Code §§123.41, 123.42, 123.43, and AMR II Sec. IV]

(a) A person at the Title V facility may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:

(1) Equal to or greater than 20% for a period or periods aggregating more than 3 minutes in any one hour.

(2) Equal to or greater than 60% at any time.

(b) These emission limitations do not apply when: [25 Pa Code §123.42]

(1) The presence of uncombined water is the only reason for failure of the emission to meet the limitations.

(2) When the emission results from sources specified in 25 Pa Code §123.1(a)(1)-(9).

(3) When the emission results from the operation of equipment used solely to train and test persons in observing the opacity of visible emissions.

(c) The visible emissions may be measured using either of the following: [25 Pa Code §123.43]

(1) A device approved by AMS and maintained to provide accurate opacity measurements.

(2) Observers, trained and qualified to measure plume opacity with the naked eye or with the aid of devices approved by AMS.

(d) The emission limitations of 20% and 60% as stated above do not apply to facilities which have received a stricter emission limitation in a plan approval or operating permit as part of AMS's Best Available Technology determination, if that limitation is stated elsewhere in this permit.

4. Noise and Vibrations

[Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration)]**

(a) The Permittee shall not create or cause, or permit the creation of sound, sound originating from a property used for a non-residential purpose shall not exceed the following:

(1) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(2) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(b) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary.

5. Fuel Usage

[AMR III Sec. I & III. Compliance with the requirement specified in this streamlined permit condition assures compliance with the provisions specified in 25 Pa Code §123.22(e)]

(a) Unless specified in Section D, the Permittee shall use only natural gas, propane, or commercial fuel oil. The maximum sulfur content would be 0.2%, 0.3% and 0.5 % for number 2, 4, and 5 or 6 fuel oil, respectively.

(1) Beginning July 1, 2016, the maximum sulfur content of fuel oil, expressed as parts per million (ppm) by weight or percentage by weight, shall be: [25 Pa Code §123.22(e)(2)(i)]

Grades Commercial Fuel Oil (Consistent with ASTM 396)

No. 2 and lighter oil	500 ppm	(0.05%)
No. 4 oil	2,500 ppm	(0.25%)
No. 5, No. 6 and heavier oil	5,000 ppm	(0.5%)

(2) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to July 1, 2016, which met the applicable maximum allowable sulfur content for commercial fuel oil through June 30, 2016, in subparagraph (i) at the time it was stored, may be used by the ultimate consumer in this Commonwealth on and after July 1, 2016. [25 Pa Code §123.22(e)(2)(ii)]

(b) When it appears that the delivery of low sulfur fuel is, or is about to be, interrupted because of unavailability, accident, or other emergency conditions, AMS may authorize the use of an alternative fuel supply, involving the least adverse impact on air quality, for a period not to exceed 30 days. Longer periods of time of 120 days each may be authorized by AMS only after review and recommendation made by the Air Pollution Control Board for each extended period of time. Factors to be considered shall include the availability of alternate complying fuels, the availability of sulfur dioxide stack gas removal equipment, and the anticipated effect on air quality in the neighborhood, area and region. The Air Pollution Control Board, after a hearing, shall have the right to adjust, revoke, rescind, and make changes or modifications of any authorizations if there shall occur such change in the condition of availability of low sulfur fuel or the factors set forth in this subsection. [AMR III, Sec. III.C.]

6. Open Burning

[AMR II Sec. II]

The Permittee shall not permit the ignition or continuation of open burning of any materials.

7. Air Pollution Episode

[25 Pa Code Chapter 137 & AMR IV Sec. V, VI & VII]

The Permittee shall reduce its emission according to the approved curtailment plan, when the Philadelphia Health Commissioner or his designee declares an air pollution episode.

8. Modification of 112 Pollutants Which Are VOCs and PM-10

[25 Pa Code §127.512(j)]

Except when precluded by the Clean Air Act, the Permittee may modify the mixture of pollutants regulated under Section 112 of the Clean Air Act (42 U.S.C.A. §7412) which are VOCs or PM-10 if:

(a) The emission limitations of the permit are not violated, and

(b) The Permittee keeps a log which identifies the mixture of pollutants regulated under Section 112 and reports such changes to AMS in the next semiannual report.

9. Risk Management

[25 Pa Code §§127.441(d), 127.512(i) and 40 CFR Part 68]

(a) If required by Section 112(r) of the Clean Air Act, the Permittee shall develop and implement an accidental release program consistent with requirements of the Clean Air Act and 40 CFR Part 68 (relating to chemical accident prevention provisions) and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (P.L. 106-40).

(b) When a regulated substance listed in 40 CFR §68.130 is present in a process at the Title V facility in more than the listed threshold quantity, the Permittee shall prepare and implement a risk management plan (RMP) which meets the requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68 and the Federal Chemical Safety Information, Site Security and Fuels Regulatory Relief Act.

(1) The Permittee shall submit the first RMP to AMS and EPA no later than the latest of the following:

(i) June 21, 1999;

(ii) Three years after the date on which a regulated toxic substance is first listed under §68.130; or

(iii) The date on which a regulated substance is first present above a threshold quantity in a process.

(2) The Permittee shall submit any additional relevant information requested by AMS or EPA concerning the RMP and shall make subsequent submissions of RMPs in accordance with 40 CFR §68.190.

(3) The Permittee shall certify that the RMP is accurate and complete in accordance with the requirements of 40 CFR Part 68 and guidance developed by EPA, including a checklist addressing the required elements of a complete RMP.

(c) As used in this permit condition, and defined in 40 CFR §68.3, the term “process” means any activity involving a regulated substance including any use, storage, manufacturing, handling, or on-site movement of such substances or any combination of these activities. For purposes of this definition, any group of vessels that are interconnected, or separate vessels that are located such that a regulated substance could be involved in a potential release, shall be considered a single process.

(d) If the Title V facility is subject to 40 CFR Part 68, as part of the certification required under this permit, the Permittee shall:

(1) Submit a compliance schedule for satisfying the requirements of 40 CFR Part 68 by the date specified in 40 CFR §68.10(a); or

(2) Certify that the Title V facility is in compliance with all requirements of 40 CFR Part 68 including the registration and submission of the RMP.

(e) If the Title V facility is subject to 40 CFR Part 68, the Permittee shall maintain records supporting the implementation of an accidental release program for five years in accordance with 40 CFR §68.200.

(f) When the Title V facility is subject to the accidental release program requirements of Section 112(r) of the Clean Air Act and 40 CFR Part 68, appropriate enforcement action will be taken by AMS if:

(1) the Permittee fails to register and submit the RMP or a revised plan pursuant to 40 CFR Part 68.

(2) the Permittee fails to certify that the Title V facility is in compliance with the requirements of Section 112(r) of the Clean Air Act, 40 CFR Part 68, and 25 Pa Code §127.512(i).

10. Stratospheric Ozone Protection

[25 Pa Code §127.441(b) and 40 CFR Part 82]

The Permittee shall satisfy applicable requirements of 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction, during the service, maintenance, repair and disposal of equipment containing Class I and Class II refrigerants regulated under such regulations.

11. Sampling, Testing and Monitoring Procedures

[25 Pa Code §§127.441(c) & 127.463(e); Chapter 139; & 114(a)(3), 504(b) of the Clean Air Act & AMR I Sec. III]

(a) The Permittee shall perform the emissions monitoring and analysis procedures or test methods for applicable requirements of this Title V permit. In addition to the sampling, testing and monitoring procedures specified in this permit, the Permittee shall comply with any additional applicable requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Unless alternative methodology is required by the Clean Air Act (including §§114(a)(3) or 504(b)) and regulations adopted thereunder, the sampling, testing and monitoring required by or used by the Permittee to demonstrate compliance with any applicable regulation or permit condition shall be conducted in accordance with the requirements of 25 Pa Code Chapter 139.

12. Recordkeeping Requirements

[25 Pa Code §127.511 & Chapter 135]

(a) The Permittee shall maintain and make available, upon request by AMS, the following records of monitored information:

(1) The date, place (as defined in the permit) and time of sampling or measurements.

(2) The dates the analyses were performed.

(3) The company or entity that performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of analyses.

(6) The operating conditions as existing at the time of sampling or measurement.

(b) The Permittee shall retain records of the required monitoring data and supporting information for at least five (5) years from the date of the monitoring, sample, measurement, report or application. Supporting information includes calibration and maintenance records and original strip-chart or electronic recordings for continuous monitoring instrumentation, and copies of reports required by the permit.

(c) The Permittee shall maintain and make available to AMS upon request, records including computerized records that may be necessary to comply with the reporting, recordkeeping, and emission statement requirements in 25 Pa Code Chapter 135 (relating to reporting of sources). In accordance with 25 Pa Code Chapter 135, §135.5, such records may include records of production, fuel usage, maintenance of production or pollution control equipment or other information determined by AMS to be necessary for identification and quantification of potential and actual air contaminant emissions. If direct recordkeeping is not possible or practical, sufficient records shall be kept to provide the needed information by indirect means.

13. Reporting Requirements

[25 Pa Code §§127.411(d), 127.442, 127.463(e) 127.511(c), & AMR I Sec. II]

(a) The Permittee shall comply with the reporting requirements for the applicable requirements specified in this Title V permit. In addition to the reporting requirements specified herein, the Permittee shall comply with any additional applicable reporting requirements promulgated under the Clean Air Act after permit issuance regardless of whether the permit is revised.

(b) Pursuant to 25 Pa Code §127.511(c), the Permittee shall submit reports of required monitoring, on or before the following January 31 or July 31, whichever date is earlier, and every six months thereafter, covering the immediately preceding six month periods of July 1 - December 31 and January 1 - June 30 respectively. Instances of deviations (as defined in 25 Pa Code §121.1) from permit requirements shall be clearly identified in the reports. The reporting of deviations shall include the probable cause of the deviations and corrective actions or preventative measures taken, except that sources with continuous emission monitoring systems shall report according to the protocol established

and approved by AMS for the source. The required reports shall be certified by a responsible official.

(c) Any records, reports or information obtained by AMS or referred to in a public hearing shall be made available to the public by AMS except for such records, reports or information for which the Permittee has shown cause that the documents could be considered confidential and protected from disclosure to the public under Section 4013.2 of the Pennsylvania Air Pollution Control Act and consistent with Section 112(d) and 114(c) of the Clean Air Act and 25 Pa Code §127.411(d). The Permittee may not request a claim of confidentiality for any emissions data generated for the Title V facility.

14. Philadelphia Toxic Notification

[AMR VI Sec. II & III]**

(a) The Permittee shall notify AMS of any changes to its "Notice of Toxic Air Contaminant Emissions" within 30 days of the changes.

(b) The requirements of this condition shall not apply to toxic air contaminants emitted from the following:

(1) Combustion process using only commercial fuel, including internal combustion engines;

(2) Retail dry cleaning operations;

(3) Retail and non-commercial storage and handling of motor fuels;

(4) Incineration of waste materials other than liquid, semi-liquid or solid by-product industrial wastes; and

(5) Incidental or minor sources including laboratory-scale operations, fireplaces and household appliances, cooking appliances, general comfort ventilation of occupied spaces, housecleaning operations, residential-scale solvent use and pesticide application, and such other sources or categories of sources which are determined by AMS to be of minor significance for the purposes of this Regulation, or which AMS determines to be more appropriately evaluated by special survey methods.

15. Emission Statement

[25 Pa Code §135.21 & AMR I Sec. II.B.2.]

On or before March 1 of each year, the Permittee shall provide AMS with a statement, in a form as AMS may prescribe, for classes or categories of sources, showing the actual emissions from each source for the previous calendar year and a description of the method used to calculate the emissions. The statement shall contain emission information for the following pollutants:

(1) Oxides of nitrogen and VOCs. The statement for these pollutants shall contain a certification by a company officer or plant manager that the information contained in the statement is accurate. [25 Pa Code 135.21]

(2) Total suspended particulate, PM-10, sulfur oxides, carbon monoxide, hazardous air pollutants, and any other pollutants or information requested by AMS. [Phila. Code Sec. 3-301]

16. Reporting Of Malfunctions

[25 Pa. Code §127.511 & AMR I Sec. II.A.5.]

(a) The Permittee shall, within two (2) hours of knowledge of any occurrence, notify AMS, at 215-685-7580 during business hours and 215-686-4514 during other times, of any malfunction of the source(s) or associated air pollution control devices listed in Table A1 of this permit, which results in, or may result in, the emission of air contaminants in excess of the limitations specified in this permit, or regulation contained in 25 Pa Code Article III or the Philadelphia Air Management Code.

(b) Malfunction(s) which occur at this Title V facility, and pose(s) an imminent danger to public health, safety, welfare and the environment, and would violate permit conditions if the source were to continue to operate after the malfunction, shall immediately be reported to AMS by telephone at the above number.

(c) A written report shall be submitted to AMS within two (2) working days following the (notification of the) incident, and shall describe, at a minimum, the following:

(1) The malfunction(s).

(2) The emission(s).

(3) The duration.

(4) Any corrective action taken.

17. Compliance Certification

[25 Pa Code §127.513]

(a) The Permittee shall submit to AMS and EPA Region III a certification of compliance with each term and condition of this permit including the emission limitations, standards or work practices. This certification shall be submitted by March 1 of each year for the period of the previous calendar year and shall include:

(1) The identification of each term or condition of the permit that is the basis of the certification.

(2) The compliance status.

(3) The methods used for determining the compliance status of the source, currently and over the reporting period.

(4) Whether compliance was continuous or intermittent.

(b) The compliance certifications shall be submitted to AMS and EPA in accordance with the Submissions requirement of this permit specified in Condition #17 of this section.

18. Submissions

[25 Pa Code §§127.402(d) and 127.513(1)]

(a) Reports, test data, monitoring data, notifications, and requests for renewal of the permit shall be submitted to:

Chief of Source Registration
Air Management Services
321 University Ave.
Philadelphia, PA 19104-4543

(b) Any report or notification for the EPA Administrator or EPA Region III should be addressed to:

Associate Director
Office of Enforcement and Permits Review (3AP10)
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

(c) An application, form, report or compliance certification submitted pursuant to this permit condition shall contain a certification by a responsible official as to the truth, accuracy, and completeness as required under 25 Pa Code §127.402(d).

(d) Unless otherwise required by the Clean Air Act or regulations adopted thereunder, this certification and any other certification required pursuant to this permit shall state that based on information and belief formed after reasonable inquiry, the statements and information in the documents are true, accurate, and complete.

SECTION D. SOURCE SPECIFIC REQUIREMENTS

1. Facility

(a) Work Practice Standards

(1) SO2 Sources [SO2 Operating Permit No. SO2-95-039]

(i) The Permittee shall operate its sources consistent with all parameters established in the dispersion model submitted to AMS on August 6, 1999 and listed in the following tables A3 and A4 of SO2 Operating Permit No. SO2-95-039:

TABLE A3-FACILITY INVENTORY LIST (Girard Point Stack Parameters)

Stack ID	COMMENT	UTME	UTMN	Base elevation	Height	Diameter
S-111	1232 FCCU Feed Preheat Furnace B104	482.181	4417.285	4.570	35.052	2.438
S-112	1332 htr H1	482.181	4416.764	4.570	27.432	1.981
S-113	Heater 602	482.176	4416.772	4.570	26.822	1.448
S-114	Heater 601	482.190	4416.808	4.570	25.603	1.372
S-115	Heater 600	482.176	4416.808	4.570	26.822	1.448
S-116	1332 htr H2	482.194	4416.762	4.570	26.822	1.372
S-117	Heater 400 & 401 comb	482.142	4416.809	4.570	30.480	2.286
S-119	1332 htr H3	482.186	4416.756	4.570	27.432	1.981
S-120	AVU 137 UNIT F1 & F2 FUEL BURNING	481.793	4417.475	4.570	60.960	3.962
S-122	AVU 137 UNIT F3 FUEL BURNING	481.774	4417.498	4.570	23.012	1.372
S-123A	B101 htr 231 Stack A	482.150	4416.710	4.570	22.860	1.052
S-123B	B101 htr 231 Stack B	482.153	4416.705	4.570	22.860	1.052
S-123C	B101 htr 231 Stack C	482.156	4416.701	4.570	22.860	1.052
S-124	H1 htr 433 FUEL BURNING	482.072	4417.018	4.570	41.453	2.896
S-125	#3 BOILER HOUSE stack	481.845	4416.765	4.570	60.960	5.791
S-153	1231 Flare	482.348	4417.595	4.570	62.880	1.110
S-154	1232 Flare	482.300	4417.549	4.570	60.360	1.110
S-155	433 Flare	481.960	4417.431	4.570	81.700	1.110
S-156	1232 FCCU Unit/ CO boiler stack	482.096	4417.363	4.570	45.720	2.896

TABLE A4-FACILITY INVENTORY LIST (Point Breeze Stack Parameters)

Stack ID	COMMENT	UTME (km)	UTMN (km)	Base elevation (m)	Height (m)	Diameter (m)
S-801	210A – HTR H101	482.829	4418.297	7.250	41.605	2.254

S-802	210B – HTR H201	482.838	4418.290	7.250	60.817	2.896
S-803	210C – HTR 13H1	482.910	4418.269	7.470	66.396	3.232
S-804	UNIT 859 1H-1 Stack	482.700	4417.991	5.791	33.528	2.134
S-807	MAGNAFORMER 860 - HTRS 2H1, 2H2 & 2H4, STACK A common	482.868	4418.026	5.790	35.636	1.905
S-808	MAGNAFORMER 860 - 2H1, 2H2 & 2H4 STACK B common	482.875	4418.022	5.790	35.636	1.905
S-809	MAGNAFORMER 860 - HTR 2H3 AND 2H5 STACK A common	482.865	4418.014	5.790	33.528	2.045
S-810	MAGNAFORMER 860 - HTRS 2H3 & 2H5 – STACK B common	482.872	4418.010	5.790	33.528	2.045
S-811	MAGNAFORMER 860 - HTR 2H6	482.882	4418.052	5.760	33.528	1.270
S-812	MAGNAFORMER 860 - HTR 2H7	482.885	4418.058	5.760	33.528	1.372
S-813	MAGNAFORMER 860 HTR 2H8	482.888	4418.063	5.760	33.528	1.372
S-818	MAGNAFORMER 864 - HTR PH1	483.132	4418.262	7.890	39.091	1.486
S-819	MAGNAFORMER 864 - HTR PH2 & HTR PH4	483.111	4418.263	7.890	33.528	2.122
S-820	MAGNAFORMER 864 - HTR PH3	483.101	4418.255	7.890	33.528	2.046
S-822	MAGNAFORMER 864 - HTR PH5	483.101	4418.269	7.890	33.528	2.046
S-822	MAGNAFORMER 864 - HTR PH7	483.142	4418.269	7.890	33.528	1.372
S-823	MAGNAFORMER 864 - HTR PH11	483.151	4418.268	7.890	33.528	1.486
S-824	MAGNAFORMER 864 - HTR PH12	483.163	4418.272	7.890	36.576	1.626
S-825	DISTILLATE HDS 865 - HTR 11H1	483.106	4418.379	7.800	42.680	1.830
S-826	DISTILLATE HDS 865 - HTR 11H2	483.119	4418.379	7.800	55.169	1.880
S-827	GAS OIL HDS 866 - HTR 12H1	483.145	4418.382	7.830	38.100	1.524
S-828	FCCU 868 8H-101	483.210	4418.154	6.710	35.947	1.308
S-976	NORTH FLARE - SOUTH YARD	482.807	4417.911	5.300	90.500	2.930
S-977	SOUTH FLARE - SOUTH YARD	482.719	4417.582	3.320	90.130	2.930
S-985	FCCU RETURN STACK 868 8H-103	483.214	4418.253	6.710	60.960	2.700
S-983	UNIT 867 SRU COMBUSTION	482.648	4418.010	5.670	70.100	1.070

(ii) The Permittee shall remodel to demonstrate compliance with the National Ambient Air Quality Standard (NAAQS) for SO_2 if AMS has cause to believe that the attainment or maintenance of the standard is in jeopardy.

(2) Process unit turnarounds. Purging of volatile organic compounds during depressurization of reactors, fractionating columns, pipes, or vessels during unit shut-down, repair, inspection, or startup shall be performed in such a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the internal pressure in such equipment reaches 19.7 psia (136 kilopascals). [AMS letter dated 4/14/94; 25 PA Code §129.55(d)]

(3) The Permittee may burn non-commercial fuels in accordance with Air Management Code Section 3-207(2), AMR III, Section 1.A and 25 PA Code §123.22(e)(3).

(4) All Processes must vent to control devices specified in the process flow diagrams included in Section A. of this permit unless changes to the facility's configuration are made pursuant a valid plan approval or installation permit.

(5) Each boiler and heater shall only burn fuel types as listed in Table A-1.

(b) Testing Requirements

[25 PA Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Method 7E shall be used for nitrogen oxides.

(ii) U.S.E.P.A. Reference Method 5 and 202 shall be used for particulate matter.

(iii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iv) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(v) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(3) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5, 7E, and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 PA Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(4) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3 and the Permittee shall only use test methods authorized in accordance with 25 Pa. Code §139.

(5) SO2 Sources

(i) The Permittee shall test for sulfur content of the refinery fuel gas burned on a daily basis.

(ii) The Permittee shall test for sulfur content of the fuel upon receipt of each fuel oil delivery.

(iii) ASTM 4294 for sulfur in fuel can be used when the Permittee supports the data with a quality control plan and demonstrates the ability to accurately perform this test.

(iv) ASTM D5453 shall be used to determine hydrogen sulfide content of the fuel gas streams. The Permittee shall dedicate separate test equipment for liquid streams and gaseous streams. The Permittee shall calibrate the Antek equipment before each use. ASTM 5504 may be used when the Antek equipment is out of service or unavailable.

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following :

(1) visible and fugitive emissions during operation daily.

(2) All CEMs shall meet the requirements of 25 PA Code Chapter 139.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5, 139, and SO2 Operating Permit No. SO2-95-039]

The Permittee shall keep the following records:

(1) Records of the daily inspection for visible and fugitive emissions and any corrective actions taken.

(2) Baseline operating records, sampling data concurrent with any emission tests, and any supporting calculations used to determine emissions;

(3) Records of the occurrence or duration of each startup, shutdown, and malfunction of operation of a combustion unit;

(4) Records of the occurrence, duration, and cause (if known) of each malfunction of air pollution equipment or monitoring equipment used to comply with the restrictions or monitoring provisions of this permit;

(5) For monitoring equipment used to comply with the monitoring requirements of this permit, records documenting the completion of installation, calibration checks, and maintenance.

(e) Reporting Requirements

[25 Pa Code §127.511(c) & AMR I Section II]

(1) The Permittee shall quarterly. submit to AMS reports of each CEMs in accordance to Chapter 139 and PA Continuous Source Monitoring Manual.

(2) SO2 Sources

(i) The Permittee shall submit to AMS the CEM report for SO2 in accordance to Chapter 139 procedure quarterly. The report shall contain, at the minimum, the following information:

(A) The date, time duration, and magnitude of excess emissions.

(B) The reason for any excessive emissions.

(C) Corrective action taken.

(D) For each day, the number of valid monitoring hours, the causes for any invalid monitoring hours contained in daily average and corrective actions taken.

(ii) The results of all quality control and quality assurance actions taken. The Permittee shall submit to AMS quarterly reports of the performance of the facility using the City of Philadelphia Monitoring Report Form as required in Section C.11 of this permit. These reports shall be submitted on or before January 31, April 30, July 31, and October 31 for the previous quarter. These reports shall consist of the following:

(A) A description of any deviations from permit requirements that occurred during the three-month reporting period, the probable cause of such deviations, and corrective actions or preventive measures taken;

(B) A description of any malfunction of processes, air pollution control equipment, or monitoring equipment that occurred during the three-month reporting period, the date and duration of the incidents, the probable cause of the incidents, and actions taken to remediate such incidents;

(C) A description of any sources which have not operated in more than one year.

(3) Annual compliance certification in accordance with Section C.16.

(4) General Provisions Applicability to 40 CFR 63 Subparts F, G, and H

(i) Table 3 of 40 CFR 63 Subpart F specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subparts F, G, and H. [40 CFR 63.103(a)]

(ii) Table 6 of 40 CFR 63 Subpart CC specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subpart CC. [40 CFR 63.642(c)]

(iii) Table 1 of 40 CFR 63 Subpart Q specifies the provisions of 40 CFR Subpart A that apply and those that do not apply to owners and operators of sources subject to 40 CFR Subpart Q. [40 CFR 63.400(b)]

(iv) Owners and operators of sources subject to 40 CFR Subpart Y must comply with the requirements of 40 CFR Subpart A in accordance with the provisions for applicability of 40 CFR subpart A to 40 CFR Subpart Y Table 1. [40 CFR 63.560(c)]

(5) Semi-Annual Progress Report in accordance with Consent Decree Order 05-CV-2866. Each report shall contain the following:

(i) Progess report on the implementation of the requirement s of “Affirmative Relief/Environmental Projects”.

(ii) A summary of the emission data

(iii) Description of any problems anticipated with respect to meeting the requirements of Section V of the Consent Decree.

(iv) Any additional matter that the Permittee believes should be brought to the attention of EPA and AMS.

(6) The above Semi-Annual Progess Report shall be certified by the person responsible for the environmental management at the facility or by person responsible for overseeing the implementation of the Decree as follows: [Decree Order 05-CV-2866]

"I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

2. Group 01 – Boilers

Girard Point equipment numbered CU018, CU020, and CU021.

(a) Emission Limitations

(1) Carbon Monoxide (CO) emissions for each unit may not exceed 1% by volume of exhaust gases. [AMR VIII, Section II]

(2) Emission from the No. 3 Boilerhouse (CU-018, CU-020, CU-021) shall not exceed the following in any rolling 12-month period. [AMS Plan Approval 08080, 11/2/10]

(i) 253.7 tons of NOx on rolling 12-month period

(ii) 152.5 tons of SO2 on rolling 12-month period

(iii) 416.8 tons of CO on rolling 12-month period

(iv) 50.6 tons of PM/PM10 on rolling 12-month period

(v) 34.0 tons of VOC on rolling 12-month period

(3) The Permittee shall ensure that the sources listed below do not exceed the following emission limitations:

Source ID	CO	VOC	Particulate[a]	PM-10	NOx	SO_2[d]	Rolling 365 Day Average SO_2 Emission Rate[d]
			Lbs Pollutant/MMBTU				
CU018 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU020 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33
CU021 (GP)	---[c]	---	0.10[b]	---	0.040[a]	0.53	0.33

[a] - Consent Decree, AMS Plan Approval 08080 dated 11/2/10. The emission are based on rolling 365-day basis. NOx emissions are limited to 0.33 lb/MMBTU on rolling 30-day average using the hourly CEM data for each boiler in accordance with RACT Plan Approval 8/1/2000 and amended 10/7/02

[b] - Complies with 25 PA Code 123.11. This streamlined permit condition assures compliance with AMS Regulation II, Section V.

[c] - This source shall comply with the permit condition in 2.(a)(1) of this section.

[d] - SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA code 123.22, AMS Permit 98001 and AMS approval letter dated March 18, 1998, and AMS Plan Approval 08080 dated 11/2/10

GP - Girard Point

(b) Work Practice Standards

(1) NOx Affected Sources

(i) The Permittee of each NO_x budget source and each NO_x budget unit at the source shall hold NO_x allowances available for compliance deductions under 25 Pa Code 145.54 (relating to compliance), as of the NO_x allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NO_x emissions for the control period from the unit, as determined in accordance with 25 Pa Code 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under 25 Pa Code 145.42(e) (relating to NO_x allowance allocation) for the control period or to account for excess emissions for a prior control period under 25 Pa Code 145.54(d) or to account for withdrawal from the NO_x budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under 25 Pa Code 145.86 and 145.87 (relating to withdrawal from NO_x Budget Trading Program; and opt-in source change in regulatory status). [25 Pa Code § 145.6(b)(1)]

(ii) Each ton of NOx emitted in excess of the NOx budget emissions limitation shall constitute a separate violation. [25 Pa Code §145.6(b)(2)]

(iii) The Permittee of a NO_x budget unit that has excess emissions in any control period shall do the following: [25 Pa Code § 145.6(c)]

(A) Surrender the NOx allowances required for deduction under 25 Pa Code §145.54(d)(1)

(B) Pay any fine penalty or assessment or comply with other remedy imposed under 25 Pa Code § 145.54(d)(3) of the act.

(iv) Except as provided under 25 Pa Code 145.11 (relating to alternate NOx authorized account representative), each NOx budget source, including all NOx budget units at the source, shall have only one, NOx authorized account representative, with regard to all matters under the NOx Budget Trading Program concerning the source or any NOx budget unit at the source. [25 Pa Code §145.10(a)]

(v) Each submission under the NOx Budget Trading Program shall be submitted, signed and certified by the NOx authorized account representative for each NOx budget source on behalf of which the submission is made. [25 Pa Code 145.10(e)]

(2) Each No 3 Boilerhouse boiler (CU018, CU020, & CU021) shall burn only refinery fuel gas and acid soluble oil (including cutter and line flush material), except that fuel oil burning will be allowed during periods of natural gas curtailment, test runs, and operator training. [AMS Plan Approval 08080, 11/2/10]

(3) Total combustion of acid soluble oil (ASO) at the No. 3 Boiler House shall not exceed 8.92 barrels per day on a rolling 365-day basis. Total combustion of ASO system line wash material at the No. 3 Boiler House shall not exceed 35.7 barrels per day on a rolling 365-day basis. [AMS Plan Approval 08080, 11/2/10]

(4) Total heat input to the No. 3 Boilerhouse (CU-018, CU-020, CU-021) shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis. [AMS Plan Approval 08080, 11/2/10]

(5) The hourly heat input to Boiler Nos. 37 (CU-018) and 39 (CU-020) shall be capped at 495 MMBTU/hr for each boiler. The hourly heat input to Boiler No. 40 (CU-021) shall be capped at 660 MMBTU/hr. [Case-by-case RACT, 25 PA Code Sections 129.91-95, AMS Plan Approval 08080, 11/2/10]

(6) The No. 3 Boilerhouse (CU-018, CU-020, CU-021) shall be equipped with continuous monitors and recorders for NOx and O2. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139.

(7) An annual adjustment or tune-up shall be performed on the combustion process for each boiler by December 31st of each year not to exceed 12 months between tunings. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2G and 3, 25 PA Code §129.93(b)(2)-(5)] The actual test may be performed anywhere between October 1 and December 31 for any source.

(8) The hydrogen sulfide content of the refinery fuel gas burned in the boilers is limited to 0.1 gr/dscf. [AMS Permit 94329 dated December 27, 1994, paragraph 3, and AMS Permit 94145 to 94150 dated September 26, 1994, paragraph 3]

(9) The Permittee shall operate Ultra Low NOx burners on CU018, CU020, and CU021 (Girard Point). [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2A]

(10) The Permittee shall ensure that all fuel burning sources are capped at the heat input specified in the table below:

Source ID	Hourly Heat Input Cap (MMBTU/hr)	Rolling 12-month Heat Input Cap (MMBTU/yr)
CU018 (GP)	495[a]	---
CU020 (GP)	495[a]	---
CU021 (GP)	660[a]	---

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2C.

(11) Beginning January 31, 2016, the Permittee shall conduct tune-up for each boiler to demonstrate compliance with 40 CFR 63 Subpart DDDDD

(i) Tune-ups shall be conduction every 5 years on boiler with continuous oxygen trim system. [40 CFR 63.7540(a)(12)]

(ii) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(A) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(B) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(C) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(D) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(E) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer;

(iii) The Permittee may delay the burner inspection for the boiler with continuous oxygen trim system specified in Section D.2(b)(11)(ii)(A) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(iv) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

(c) Testing Requirements

[25 PA Code §139]

(1) NOx Affected Sources

(i) The Permittee shall comply with the initial certification and recertification procedures in accordance with 25 Pa Code §145.71. [25 Pa Code §145.71(b)]

(ii) The NOx authorized account representative shall submit an application to the Department within 45 days after completing all initial certification or recertification tests required under 25 Pa Code 145.71 (relating to initial certification and recertification procedures) including the information required under 40 CFR Part 75, Subpart H. [25 Pa Code §145.74(c)]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance.

(2) Compliance with the NOx emission limitations listed in Section D.2(a)(5) shall be calculated on a 30-day rolling average based on hourly averages of CEM data. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 4B]

(3) The fuel type and fuel usage for each boiler.

(4) The Permittee shall monitor all fuel input to boilers with BTU limitations in Section D.2(b)(4),(5), & (11) on a daily basis to ensure capacity limits are not exceeded or install fuel limiting devices on the boilers to keep capacities below the allowable limits. The compliance method must be in place by June 30th 2000. [Case-by-case RACT, 25 Pa Code §§129.91-95]

(5) The Permittee shall demonstrate compliance with the SO2 emission limitations by monitoring the sulfur content of the fuel burned. [SO2 Operating Permit No. SO2-95-039, and Permits 94145 to 94150 dated September 26, 1994, paragraph 6]

(6) NOx Affected Sources

(i) 25 Pa Code 145.6(a) - Standard requirements – Monitoring Requirements.

(A) The Permittee and the NOx authorized account representative of each NOx budget source and each NOx budget unit at the source shall comply with the monitoring requirements of 25 Pa Code 145.70-145.76 (relating to recordkeeping and recording requirements).

(B) The emissions measurements recorded and reported in accordance with 25 Pa Code 145.70-145.76 shall be used to determine compliance by the unit with the NOx budget emissions limitation under 25 Pa Code 145.6(c).

(ii) 25 Pa Code 145.6(b) - Standard requirements – NOx Requirements.

(A) The Permittee of each NOx budget source and each NOx budget unit at the source shall hold NOx allowances available for compliance deductions under 25 Pa Code 145.54 (relating to compliance), as of the NOx allowance transfer deadline, in the unit's compliance account and the source's overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with 25 Pa Code 145.70-145.76 (relating to recordkeeping and reporting requirements) plus any amount necessary to account for actual heat input under 25 Pa Code 145.42(e) (relating to NOx allowance allocation) for the control period or to account for excess emissions for a prior control period under 25 Pa Code 145.54(d) or to account for withdrawal from the NOx budget trading program, or a change in regulatory status, of a NOx budget opt-in unit under 25 Pa Code 145.86 and 145.87 (relating to withdrawal from NOx Budget Trading Program; and opt-in source change in regulatory status).

(B) A NOx budget unit shall be subject to the above requirements in Section D.2.(d)(7) (ii)(A) starting on May 1, 2003, or the date on which the unit commences operation, whichever is later.

(v) The Permittee of a unit that is not subject to an acid rain emissions limitation shall comply with requirements of 40 CFR 75.62, except that the monitoring plan is only required to include the information required by 40 CFR Part 75, Subpart H. [25 Pa Code §145.74(b)(2)]

(7) The Permittee shall daily monitor the fuel type and fuel usage on a daily basis of the No 3 Boilerhouse to ensure the heat inputs limits are not exceeded. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 02184 dated 5/13/04, AMS Plan Approval 08080, 11/2/10]

(8) The Permittee shall demonstrate compliance with SO2 limits of the No. 3 Boilerhouse boilers by monitoring the sulfur content of fuel burned. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO2 Operating Permit No. SO2-95-039, [AMS Plan Approval 08080, 11/2/10]

(9) The Permittee shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas to No. 3 Boilerhouse with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 25 PA Code Chapter 139 and 40 CFR 60.105(a)(4). [AMS Plan Approval 08080, 11/2/10]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Fuel type, fuel usage, and sulfur analysis of the fuel oil burned on a daily basis.

(2) Records of annual adjustments or tuneups. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5; 25 PA Code §129.93(b)(3)(i)-(v)]

(3) CEM recorder records.

(4) NOx Affected Sources [NOx Operating Permit]

(i) The Permittee shall monitor and report NOx emissions in accordance with 40 CFR Part 96, Subpart HHHH (relating to monitoring and reporting), and establish a CAIR-authorized account representative and general account, in accordance with 40 CFR Part 96, Subparts BBBB and FFFF (relating to CAIR designated representative for CAIR NOx Ozone Season sources; and CAIR NOx Ozone Season Allowance Tracking System), incorporated into Subchapter D by reference, for the purposes of ensuring continued compliance with the non-EGU NOx Trading Program budget limitation 25 Pa Code 145.8(d)(1) and of retiring CAIR NOx Ozone Season allowances. [25 Pa Code 145.8(d)(2)]

(ii) A CAIR-authorized account representative and general account shall be established in accordance with 40 CFR Part 96, Subparts BB and FF (relating to CAIR designated representative for CAIR NOx sources; and CAIR NOx allowance tracking system), incorporated into 25 Pa Code 145 Subchapter D by reference, for the purpose of retiring CAIR NOx allowances. [25 Pa Code 145.8(d)(3)]

(iii) If the combined NOx emissions from all units subject to 25 Pa Code 145 (in the state of Pennsylvania) exceed 3,438 tons in an ozone season, then a unit whose actual emissions exceed the unit's allowable emissions for that

ozone season, as determined under 25 Pa Code 145.8(d)(5), shall surrender to the Pa DEP by April 30 of the year following the ozone season one CAIR NOx Ozone Season allowance and one CAIR NOx allowance for each ton of excess emissions. A unit whose excess emissions are 0.5 ton or greater of the next excess ton shall surrender 1 full ton of CAIR NOx allowances (banked or current) for that excess emission. Units under common ownership may include the allowable and actual emissions from multiple units to determine whether a unit must surrender allowances. [25 Pa Code 145.8(d)(6)]

(iv) If a facility's allowable emissions exceed the facility's actual emissions for an ozone season, the owner or operator may deduct the difference or any portion of the difference from the actual emissions of units under the facility's common control that are subject to § § 129.201—129.203 (relating to boilers; stationary combustion turbines; and stationary internal combustion engines). [25 Pa Code 145.8(d)(11)]

(5) The Permittee shall keep the following records for the No 3 Boilerhouse boilers: [AMS Plan Approval 08080, 11/2/10]

(i) Daily fuel type, fuel usage, and natural gas/refinery fuel gas heating value for each boiler.

(ii) No. 3 Boilerhouse rolling 12-month emissions on a monthly basis to demonstrate compliance with the emission limits. NOx emissions shall be determined based on CEM data. Other emissions shall be determined based on AMS-approved stack test data, AP-42 emissions factors, or other AMS-approved emission factors.

(iii) Total heat input to the No. 3 Boilerhouse in MMBTU per year (HHV) on a rolling 365-day basis.

(6) Maintain on-site and submit, if requested by the Administrator, an annual report containing the following information to demonstrate compliance with 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)(10)(vi)]

(i) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the process heater;

(ii) A description of any corrective actions taken as a part of the tune-up; and

(iii) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(f) Reporting Requirements

(1) NOx Affected Sources

(i) To surrender allowances under 25 Pa Code 145.8(d)(6), the Permittee shall surrender the required CAIR NOx Ozone Season allowances and CAIR NOx allowances to the Pa DEP designated NOx allowance tracking system account and provide to the PA DEP, in writing, the following: [25 Pa Code 145.8(d)(7)]

(A) The serial number of each allowance surrendered.

(B) The calculations used to determine the quantity of allowances required to be surrendered.

(ii) If the Permittee fails to comply with 25 Pa Code 145.8(d)(6), Permittee shall by June 30 surrender three CAIR NOx Ozone Season allowances and three CAIR NOx allowances of the current or later year vintage for each ton of excess emissions as calculated under 25 Pa Code 145.8(d)(6). [25 Pa Code 145.8(d)(8)]

(iii) The surrender of CAIR NOx ozone season allowances and CAIR NOx allowances under 25 Pa Code 145.8(d)(6) does not affect the liability of the owner or operator of the unit for any fine, penalty or assessment, or an obligation to comply with any other remedy for the same violation, under the CAA or the act. [25 Pa Code 145.8(d)(9)]

(A) For purposes of determining the number of days of violation, if a facility has excess emissions for the period May 1 through September 30, each day in that period (153 days) constitutes a day in violation unless the owner or operator of the unit demonstrates that a lesser number of days should be considered.

(B) Each ton of excess emissions is a separate violation.

(2) For each boiler, the Permittee shall submit the following:

(i) Submit all notifications required by 40 CFR 63.7545;

(ii) Submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD;

(iii) Submit immediate startup, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

(iv) Submit a signed statement in the Notification of Compliance Status report that indicates that the Permittee conducted a tune-up of the unit. [40 CFR 63.7530(d)]

(v) The Notification of Compliance Status shall include a signed certification that the energy assessment was completed according to 40 CFR 63 Subpart DDDDD Table and is an accurate depiction of your facility at the time of the assessment. [40 CFR 63.7530(e)]

3. Group 02 – Process Heaters

Girard Point equipment numbered CU004, CU005, CU006, CU007, CU008, CU009, CU010, CU011, CU012, CU013, CU014, CU015, CU016, and CU017. Point Breeze equipment numbered CU101, CU102, CU103, CU108, CU109, CU110, CU111, CU112, CU113, CU114, CU115, CU118, CU123, CU124, CU125, CU126, CU127, CU128, CU129, CU-137, CU-138 and CU-139.

(a) Emission Limitations

(1) Each unit shall not burn any fuel gas that contains hydrogen sulfide (H2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104(a)(1), Consent Decree Order 05-CV-2866]

(2) Carbon Monoxide emissions from each heater shall not exceed 1% of the exhaust gases [AMR VIII]

(3) Emission from the 1332 CRU H2 Heater (CU-009) shall not exceed as follows:
(i) Carbon Monoxide emissions shall not exceed 400 ppmdv at 3% oxygen, [40 CFR 63 Subpart DDDDD, Table 1, 25 Pa Code §§127.1, AMS Plan Approval 05124 dated 10/4/05]
(ii) Nitrogen Oxide emission shall not exceed 0.04 lbs/MMBTU at 3% O2 (3-run average) [25 Pa Code 127.1, AMS Plan Approval 05124 dated 10/4/05]
(4) Emission from the 1332 H-401 and H-400 Heaters (CU-010 and CU-011) shall not exceed as follows:
(i) The combined Nitrogen Oxide (NOx) emissions from the heaters shall not exceed 62.7 tons per year on a rolling 12-month basis [AMS Plan Approval 09040, dated 2/1/10]
(ii) Nitrogen Oxides (NOx) emissions into the atmosphere from the shared exit stack of the process heaters after the SCR system shall not exceed 0.06 lb/MMBTU on a 365 rolling operating day basis, calculated daily [AMS Plan Approval 09040, dated 2/1/10]
(A) During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU, as defined in the RACT Plan Approval (8/1/2000). All emissions during the natural draft duration shall be counted toward the annual limitation in Section D.3(a)(4)(ii).
(iii) Ammonia (NH3) emission from the shared exit stack of process heaters after the SCR system shall not exceed 1.16 lbs/hr. [25 Pa Code 127.1, AMS Plan Approval 09040, dated 2/1/10]
(iv) Particulate matter emissions from the Heater 1332 H-401 (CU-010) shall not exceed 0.17 lb/MMBTU and 1332 H-400 (CU-011) shall not exceed 0.19 lb/MMBTU [25 PA Code 123.11(a)(2) and AMS Reg. II, Sec. V, AMS Plan Approval 09040, dated 2/1/10]
(5) Emission from the 210 H-201 Heater (CU-102) shall not exceed as follows:
(i) NOx emissions shall not exceed 31.8 ton per year on a rolling 365-day basis [AMS Plan Approval 10180, dated 2/3/11]
(ii) NOx emissions shall not exceed 0.030 lbs/MMBTU on a rolling 365-day basis [AMS Plan Approval 10180, dated 2/3/11]
(iii) Particulate matter emissions shall not exceed 0.10 lbs/MMBTU gross heat input. [AMR II. Section V.2, AMS Plan Approval 10180, dated 2/3/11]
(iv) Sulfur dioxide emissions shall not exceed 500 ppmvd [Plan Approval 10180 dated 2/3/11, Plan Approval 00186 dated 3/22/03, 25 PA Code 123.21(b)]
(7) Emission from the 210 13H-1 Heater (CU-103) shall not exceed as follows:
(i) Sulfur dioxide (SO2) emissions shall not exceed 11.01 tons in any rolling 12-month period. [AMS Plan Approval 02184 dated 8/12/04]
(8) Emission from the 870 H1 and H2 Heaters (CU-137 and CU-138) shall not exceed as follows:
(i) Nitrogen Oxide (NOx) emissions from the heaters shall not exceed 0.035 lb/MMBTU. [AMS Plan Approval 02184, dated 8/12/04]

(ii) Carbon monoxide emissions from the heaters shall not exceed 400 ppmdv at 3% oxygen [25PA Code 127.1 (BAT), AMS Plan Approval 02184, dated 8/12/04]

(9) Emission from the 859 1H-1 Heater (CU-139) shall not exceed as follows:

(i) Carbon monoxide emission shall not exceed 0.0824 lb/MMBTU based on three one-hour stack tests. [AMS Plan Approval 06144 dated 1/28/08]

(10) Emission from the Unit 433 Isostripper H-1 Heater (CU-017) shall not exceed as follows: [AMS Plan Approval 06050, dated 12/4/06, PM, CO, and SO2 limits assure compliance with 25 PA Code 123.11 & 123.22, AMR II Sec VII, AMR VIII Sec II]

(i) NOx emissions shall not exceed 39.9 ton per year on a rolling 365-day basis

(ii) NOx emissions shall not exceed 0.035 lbs/MMBTU on an hourly basis using CEMs

(iii) Particulate matter (total PM/PM10) emissions shall not exceed 8.5 ton per year on a rolling 365-day basis.

(iv) Particulate matter (total PM/PM10) emissions shall not exceed 0.00745 lbs/MMBTU gross heat input.

(v) Carbon monoxide emissions shall not exceed 112.2 ton per year on a rolling 365-day basis.

(vi) Carbon monoxide emissions shall not exceed 0.0985 lbs/MMBTU gross heat input.

(vii) Sulfur dioxide emissions shall not exceed 37.6 ton per year on a rolling 365-day basis.

(viii) Sulfur dioxide emissions shall not exceed 0.033 lbs/MMBTU gross heat input.

(11) Emission from the Unit 859 1H-1 Heater (CU-139) shall not exceed as follows: [AMS Plan Approval 06144, dated 1/29/08, PM, CO, and SO2 limits assure compliance with 25 PA Code 123.11 & 123.22, AMR II Sec VII, AMR VIII Sec II, and 40 CFR Subpart DDDDD Table 1]]

(i) NOx emissions shall not exceed 8.6 ton per year on a rolling 365-day basis

(ii) NOx emissions shall not exceed 0.02 lbs/MMBTU on an hourly based on 3-one-hour stack test

(iii) Particulate matter (total PM/PM10) emissions shall not exceed 3.2 ton per year on a rolling 365-day basis.

(iv) Particulate matter (total PM/PM10) emissions shall not exceed 0.00745 lbs/MMBTU gross heat input.

(v) Carbon monoxide emissions shall not exceed 35.4 ton per year on a rolling 365-day basis.

(vi) Carbon monoxide emissions shall not exceed 0.0825 lbs/MMBTU gross heat input.

(vii) Sulfur dioxide emissions shall not exceed 5.2 ton per year on a rolling 365-day basis.

(viii) Sulfur dioxide emissions shall not exceed 0.033 lbs/MMBTU gross heat input.

(12) Emission from the Unit 868 8H-101 Heater (CU-129) shall not exceed as follows: [25 PA Code 127.1, AMS Plan Approval 03054, dated 7/29/03]

(i) Carbon Monoxide emissions shall not exceed 400 ppmdv at 3% oxygen.

(13) The Permittee shall ensure that the heaters listed below do not exceed the following particulate, NOx emission, and SO2 limitations: [Case-by-case RACT, 25 Pa Code §§129.91-95, SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 05124 dated Oct. 4, 2005]

Table D.3.a.1

	Particulate Limitation (lbs PM/MMBTU)	NOx Limitation (lbs NO_x/ MMBTU/)[a]	SO_2 Limitation[b] (lbs SO_2/MMBTU)	Rolling 365 Day Average Emission Rate[b] (lbs SO_2/MMBTU)
Source ID		**Gas**		
CU-004 GP	0.2[d]	0.177[a]	0.53	0.33
CU-005 GP	0.2[d]	---	0.53	0.33
CU-006 GP	0.2[d]	---	0.53	0.33
CU-007 GP	0.2[d]	---	0.53	0.33
CU-008 GP	0.2[d]	---	0.53	0.33
CU-009 GP	0.10[h]	0.04[h]	0.53	0.33
CU-012 GP	0.2[d]	---	0.53	0.33
CU-014 GP	0.2[d]	0.257[a]	0.53	0.33
CU-015 GP	0.1[d]	0.060[i]	0.53	0.53
CU-016 GP	0.2[d,j]	0.122[a,j]	0.53[j]	0.33[j]
CU-101 PB	0.19[c]	0.089[a]	0.53	0.33
CU-103 PB	0.1[d]	0.104[a]	0.53	0.33
CU-109 PB	0.2[d]	0.350[a]	0.53	0.33
CU-110 PB	0.2	0.163[a]	0.53	0.33
CU-111 PB	0.2[d]	0.270[a]	0.53	0.33
CU-112 PB	0.2[d]	0.163[a]	0.53	0.33
CU-113 PB	0.2[d]	---	0.53	0.33
CU-114 PB	0.2[d]	0.157[a]	0.53	0.33
CU-115 PB	0.2[d]	---	0.53	0.33
CU-118 PB	0.1[d]	0.167[a]	0.53	0.33
CU-123 PB	0.1[d]	---	0.53	0.33

CU-124 PB	0.1[d]	0.145[a]	0.53	0.33
CU-125 PB	0.1[d]	0.119[a]	0.53	0.33
CU-126 PB	0.1[d]	0.113[a]	0.53	0.33
CU-127 PB	0.1[d]	---	0.53	0.33
CU-128 PB	0.1[d]	---	0.53	0.33
CU-129 PB	0.1[d]	---	---	0.33
Quarterly NOx compliance not required for the following sources[n]				
CU-010 GP	0.17[g]	0.06[ag]	0.53	0.33
CU-011 GP	0.19[g]	0.06[ag]	0.53	0.33
CU-013 GP	0.12[c]	0.230[a]	0.53	0.33
CU-017 GP	0.00745[m]	0.035[m]	0.033[m]	0.33
CU-102 PB	0.10[d,k]	0.030[k]	0.53	0.33
CU-137 PB	0.1[d]	0.035[f]		
CU-138 PB	0.1[d]	0.035[f]	---	---
CU-139 PB (859 1H-1)	0.00745[l]	0.02[l]	0.033[l]	

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95.

[b] - SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA code 123.22.

[c] - Complies with 25 PA Code 123.11. This streamlined permit condition assures compliance with AMS Regulation II, Section V.

[d] - Complies with AMS Regulation II, Section V. This streamlined permit condition assures compliance with 25 PA Code 123.11.

[e] - Complies with Best Available Technology, 25 PA Code 127.1

[f] - AMS Plan Approval 02184 dated May 12, 2004

[g] - AMS Plan Approval 09040 dated February 1, 2010, the NOx emission are 365 rolling operating day basis, calculated daily. During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU RACT Plan Approval (8/1/2000).

[h] - AMS Plan Approval 05124 dated October 4, 2005, Complies with AMS Regulation II, Section V. This streamlined permit condition assures compliance with 25 PA Code 123.11.

[i] - AMS Plan Approval 07163 dated February 5, 2008

[j] - AMS Plan Approval 06069 dated June 13, 2006

[k] - AMS Plan Approval 10180 dated February 3, 2011

[l] - AMS Plan Approval 06050 dated December 4, 2006. This streamlined permit condition assures compliance with AMS Regulation II, Section V and 25 PA Code 123.11

[m] - AMS Plan Approval 06144 dated January 29, 2008. This streamlined permit condition assures compliance with AMS Regulation II, Section V and 25 PA Code 123.11

[n] - NOx emission are based on the 30-day rolling average.

GP - Girard Point

PB - Point Breeze

(b) Work Practice Standards

(1) The Permittee shall perform an annual adjustment or tune-up for the specified sources listed in the Table D.3.b.1 below. This adjustment shall include, at a

minimum, the following: [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2E; 25 PA Code §129.93(b)(2) and (5)]

(i) Inspection, adjustment, cleaning or replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer.

(ii) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NOx, and to the extent practicable minimize emissions of CO.

(iii) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

(iv) For oil and gas and combination oil/gas fired units requiring an annual adjustment or tune-up on the combustion process, the Permittee shall make the annual adjustment in accordance with the EPA document "Combustion Efficiency Optimization Manual for Operators of Oil and Gas-fired Boilers," September 1983 (EPA-340/1-83-023) or equivalent procedures approved in writing by the AMS.

(2) The Permittee shall ensure that the specified fuel burning sources listed in Table D.3.b.1 shall be operated within the specifications in the table.

Table D.3.b.1

Source ID	Source shall have a Heat Input Cap of: (MMBTU/hr)	Source shall be maintained by the following:	Source shall be equipped with the following:
CU-004	70 [a]	Annual Tuneup or Adjustment [a]	Ultra Low NOx Burner
CU-005	45	Annual Tuneup or Adjustment [a]	
CU-006	49	Annual Tune-up or Adjustment [a]	
CU-007	48	Annual Tune-up or Adjustment [a]	
CU-009	60 [b]	Annual Tune-up or Adjustment [a]	Ultra Low Nox Burners[b] Fuel flow monitor[b]
CU-010	233 [a]	Annual Tune-up or Adjustment [a]	
CU-011	186 [a]	Annual Tuneup or Adjustment [a]	
CU-013	415 [a]	Annual Tune-up or Adjustment [a]	
CU-014	155 [a]	Annual Tune-up or Adjustment [a]	
CU-015	60	Annual Tune-up or Adjustment [a]	Ultra Low NOx Burner Fuel Flow Monitor
CU-016	91 [a]	Annual Tune-up or Adjustment [a]	

CU-017	260 k	Annual Tune-up or Adjustment [a]	Low NOx Burner
CU-101	183	Annual Tune-up or Adjustment [a]	
CU-102	242 [a]	Annual Tune-up or Adjustment [a]	
CU-103	235.4	Annual Tune-up or Adjustment [a]	
CU-109	69.78	Annual Tune-up or Adjustment [a]	
CU-110	174.67	Annual Tune-up or Adjustment [a]	
CU-111	99.44	Annual Tune-up or Adjustment [a]	
CU-112	155	Annual Tune-up or Adjustment [a]	
CU-114	59	Annual Tune-up or Adjustment [a]	
CU-115	49.6	Annual Tune-up or Adjustment [a]	
CU-118	80	Annual Tune-up or Adjustment [a]	
CU-123	45.5	Annual Tune-up or Adjustment [a]	
CU-124	74	Annual Tune-up or Adjustment [a]	
CU-125	85.1	Annual Tune-up or Adjustment [a]	
CU-126	72.2[g]	Annual Tune-up or Adjustment [a]	
CU-127	49.9	Annual Tune-up or Adjustment [a]	
CU-128	43	Annual Tune-up or Adjustment [a]	
CU-129	49.5 [c]	Annual Tune-up or Adjustment [a]	Low NOx Burner [d]
CU-137	97 [e,d]		Ultra Low NOx Burners with flue gas Recirculation [d,e]
CU-138	53 [e,d]		Ultra Low NOx Burners
CU-139	98		Ultra Low NOx Burners

[a] - Case-by-case RACT, 25 Pa Code §§129.91-95. Dated December 6, 2002

[b] - AMS Plan approval 05124 dated October 4, 2005
[c] - AMS Installation Permit 03054 dated July 29, 2003
[d] - 25 Pa Code §§127.1, 25 Pa Code §§127.12(a)(5) complies with Best Available Technology.
[e] - AMS Plan Approval 02184 dated May 12, 2004
[f] - AMS Plan Approval 09040 dated February 1, 2010
[g] - Case-by-case RACT, 25 Pa Code §§129.91-95, AMS Plan Approval 04237 dated August 12, 2005
[k] - AMS Plan Approval 06050 dated December 4, 2006

(3) The Permittee shall operate the SCR system while operating the 1332 H-400/401 (CU-010 & CU-011) heaters except during times required to replace SCR catalyst or to do maintenance to the SCR/air pre-heater system or to operate the heaters at low firing rate during reformer catalyst regenerations. [AMS Plan Approval 09040, dated 2/1/10]

(i) The Permittee shall take a daily NOx sample during these maintenance periods when it is necessary to by-pass the SCR/air pre-heater system and the NOx CEM, and the heaters are operated in natural draft mode. During these natural draft operating periods the maximum allowable NOx limitation will be 0.156 lb/MMBTU, as defined in the RACT Plan Approval (8/1/2000).

(ii) All emissions during the natural draft duration shall be counted toward the annual limitation in Section D.3(a)(4).

(4) Each process heater shall only burn refinery fuel gas or natural gas as listed in Table A-1.

(i) The Permittee shall not burn any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf) [40 CFR 60.104 (a) (1)]

(5) During 1332 H-400/401 (CU-010 & CU-011) heater start-up the SCR system shall be brought into operation as soon as the flue gas temperature has stabilized in the range of 650 to 780 degrees Fahrenheit (F), the temperature range necessary to satisfy the catalyst system [AMS Plan Approval 09040, dated 2/1/10].

(6) The 868 8H-101 (CU-129) shall only fire refinery fuel gas and shall be equipped with low NOx burners. The firing rate shall not exceed 49.5 MMBTU/hr. [AMS Plan Approval 03054 dated 7/2/03]

(7) The fuel throughput of the 859 ULSD Hydrotreater shall be limited to 60,000 barrels per day calculated on a rolling 365 day average [AMS Plan Approval 06144, dated 1/29/08]

(8) The CU-010, CU-011, CU-013, CU-014, CU-017, and CU-0102 heaters shall be equipped with continuous monitors and recorders for NOx and O_2. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139. [Consent Decree Order 05-CV-2866]

(9) Beginning January 31, 2016, the Permittee shall conduct tune-up for each process heater to demonstrate compliance with 40 CFR 63 Subpart DDDDD

(i) Annual tune-up shall be conducted on each process heater that do not have continuous oxygen trim system [40 CFR 63.7540(a)(10)]

(ii) Tune-ups shall be conduction every 5 years on process heaters with continuous oxygen trim system. [40 CFR 63.7540(a)(12)]

(iii) Each tune-up shall include: [40 CFR 63.7540(a)(10)]

(A) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the Permittee may delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment;

(B) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available;

(C) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the Permittee may delay the inspection until the next scheduled unit shutdown).

(D) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO_x requirement to which the unit is subject;

(E) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer;

(vi) The Permittee may delay the burner inspection for process heaters with continuous oxygen trim system specified in Section D.3(b)(9)(iii)(A) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months. [40 CFR 63.7540(a)(12)]

(vii) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. [40 CFR 63.7540(a)(13)]

(c) Testing Requirements

[25 PA Code §139]

(1) Compliance with the emission limits for the combustion sources listed in Section D.3(a)(13) -Table D.3.a.1shall be determined by quarterly stack sampling with a portable NOx analyzer. After one year of sampling, the Permittee may petition AMS for semiannual monitoring. AMS may, at any time, require three one-hour stack tests per fuel type for each unit where fuels can be fired separately. AMS may, at any time, require three one-hour stack tests for dual-fuel type combustion sources where both fuels must be fired at the same time and compliance with emission limits shall be through the use of one set of three one-hour stack tests. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 4C]

(2) The Permittee shall conduct performance test at the exhaust stack to establish emission factors and demonstrate compliance with NH3 emissions of the 1332 H400/401 (CU-010 & CU-011) heaters. NH3 emissions shall be determined using the average of 3 one-hour tests per the EPA Reference Method CTM 027. [AMS Plan Approval 09040, dated 2/1/10].

(i) Maximum ammonia injection shall be determined based on the performance test. To increase the ammonia injection rate, the Permittee must demonstrate via AMS-approved performance tests that the applicable emission limits can be achieved at the higher rate.

(ii) The NH3 performance test shall be conducted within 5 years of the last performance test.

(3) The Permittee shall conduct a CO performance test on the 1332 CRU H-2 (CU-009) heater on an annual basis in accordance with 40 CFR 63.7515.

(4) The Permittee shall submit a stack test protocol to Air Management Services (AMS) at least 30 days prior to the test date and the test results must be submitted to AMS within 60 days of testing. If at any time AMS has cause to believe that air contaminant emissions from this source is in excess of the limits specified in this permit, the Permittee shall be required to conduct whatever tests are deemed necessary by AMS to determine the actual emission rates.

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall utilize an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device. [40 CFR 60.105(a)(4)]

(i) The span value for this instrument is 425 mg/dscm H_2S. 40 CFR

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.

(iii) The performance evaluations for the H_2S monitor shall use Performance Specification 7. Method 11 shall be used for conducting the relative accuracy evaluations.

(iv) H2S shall be monitored at following locations:

H2S CEMs location	SourceID	Source Name
GP Fuel Gas Mix Drum (V-10001)	CU-004	1232-B104
	CU-005	1332-H1
	CU-006	1332-H602
	CU-007	1332-H601
	CU-010	1332-H401
	CU-011	1332-H400
	CU-012	1332-H3

	CU-013	137-F1
	CU-014	137-F2
	CU-015	137-F3
	CU-016	231 B-101
	CU-017	433 H-1
	CU-018	3BH-37
	CU-020	3BH-39
	CU-021	3BH-40
PB Fuel gas Mix Drum (1V148)	CU-101	210 H-101
	CU102	210-H-201
	CU-103	210-13H1
	CU-109	860-2H2
	CU-110	860-2H3
	CU-111	860-2H4
	CU-112	860-2H5
	CU-114	860 2H-7
	CU-115	860 2H-8
	CU-118	864 PH-1
	CU-123	864-PH7
	CU-124	864-PH11
	CU-125	864-PH12
	CU-126	865-11H1
	CU-127	865-11H2
	CU-128	866-12H1
	CU-137	870 H-1
	CU-138	870 H-2
	CU-139	859 1H-1
H2S CEM at 1332 H2 Heater	CU-009	1332-H2
H2S CEM at 868 H-101 Heater	CU-129	868 8H-101

(2) The Permittee shall monitor the refinery fuel gas heating value and consumption daily, when the heater is in operation

(3) The Permittee shall install a parametric emissions monitoring system (PEMS) on the 868 8H 101 heater (CU-129) for Carbon Monoxide. The chosen parameters and software CEM shall accurately predict the emissions. Accuracy of the system shall be demonstrated during a stack test. The parameters and predicted emissions shall be monitored and recorded continuously to ensure compliance with the Carbon Monoxide emission limitation of 400ppmdv at 3% oxygen. [AMS Installation Permit. 03054 dated July 29, 2003]

(4) The Permittee shall install, operate, calibrate, and maintain an instrument for continuously monitoring and recording the concentration by volume (dry basis,

0 percent excess air) of NO_X emissions into the atmosphere, on the exit stack after the 1332 H-400/401 heaters (CU-010 & 011) SCR system. The monitor must include an O_2 monitor for correcting the data for excess air. The NOx and O2 CEMS must comply with PA CSMM Revision 7 and 25 PA Code Chapter 139. [AMS Plan Approval 09040, dated 2/1/10].

(5) For 1332 H-400/401 heaters (CU-010 & 011)

(i) The Permittee shall monitor for NOx, PM, NH3 emissions from the heaters. [AMS Plan Approval 09040, dated 2/1/10].

(ii) The Permittee shall daily monitor the fuel type and fuel usage of the heaters to ensure the capacity limits are not exceeded. [AMS Plan Approval 09040, dated 2/1/10].

(iii) The Permittee shall monitor and record ammonia injection of the heaters SCR system on an hourly basis to ensure compliance. [AMS Plan Approval 09040, dated 2/1/10].

(iv) The Permittee shall continuously monitor flue gas temperature at the inlet of the SCR to ensure good operating practice.. [AMS Plan Approval 09040, dated 2/1/10].

(6) The Permittee shall monitor NOx concentration of Unit 231 B 101 (CU-016) process heater using a portable NOx analyzer semi-annually [AMS Plan Approval 04140 dated 9/14/04, AMS Plan Approval 06069 dated 6/13/06]

(7) The Permittee shall monitor all fuel input and heating values to heaters to assure compliance with Section D.3(b)(2) on a daily basis to ensure capacity limits are not exceeded or install fuel limiting devices on the heaters to keep capacities below the allowable limits. [Case-by-case RACT, 25 Pa Code §§129.91-95]

(8) The fuel type and fuel usage for each process heater. [SO2 Operating Permit No. SO2-95-039]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Data or information required to determine compliance shall be recorded and maintained in a time frame consistent with the averaging period of the requirement. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5C]

(2) For combustion units required to perform an annual adjustment or tune-up, the Permittee of the adjusted equipment shall record each adjustment procedure in a permanently bound log book or other method approved by the AMS. This log shall contain, at a minimum, the following information: [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 5; 25 PA Code §129.93(b)(3)(I)-(v)]

(i) The date of the tuning procedure.

(ii) The name of the service company and technicians.

(iii) The final operating rate or load.

(iv) The final CO and NOx emission rates.

(v) The final excess oxygen rate.

(3) Records of periods of excess emissions shall be determined semiannually for all rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system exceeds 230 mg/dscm (0.10 gr/dscf). [40 CFR 60.105(e)(3)(ii)]

(4) The Permitee shall keep records of the following for each heater:

(i) Continuous Hydrogen Sulfide monitoring system records

(ii) Daily refinery gas consumptions, heating value, and sulfur content

(A) Heating value in MMBTU/hr shall be recorded hourly, calulated on a 24-hour (calendar day) average.

(iii) Stack test results

(iv) Continuous PEMS records for Carbon Monoxide for the 868 8H101 (CU1-129) heater.

(v) Maintenance records

(5) For 1332 H-400/401 heaters (CU-010 & 011)

(i) The Permittee shall keep records for NOx, PM, NH3 emissions from the heaters. [AMS Plan Approval 09040, dated 2/1/10].

(A) NOx emissions shall be determined daily based on CEM data. The NOx emission shall be converted to lbs/MMBTU at 0% O_2 using the equation below to ensure compliance.

Lb/MMBTU = (ppmdv)*(1.194x10^{-7})*(F-factor)*(20.9 / (20.9 - % O_2)) where the F factor = scf flue gas per MMBTU calculated daily from daily fuel gas samples.

(B) NH3 emissions shall be determined based on AMS approved stack data and the PM emissions shall be determined based on AP-42 emission factor or other AMS-approved emission factor.

(ii) The Permittee shall daily record the fuel type and fuel usage of the heater to ensure the capacity limits are not exceeded. [AMS Plan Approval 09040, dated 2/1/10].

(iii) The Permittee shall record ammonia injection of heater SCR system on an hourly basis to ensure compliance. [AMS Plan Approval 09040, dated 2/1/10].

(iv) The Permittee shall continuously record flue gas temperature at the inlet of the SCR to ensure good operating practice.. [AMS Plan Approval 09040, dated 2/1/10].

(6) The Permittee shall record the following for Unit 231 B 101 (CU-016): [AMS Plan Approval 04140 dated 9/13/04, AMS Plan Approval 06069 dated 6/13/08]

(i) SO2 emission shall be calculated using fuel sulfur content

(ii) PM, NOx, and CO shall be calculated using AP-42 emission factors or other AMS approved emission factors

(A) If at any time AMS has cause to believe that air containment emission is in excess of the limits specified, the Permittee shall be required to conduct whatever tests deemed necessary by AMS to determine the actual emission rate.

(7) Maintain on-site and submit, if requested by the Administrator, an annual report containing the following information to demonstrate compliance with 40 CFR 63 Subpart DDDDD [40 CFR 63.7540(a)(10)(vi)]

(iv) The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the process heater;

(v) A description of any corrective actions taken as a part of the tune-up; and

(vi) The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit.

(f) Reporting Requirements

(1) The Permittee shall submit CEM and production reports to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

(2) For 868 8H-101 (CU-129), written quarterly reports of excess emissions shall include the following information:

(i) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period. [40 CFR 60.7(c)(1)]

(ii) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted. [40 CFR 60.7(c)(2)]

(iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. [40 CFR 60.7(c)(3)]

(iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report. [40 CFR 60.7(c)(4)]

(v) The summary report form shall contain the information and be in the format shown in Figure 1 below unless otherwise specified by the AMS. One summary report form shall be submitted for each pollutant monitored at each affected facility. [40 CFR 60.7(d)]

(A) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report need not be submitted unless requested by the AMS. [40 CFR 60.7(d)(1)]

(B) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form

and the excess emission report shall both be submitted. [40 CFR 60.7(d)(2)]

FIGURE 1—SUMMARY REPORT— GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

Pollutant (Circle One—SO_2/NOx/ TRS/H_2S/CO/Opacity)
Reporting period dates:
From to:
Company:
Emission Limitation:
Address:
Monitor Manufacturer and Model No.:
Date of Latest CMS Certification or Audit:
Process Unit(s) Description:
Total source operating time in reporting period[1]:

Emission data summary[1]	CMS performance summary[1]
1.Duration of excess emissions in reporting period due to:	1. CMS downtime in reporting period due to:
a. Startup/shutdown	a. Monitor equipment malfunctions
b. Control equipment problems	b. Non-Monitor equipment malfunctions
c. Process problems	c. Quality assurance calibration
d. Other known causes	d. Other known causes
e. Unknown causes	e. Unknown causes
2. Total duration of excess emission	2. Total CMS Downtime
3. Total duration of excess emissions X (100) [Total source operating time] %[2]	3. [Total CMS Downtime] X (100) [Total source operating time] %[2]

[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

(C) On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name
Signature

Title
Date

(vi) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the Region III Office, and the AMS [40 CFR 60.4(a)(b)]:

(vii) The Permittee shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 60.107(f)]

(3) The Permittee shall report excess emission from the process heaters defined as follows: [40 CFR 60.105(e), AMS Plan Approval 09040, dated 2/1/10]

(i) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system 230 mg/dscm (0.10 gr/dscf).

(4) For each process heater, the Permittee shall submit the following:

(i) Submit all notifications required by 40 CFR 63.7545;

(ii) Submit semiannual compliance reports in accordance with 40 CFR 63.7550 and Table 9 of 40 CFR 63 Subpart DDDDD;

(iii) Submit immediate startup, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5) and Table 9 of 40 CFR 63 Subpart DDDDD.

(iv) Submit a signed statement in the Notification of Compliance Status report that indicates that the Permittee conducted a tune-up of the unit. [40 CFR 63.7530(d)]

(v) The Notification of Compliance Status shall include a signed certification that the energy assessment was completed according to 40 CFR 63 Subpart DDDDD Table and is an accurate depiction of your facility at the time of the assessment. [40 CFR 63.7530(e)]

4. Group 03 – Flare

Girard Point equipment numbered P-117 and P-118, and P-119. Point Breeze equipment numbered P642 and P643, and P646.

(a) Emission Limitations

(1) For each flare, emissions of sulfur oxides shall not exceed 0.05 percent by volume. [AMR III, Section II.B]

(2) Hydrogen Sulfide (H2S) content of the fuel gas burned in each flare shall not exceed 0.1 grains per dry standard cubic foot. [Consent Decree Order 05-CV-2866, 40 CFR 60.104.(a)(1), AMS Plan Approval 02184 dated 8/12/04]

(i) The combustion of gases generated by the Startup, Shutdown, or Malfunction of the refinery process unit or releases to flare as a result of relief valve leakage or other emergency malfunction are exempt from the above requirement.

(b) Work Practice Standards

(1) The flares shall be designed for and operated with no visible emissions as determined by the methods specified in Section D.4(c)(2)-(5), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 63.11(b)(4) and 40 CFR 60.18(c)(1)]

(2) The flares shall be operated and maintained in conformance with their design. [40 CFR 60.18(d), 40 CFR 63.11(b)(1)]

(3) The flares shall be operated at all times when gases may be vented to them. [40 CFR 63.643(a)(1), 40 CFR 63.11(b)(3), 40 CFR 60.18(e)]

(4) The flares shall be operated with a pilot flame present at all times. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.[40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]

(5) Flares shall be operated with a pilot flame present at all times, as determined by the methods specified in paragraphs D.4(c)(2)-(5). [40 CFR 60.18(c)(2)]

(6) The Permittee has the choice of adhering to either the heat content specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or adhering to the requirements in 40 CFR 60.18(c)(3)(i). [40 CFR 60.18(c)(3)]

(7) Steam-assisted flares shall be used only when the net heating value of the gas being combusted is 11.2 MJ/scm (300 Btu/scf) or greater. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]

(8) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided below: [40 CFR 60.18(c)(4)]

(i) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c)(4)(ii)]

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, Vmax, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c)(4)(iii)]

(9) The Permittee shall investigate the cause of Hydrocarbon Flaring, Acid Gas Flaring and Tail Gas incidents, take reasonable steps to correct and minimize the conditions that have caused or contributed to Hydorcarbon Flaring, Acid Gas Flaring and Tail Gas incidents [Consent Decree Order 05-CV-2866]

(c) Testing Requirements

[25 PA Code §139]

(1) Test methods and procedures for SO_2 from combustion sources shall be equivalent to or modified to produce results equivalent to those which would be obtained by employing procedures specified in PADER Source Testing Manual. Details for sampling equipment are contained in either Appendix A of 40 CFR 60 or the PADER Source Testing Manual [25 PA Code §139.13(1)].

(2) Test Method 22 in Appendix A of 40 CFR 60 shall be used to determine the compliance of flares with the visible emission limitations. The observation

period is 2 hours and shall be used according to Method 22. [40 CFR 63.11(b)(4), 40 CFR 60.18(f)(1)]

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation [40 CFR 60.18(f)(3)]:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

C_i=Concentration of sample component "i" in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

(5) The maximum permitted velocity, V_{max}, for flares complying with Section D.3(b)(9)(i) shall be determined by the following equation: [40 CFR 60.18(f)(5)]

$$\text{Log10}\,(V_{max}) = (HT + 28.8)/31.7$$

where:

V_{max}=Maximum permitted velocity, M/sec

28.8=Constant

31.7=Constant

H_T=The net heating value as determined in 40 CFR 60.18 (f)(3).

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 63.11(b)(5), 40 CFR 60.18(f)(2)]

(2) The Permittee shall monitor the fuel type and fuels usage and sulfur content of the fuel burned for each flare pilot on a daily basis. [SO2 Operating Permit]

(3) The Permittee shall monitor that the feed to the flares has not exceeded the worst case scenario used in the modeling demonstration. The Permittee shall

determine SO2 emissions using the same analysis and calculations used in the modeling demonstration. [SO2 Operating Permit]

(4) The Permittee shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.18(d)]

(5) The flares 1231, and 1232, and 433 flares shall operate as a natural gas/fuel gas combustion device, monitoring the natural gas/fuel gases put into the flare header, with an alternative monitoring system (Alternative Monitoring Protocol for Flares – AMP for flares) as approved by EPA as seen in Section G and subsequent revisions approved by EPA. [Consent Decree Order 05-CV-2866]

(6) SO2 Emission Calculations for the Acid Gas (AG) Flaring [Consent Decree Order 05-CV-2866]

(i) The quantity of SO_2 emissions resulting from AG Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR] [TD] [ConcH_2S] [8.44×10^{-5}].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, an AG Flaring Incident that is comprised of intermittent AG Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Acid Gas was first flared.

(ii) The rate of SO_2 emissions from AG Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

ER = [FR] [ConcH_2S] [0.169].

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

where

ER = Emission Rate in pounds of SO_2 per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour

TD = Total Duration of Flaring Incident in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the AG Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from the Sulfur Recovery Plant feed gas analyzer, from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment.

(7) EPA's determination for 1231/1232 Plant Flare system AMP [dated June 3, 2011]

(i) For the 455 car-seal closed connections, the Permittee shall monitor monthly to determine if these valves have been opened and are still intact. Valves that are found to have broken seals will be reported in the Permittee's semiannual flare report as required by the Consent Decree

(ii) For the 10 pressure control valves listed in Table 1 of AMP in Section G, the Permittee shall use material balances and engineering knowledge to determine whether 500 lbs or more of the SO2 in a 24 hour period has been released when a valve has opened due to malfunction. If this standard is exceeded, a hydrocarbon flaring incident has occurred and will be addressed as one in accordance with the Consent Decree

(iii) For the 7 connections listed in Table 2 of the AMP in Section G, the Permittee shall use approved CEMs to monitor and demonstrate compliance.

(iv) For the 11 connections listed in Table 2 of the AMP in Section G, the Permittee shall conduct a one-time sampling to estimated total SO2 emissions are under 100 lbs/day as allowed under Appendix H of the Consent Decree.

(8) EPA's determination for 433 Unit Plant Flare system AMP [dated June 3, 2011]

(i) For the 5 connections described in the Amp in Section G, the Permittee shall use approved CEMs to monitor and demonstrate compliance.

(ii) No further sampling is required for exempt streams and pressure relief valves.

(iii) The Permittee shall monitor monthly to verify that the seals of the car-sealed valves have not been opened and are intact. Valves that are found to have broken seals will be reported in the Permittee's semiannual flare report as required by the Consent Decree

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) For all flares, continuous records of presence of pilot flame.

(2) For all flares record the following:

(i) Fuel types, fuel usage, and sulfur analysis of the fuel burned in the pilots on a daily basis. [SO2 Operating Permit No. SO2-95-039]

(A) The sulfur content of the natural gas burnt in the flare pilot may be based on AP-42 factors for combustion sources.

(ii) Occurrences when the feed to the flare has exceeded the worst case analysis for SO2 in the modeling demonstration including the date, time, duration and calculated emissions of the exceedance. [SO2 Operating Permit No. SO2-95-039]

(iii) Date, time, duration, and calculated emissions of any exceedance per Section D.4(d)(3).

(3) SO2 emission for each Acid Gas or Tail Gas Flaring incident. Calculations shall be in accordances with Section D.4(d)(6) [Consent Decree Order 05-CV-2866]

Commented [A27]: Acid gas and Tail gas units are shutdown.

(4) SO2 emission for each Hydrocarbon Flaring Incident. SO2 emission calculations for each Hydrocarbon flaring Incident shall use AG Flaring Incident the following formulas accordances with Section D.4(d)(6) [Consent Decree Order 05-CV-2866]

(i) The quantity of SO_2 emissions resulting from Hydrocarbon Flaring Incident shall be calculated by the following formula:

Tons of SO_2 = [FR] [TD] [ConcH_2S] [$8.44x10^{-5}$].

The quantity of SO_2 emitted shall be rounded to one decimal point. (Thus, for example, for a calculation that results in a number equal to 10.050 tons, the quantity of SO_2 emitted shall be rounded to 10.1 tons, and less than 10.050 shall be rounded to 10.0.) For purposes of determining the occurrence of, or the total quantity of SO_2 emissions resulting from, a Hydrocarbon Flaring Incident that is comprised of intermittent Hydrocarbon Flaring, the quantity of SO_2 emitted shall be equal to the sum of the quantities of SO_2 flared during each 24-hour period starting when the Hydrocarbon was first flared.

(ii) The rate of SO_2 emissions from Hydrocarbon Flaring Incident shall be expressed in terms of pounds per hour and shall be calculated by the following formula:

ER = [FR] [ConcH_2S] [0.169].

The emission rate shall be rounded to one decimal point. (Thus, for example, for a calculation that results in an emission rate of 19.95 pounds of SO_2 per hour, the emission rate shall be rounded to 20.0 pounds of SO_2 per hour; for a calculation that results in an emission rate of 20.05 pounds of SO_2 per hour, the emission rate shall be rounded to 20.1.)

where

ER = Emission Rate in pounds of SO_2 per hour

FR = Average Flow Rate to Flaring Device(s) during Flaring Incident in standard cubic feet per hour

TD = Total Duration of Flaring Incident in hours

ConcH_2S = Average Concentration of Hydrogen Sulfide in gas during Flaring Incident (or immediately prior to Flaring Incident if all gas is being flared) expressed as a volume fraction (scf H_2S/scf gas)

8.44×10^{-5} = [lb mole H_2S/379 scf H_2S][64 lbs SO_2/lb mole H_2S][Ton/2000 lbs]

0.169 = [lb mole H_2S/379 scf H_2S][1.0 lb mole SO_2/1 lb mole H_2S][64 lb SO_2/1.0 lb mole SO_2]

The flow of gas to the Hydrocarbon Flaring Device(s) ("FR") shall be as measured by the relevant flow meter or reliable flow estimation parameters. Hydrogen sulfide concentration ("ConcH_2S") shall be determined from knowledge of the sulfur content of the process gas being flared, by direct measurement by tutwiler or draeger tube analysis or by any other method approved by EPA or the Appropriate Plaintiff/Intervenors. In the event that any of these data points is unavailable or inaccurate, the missing data point(s) shall be estimated according to best engineering judgment.

(f) Reporting Requirements

(1) Submit an excess emission and continuous monitoring system performance report and/or a summary report to the EPA Administrator and AMS semiannually stating when and how long the pilot flame was not present. [40 CFR 63.10(e)(3)]

(2) No later than 45 days following the end of an Acid Gas Flaring Incident occurring after Date of Entry, the Permittee shall submit to AMS and EPA a report with following: [Consent Decree Order 05-CV-2866]

(i) The date and time that the Acid Gas Flaring Incident started and ended. To the extent that the Acid Gas Flaring Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, the Permittee shall set forth the starting and ending dates and times of each release;

(ii) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

(ii) The steps, if any, that the Permittee took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Acid Gas Flaring Incident;

(iii) A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Acid Gas Flaring Incident, to the extent determinable;

(iv) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Acid Gas Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and

maintenance changes shall be evaluated. If the Permittee concludes that corrective action(s) is (are) required the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If the Permittee concludes that corrective action is not required, the report shall explain the basis for that conclusion;

(v) A statement that: (a) specifically identifies each of the grounds for stipulated penalties as specified in Paragraphs 56 and 57 of the Consent Decree and describes whether or not the Acid Gas Flaring Incident falls under any of those grounds;

(vi) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 53.d and 53.e of the Consent Decree shall be submitted; provided, however, that if the Permittee has not submitted a report or a series of reports containing the information required to be submitted within the 45-day time period set forth (or such additional time as EPA may allow) after the due date for the initial report for the Acid Gas Flaring Incident, the stipulated penalty provisions of Section XI of the Consent Decree shall apply, but the Permittee shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Sunoco's failure to submit the report required under this Paragraph within the time frame set forth.

(vii) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), the Permittee shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

(3) For each Tail Gas Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2) [Consent Decree Order 05-CV-2866]

(4) No later than 45 days following the end of each Hydrocarbon Flaring Incident occurring after Date of Entry, the Permittee shal submit to AMS and EPA a report with following ~~For each Hydrocarbon Flaring Incident, the Permittee shall follow the same reporting requirements as the Acid Gas Flaring incident in Section D.4(f)(2)~~ and shall submit the Hydrocarbon Flaring Incident reports as part of the Semi-Annual Progress Reports in accordance with Section D.1(e)(6): [Consent Decree Order 05-CV-2866]

(i) ~~Submit the Hydrocarbon Flaring Incident reports as part of the Semi-Annual Progess Reports in accordance with Section D.1(e)(6)~~ The date and time that the Hydrocarbon Flaring Incident started and ended. To the extent that the Hydrocarbon Flaring Incident involved multiple releases either within a 24-hour period or within subsequent, contiguous, non-overlapping 24-hour periods, the Permittee shall set forth the starting and ending dates and times of each release;

(ii) An estimate of the quantity of sulfur dioxide that was emitted and the calculations that were used to determine that quantity;

(iii) The steps, if any, that the Permittee took to limit the duration and/or quantity of sulfur dioxide emissions associated with the Hydrocarbon Flaring Incident;

(iv) A detailed analysis that sets forth the Root Cause and all significant contributing causes of that Hydrocarbon Flaring Incident, to the extent determinable;

(v) An analysis of the measures, if any, that are available to reduce the likelihood of a recurrence of an Hydrocarbon Flaring Incident resulting from the same Root Cause or significant contributing causes in the future. If two or more reasonable alternatives exist to address the Root Cause, the analysis shall discuss the alternatives that are available, the probable effectiveness and cost of the alternatives, and whether or not an outside consultant should be retained to assist in the analysis. Possible design, operation and maintenance changes shall be evaluated. If the Permittee concludes that corrective action(s) is (are) required the report shall include a description of the action(s) and, if not already completed, a schedule for its (their) implementation, including proposed commencement and completion dates. If the Permittee concludes that corrective action is not required, the report shall explain the basis for that conclusion;

(vi) A statement that: (a) specifically identifies each of the grounds for stipulated penalties as specified in Paragraphs 56 and 57 of the Consent Decree and describes whether or not the Hydrocarbon Flaring Incident falls under any of those grounds;

(vii) To the extent that investigations of the causes and/or possible corrective actions still are underway on the due date of the report, a statement of the anticipated date by which a follow-up report fully conforming to the requirements of Paragraphs 53.d and 53.e of the Consent Decree shall be submitted; provided, however, that if the Permittee has not submitted a report or a series of reports containing the information required to be submitted within the 45-day time period set forth (or such additional time as EPA may allow) after the due date for the initial report for the Hydrocarbon Flaring Incident, the stipulated penalty provisions of Section XI of the Consent Decree shall apply, but the Permittee shall retain the right to dispute, under the dispute resolution provision of this Consent Decree, any demand for stipulated penalties that was issued as a result of Sunoco's failure to submit the report required under this Paragraph within the time frame set forth;

(viii) To the extent that completion of the implementation of corrective action(s), if any, is not finalized at the time of the submission of the report required under this Paragraph, then, by no later than 30 days after completion of the implementation of corrective action(s), the Permittee shall submit a report identifying the corrective action(s) taken and the dates of commencement and completion of implementation.

5. Group 04 - Loading Facilities and Control Equipment

Girard Point equipment numbered P129 and P183. Point Breeze equipment numbered P638 and CD-104 (LPG Flare).

(a) Emission Limitations

(1) The volatile organic compound emission from the operation of the LPG shall not exceed 24 tons per 12-month rolling period. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 2). Potential VOC emissions are less than 24 tons per year and are mostly fugitives. Compliance with this requirement is assured by the LDAR program.]

(b) Work Practice Standards

(1) The flare shall be limited to burning refinery fuel gas with a maximum concentration of 0.1 gr/dscf of hydrogen sulfide in the refinery fuel gas. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 3)]

(2) All bypass vent streams shall be equipped with flow indicators and recorders. As an alternative, the Permittee may secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4), 40 CFR 63.645(c)]

(3) The Permittee shall utilize an LDAR program as described for Group 06, Section D.7.(a). [25 PA Code §129.58]

(4) The Permittee shall utilize a carbon adsorber at the ~~benzene~~ petroleum liquids railcar unloading station to control ~~benzene~~ vapors from a manual vent on the nitrogen pressurization system. The adsorber should be operated by keeping the outlet below 20 ppm by volume ~~benzene~~ VOC. In the event that the vent is activated, the outlet shall be monitored at the start and the end of the vent period with a portable chromatograph. If a portable chromatograph is not available, a drager tube may be used as a substitute. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(c) Testing Requirements

[25 PA Code §139]

(1) For determining the magnitude of VOC leaks, use EPA Method 21 as described in SRTF Title V Section D.2.(e) ~~for Group 06, Section D.7.(b)~~.

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) For equipment leaks, utilize the same monitoring techniques and frequencies in SRTF Title V Section D.2.(e) ~~as used for Group 06, Section D.7.(c)~~.

(2) The Permittee shall monitor and keep records of any emissions that bypass any control devices associated with the ~~benzene~~ petroleum liquid unloading

operation. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(3) Monthly product unloaded from ~~benzene~~ petroleum liquid rail cars.

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall retain a schematic diagram of the affected vent stream, collection system, fuel system, combustion devices and any bypass system that is associated with the LPG on site. [AMS Approval letter dated February 7, 1995 for Permit 94105 & 94106 (Item 4)]

(2) Maintain a monitoring log similar to that shown for SRTF Title V Section D.5.(d) ~~Group 06, Section D.7.(c)(5)~~.

(3) Records of any emissions that bypass any control devices associated with the ~~benzene~~ petroleum liquid unloading operation. [AMS Approval letter dated April 20, 2000 for Plan Approval No. 00013]

(4) Monthly product unloaded from ~~benzene~~ petroleum liquid railcars.

(5) For each Group 2 transfer rack, the Permittee shall maintain records in 40 CFR 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack. [40 CFR 63.126(c)]

(i) The Permittee of a Group 1 or Group 2 transfer rack shall record, update annually, and maintain the information specified in 40 CFR 63.130(f)(1) – (3) in a readily accessible location on site: [40 CFR 63.130(f)]

(A) An analysis demonstrating the design and actual annual throughput of the transfer rack; [40 CFR 63.130(f)(1)]

(B) An analysis documenting the weight-percent organic HAP's in the liquid loaded. Examples of acceptable documentation include but are not limited to analyses of the material and engineering calculations. [40 CFR 63.130(f)(2)]

(C) An analysis documenting the annual rack weighted average HAP partial pressure of the transfer rack. [40 CFR 63.130(f)(3)]

(1) For Group 2 transfer racks that are limited to transfer of organic HAP's with partial pressure less than 10.3 kilopascals, documentation is required of the organic HAP's (by compound) that are transferred. The rack weighted average partial pressure does not need to be calculated. [40 CFR 63.130(f)(3)(i)]

(2) For racks transferring one or more organic HAP's with partial pressures greater than 10.3 kilopascals, as well as one or more organic HAP's with partial pressures less than 10.3 kilopascals, a rack weighted partial pressure shall be documented. The rack weighted average HAP partial pressure shall be weighted by the annual throughput of each chemical transferred. [40 CFR 63.130(f)(3)(ii)]

(f) Reporting Requirements

(1) Submit quarterly reports as described for SRTF Title V Section D.6 ~~Group 06, Section D.7.(d)~~.

6. Group 05 – Sulfur recovery units

Point Breeze equipment numbered P659, P660, CD108 (Amine Tail Gas Scrubber), CD109 (Tail Gas Incinerator – TGU-1), and CD114 (Tail Gas Incinerator – TGU-2)

(a) Emission Limitations

(1) Emissions of SO_2 shall not exceed a concentration of 250 ppm SO_2 by volume on a dry basis at zero percent excess air on a rolling 12-hour average. [40 CFR § 60.104(a)(2)(i), Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91 for P659, AMS Plan Approval 01162 dated 10/8/02, AMS Plan Approval 04322, dated 2/28/06 and AMS Plan Approval 06144, dated 1/29/08]

(2) The combined SO_2 emission rate from P659 and P660 shall not exceed 31.72 lbs/hr. [SO2 Operating Permit No. SO2-95-039. This streamlined permit condition assures compliance with 25 PA Code §129.13, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(3) When operating only one Claus unit (P659 or P660), the SO_2 emission rate from Sulfur Recovery units, shall not exceed 15.36 lbs/hr or 67 tons per rolling 12-month period. [Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91, AMS Plan Approval 01162 dated 10/8/02]

(b) Work Practice

(1) The 867 SRU combined (North and South) sulfur production rate shall be limited to 80 Long ton per day averaged over a rolling 12-month period [Plan Approval 06144, issued 1/29/08].

(c) Testing Requirements

[25 PA Code §139]

(1) The performance evaluations for the SO_2 monitor shall use Performance Specification 2. Methods 6C and 3A, in accordance with 40 CFR 60.106(f)(1) and 40 CFR 60.106(f)(3) respectively, shall be used for conducting the relative accuracy evaluations. [40 CFR 60.105(a)(5)(ii), 40 CFR 60.106(f)(1) and 40 CFR 60.106(f)(3)]

(2) The Permittee shall conduct CEMS performance evaluations at such times as may be required by the EPA Administrator and AMS under section 114 of the Act. The frequency shall be in accordance with 25 Pa Code §139 and the "Source Testing Manual." [40 CFR 60.13(c), 25 Pa Code §139]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall demonstrate compliance with the SO2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 40 CFR Part 60, Subpart J and Appendix B, 40 CFR Part 63, Subpart UUU and 25 PA Code Chapter 139. .[Plan Approval 04322, dated 2/28/06 and Plan Approval 06144, dated 1/29/08]

(2) Continuously monitor and record the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air. [40 CFR 60.105(a)(5)]

(i) The span values for CD-109 (TGU-1) monitor is 500 ppm SO_2 and 12.5 percent O_2. [Installation Permit No. 90006 and AMS Permit Approval Condition Letter dated 1/31/91 for P659]

(ii) The span values for CD-110 (TGU-2) monitor is 500 ppm SO2 and 25 percent O2. [40 CFR 60.105(a)(5), Plan Approval 06144 dated 1/29/08].

(3) The Permittee shall record the SRU sulfur recovery rate daily for each unit and averaged over a rolling 12-month period on a monthly basis for the combined units [SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(4) SO2 Emission Calculations for the Tail Gas Incidents. [Consent Decree Order 05-CV-2866]

(i) For Tail Gas Incidents, the Permittee shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as those set forth in Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including unscheduled shutdowns of a Claus Sulfur Recovery Plant. Notwithstanding the foregoing, stipulated penalties shall not apply to emissions resulting from the scheduled Start-up or Shutdown of a Sulfur Recovery Plant.

(ii) The quantity of SO_2 emissions resulting from a Tail Gas Incident shall be calculated by one of the following methods, based on the type of event:

(A) If Tail Gas is combusted in a flare, the SO_2 emissions are calculated using the methods outlined in Section D.4.(c)(6); or

(B) If Tail Gas exceeding the 250 ppmvd (NSPS J limit) is emitted from a monitored SRP incinerator, then the following formula applies:

$$ER_{TGI} = \sum_{i=1}^{TD_{TGI}} [FR_{Inc.}]_i [Conc.\ SO_2 - 250]_i [0.169 \times 10^{-6}] [(20.9 - \%\ O_2)/20.9]_i$$

where:

ER_{TGI} = Emissions in excess of the 250 ppm limit from the Tail Gas Unit at the SRP incinerator, pounds of SO_2 over a 24-hour period

TD_{TGI} = Hours when the incinerator CEM was exceeding 250 ppmvd SO_2 on a rolling twelve hour average, corrected to 0% O2, in each 24-hour period of the Incident

i = Each hour within TD_{TGI}

$FR_{Inc.}$ = Incinerator Exhaust Gas Flow Rate (standard cubic feet per hour, dry basis) (actual stack monitor data or engineering estimate based on the acid gas feed rate to the SRP) for each hour of the Incident

Conc. SO_2 = The average SO_2 concentration (CEMS data) that is greater than 250 ppm in the incinerator exhaust gas, ppmvd corrected to 0% O_2, for each hour of the Incident

% O_2 = O_2 concentration (CEMS data) in the incinerator exhaust gas in volume % on dry basis for each hour of the Incident

0.169×10^{-6} = [lb mole of SO_2 / 379 SO_2] [64 lbs SO_2 / lb mole SO_2] [1×10^{-6}]

Standard conditions = 60 degree F; 14.7 lb_{force}/sq.in. absolute

In the event the concentration SO_2 data point is inaccurate or not available or a flow meter for FR_{Inc}, does not exist or is inoperable, then the Permittee shall estimate emissions based on best engineering judgment.

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Record periods of excess emissions when all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under Section D.6(c)(2) exceeds 250 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(4)(i)]

NOTE: All averages shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 12-hour average shall be determined as the arithmetic average of 12 contiguous 1-hour averages.

(2) Source shall be periodically observed for process and log data, strip chart, or electronic monitoring media. [SO2 Operating Permit No. SO2-95-039]

(3) The Permittee shall keep continuous emission records. [SO2 Operating Permit No. SO2-95-039, 25 PA Code §139.101(5)]

(4) The Permittee shall record the SRU sulfur recovery rate daily for each unit and averaged over a rolling 12-month period on a monthly basis for the combined units [SO2 Operating Permit No. SO2-95-039, AMS Plan Approval 04322, dated 2/28/06, and Plan Approval 06144, dated 1/29/08]

(5) The Permittee shall record SRU rolling 12-month SO2 emissions on a monthly basis to ensure compliance with Section D.6(a)(2) & (3). Emissions may be allocated based on total SRU emission and North SRU and South SRU sulfur recovery rate.

(6) SO2 emission for each Tail Gas Flaring incident. Calculations shall be in accordances with Section D.6(d)(4) [Consent Decree Order 05-CV-2866]

(f) Reporting Requirements

(1) Report periods of excess emissions when all 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under Section D.6(c)(2) exceeds 250 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(4)(i)]

(2) Submit excess emissions and monitoring systems performance report and-or summary report form to the AMS semiannually. More frequent reporting may

be required by the AMS. All reports shall be postmarked by the 30th day following the end of each six-month period. [40 CFR 60.7(c)]

7. Group 06 – Refinery VOC, SOCMI VOC, & Existing Refinery MACT, NSPS, or NESHAP HAP Components Subject to 40 CFR 60 Subpart VV

[40 CFR 60.480, 60.590 & 63.648; PA129.58; AMR V Section XIII A. and E., 40 CFR 61 Subpart J]

The following Summary Table is a summary of leak detection and repair regulatory applicability for individual components within each process unit of the refinery:

Summary Table

Regulatory Level:	Federal				Local		Consent Decree
Program Descriptor:	40CFR60 Sub VV Applicbty & Method	40CFR60 Sub GGG Applicbty (VV Mthd)	40CFR63 Sub CC (Electing 40CFR60 Sub VV Method)	40CFR63 Sub H Applicbty & Method	PA 129.58 VOC	PA 129.71 SOCMI VOC	
Applicability & Source Definition Ref.:	60.480(a)	60.590(a)	63.640(a) 63.648(a)	63.100 63.160(a)	121.1 129.58	121.1 129.71	
Source Definition Summary:	VOC comp's. in SOCMI units per 60.489	compressor & group of all equip. within a process unit	all OHAP components in unit unless noted for VOC coverage	all OHAP components in facility CMPU's unless noted for VOC coverage	VOC comp's. in the unit not monitored per NSPS or NESHAP or Pa SOCMI	VOC comp's. in SOCMI units per 60.489 not MON. per NSPS, NESHAP or Pa VOC	
POINT BREEZE PROCESSING AREA:							
210a/b Crude, A/C Vacuum			x		x		x
864 Unifiner			x		x		x
865 Distillate HDS		x			x		x
866 Heavy Oil HDS			x		x		x
868 FCC		x(use MACT)	x		x		x
869 Alkylation HPN & DIB		x(use MACT)	x		x		x
860 Unifiner / Reformer			x		x		x
862 Light Ends			x		x		x
8832 (aka Sludge Incinerator includes GP Waste Water Treatment Plant)					x		x
867 SRU,with SWS, Claus, MDEA/DEA, Incin.			x (DEA)		x		x
867 (includes Bio Plant and PB WWTP)			x		x		x
870(LSG)			x		x		x
859 ULSD		x(GGGa)			x		x
~~Inter-Refy. Pipeline Eqpt. (Mar. Hook)~~		~~x, for 40/61/3~~					
Girard Point Wharf including Marine Vapor Recovery System		x			x		x
Fuel Gas System (GP & PB)		x			x		x
GIRARD POINT PROCESSING AREA:							
137 Crude/Vacuum			x		x		x
1332 Hydrobon			x(+VOC)		x		x
1332 Reformer			x(+VOC)		x		x
231 Distillate HDS			x		x		x
1232 FCC			x		x	x, use MACT	x
1232 CO Boiler					x		x
# 2 Treater					x		
431 C4 & C3 Distillation			x		x	x, use	x

						MACT	
C3/C4 Compressor @ 1332		x			x		x
331 Isomerization		x			x		x
					~~x~~		
433 Alkylation (HF)		x (use MACT)	x		x		x
1732 Benzene Recovery	x, use HON			x (+VOC)		x, use HON	x
1733 Cumene Production	x, use HON			x (+VOC)		x, use HON	x
# 3 Boilerhouse					x		x
8733 Sour Water Stripper					x		
531			x		x		x
532 Amine Absorber			x(DEA)				x
Butane Line (between PB & GP)		x			x		x
North Tank Field (NTF)			x		x		x
North Yard Oil Moveement (NYOM) - #3 Farm					x		x
NYOM Propane Terminal (subarea of NYOM)		x			x		x
NYOM Inter Refinery Pipeline (subarea of NYOM)		x			x		x
Schuylkill River Tank Farm					x		x (not required)
South Tank Field (except Scalehouse area)					x		x
Scalehouse (subarea of STF)				x		x	x
South Yard Oil Movement (SYOM) - #1, #4, Farms subareas			x		x		x
SYOM #5 Farm (subarea of SYOM)					x		x
SYOM #2 Farm (subarea of SYOM)			x		x		x
SYOM #2 Farm HON (subarea of SYOM)				x		x	x
SYOM Inter Refinery Pipeline (subarea of SYOM)		x			x		x

(a) Work Practice Standards

(1) PUMPS IN LIGHT LIQUID SERVICE.

(i) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-2(d), 40 CFR 60.482-2(e), and 40 CFR 60.482-2(f). [40 CFR 60.482-2(a)(1)]

(ii) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. [40 CFR 60.482-2(a)(2)]

(iii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-2(b)(1)]

(A) If there are indications of liquids dripping from the pump seal, a leak is detected.

(B) If there are indications of liquids dripping from the pump seal, the Permittee shall follow the procedure specified below in Section D.7.(a)(1)(v)(A) & (B). This requirement does not apply to a pump that was monitored after a previous weekly inspection if the instrument reading for that monitoring event was less than 10,000 ppm and the pump was not repaired since that monitoring event.

(1) Monitor the pump within 5 days as specified in 40 CFR §60.485(b). If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak shall be repaired using the procedures as follows:
(i) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described below, where practicable.
- Tightening the packing gland nuts;
- Ensuring that the seal flush is operating at design pressure and temperature.

(2) Designate the visual indications of liquids dripping as a leak, and repair the leak within 15 days of detection by eliminating the visual indications of liquids dripping.

(iv) LEAKING PUMPS.

(A) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-2(c)(1)]

(B) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(c)(2)]

(v) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 60.482-2(a), Provided the following requirements are met:

(A) Each dual mechanical seal system is-

(1) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 60.482-2(d)(1)(i)]

(2) Equipment with a barrier fluid degassing reservoir that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or [40 CFR 60.482-2(d)(1)(ii)]

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-2(d)(1)(iii)]

(B) The barrier fluid system is in heavy liquid service or is not in VOC service. [40 CFR 60.482-2(d)(2)]

(C) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(3)]

(D) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals. [40 CFR 60.482-2(d)(4)]

(E) Each sensor as described in 40 CFR 60.482-2(d)(3) is checked daily or is equipped with an audible alarm, and [40 CFR 60.482-2(d)(5)(i)]

(F) The Permittee determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(5)(ii)]

(G) LIQUID LEAKS FROM PUMPS IN LIGHT LIQUID SERVICE.

(1) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in 40 CFR 60.482-2(d)(5)(ii), a leak is detected. [40 CFR 60.482-2(d)(6)(i)]

(2) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-2(d)(6)(ii)]

(3) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(d)(6)(iii)]

(vi) Any pump that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-2(a), 40 CFR 60.482-2(c), and 40 CFR 60.482-2(d) if the pump:

(A) Has no externally actuated shaft penetrating the pump housing [40 CFR 60.482-2(e)(1)],

(B) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in 40 CFR 60.485(c), and. [40 CFR 60.482-2(e)(2)]

(C) Is tested for compliance with 40 CFR 60.482-2(e)(2) initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.482-2(e)(3)]

(vii) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from 40 CFR 60.482-2(a) through 40 CFR 60.482-2(e). [40 CFR 60.482-2(f)]

(2) COMPRESSORS. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-3 (h) and 40 CFR 60.482-3(i). [40 CFR 60.482-3(a)]

(i) Each compressor seal system as required in 40 CFR 60.482-3(a) shall be:

(A) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or [40 CFR 60.482-3(b)(1)]

(B) Equipped with a barrier fluid system that is connected by a closed vent system to a control device that complies with the requirements of 40 CFR 60.482-10; or [40 CFR 60.482-3(b)(2)]

(C) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-3(b)(3)]

(ii) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service. [40 CFR 60.482-3(c)]

(iii) Each barrier fluid system as described in 40 CFR 60.482-3(a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both. [40 CFR 60.482-3(d)]

(iv) Each sensor as required in 40 CFR 60.482-3(d) shall be checked daily or shall be equipped with an audible alarm. [40 CFR 60.482-3(e)(1)]

(v) The Permittee shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-3(e)(2)]

(vi) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under 40 CFR 60.482-3(e)(2), a leak is detected. [40 CFR 60.482-3(f)]

(vii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-3(g)]

(viii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-3(g)(2)]

(ix) A compressor is exempt from the requirements of 40 CFR 60.482-3(a) and 40 CFR 60.482-3(b), if it is equipped with a closed vent system capable of capturing and transporting any leakage from the seal to a control device that complies with the requirements of 40 CFR 60.482-10, except as provided in 40 CFR 60.482-3(i). [40 CFR 60.482-3(h)]

(x) Any compressor that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-3(a)-(h) if the compressor:

(A) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in 40 CFR 60.485(c); and [40 CFR 60.482-3(i)(1)]

(B) Is tested for compliance with 40 CFR 60.482-3(i)(1) initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.482-3(i)(2)]

(3) PRESSURE RELIEF DEVICES IN GAS/VAPOR SERVICE.

(i) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-5(a)]

(ii) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-4(b)(1)].

(iii) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(b)(2)]

(iv) Any pressure relief device that is equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of 40 CFR 60.482-4(a) and 40 CFR 60.482-4(b). [40 CFR 60.482-4(c)]

(4) SAMPLING CONNECTION SYSTEMS.

(i) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in 40 CFR 60.482-1(c). [40 CFR 60.482-5(a)]

(ii) Each closed-purge, closed-loop, or closed-vent as required in 40 CFR 60.482-5(a) shall comply with the requirements specified in 40 CFR 60.482-5(b)(1) through 40 CFR 60.482-5(b)(4). [40 CFR 60.482-5(b)]

(A) Return the purged process fluid directly to the process line; or [40 CFR 60.482-5(b)(4)]

(B) Collect and recycle the purged process fluid to a process; or [40 CFR 60.482-5(b)(4)]

(C) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of 40 CFR 60.482-10. [40 CFR 60.482-5(b)(4)]

(iii) In situ sampling systems and sampling systems without purges are exempt from the requirements of 40 CFR 60.482-5(a) and 40 CFR 60.482-5(b). [40 CFR 60.482-5(c)]

(5) OPEN-ENDED VALVES OR LINES.

(i) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c). [40 CFR 60.482-6(a)(1)]

(ii) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. [40 CFR 60.482-6(a)(2)]

(iii) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [40 CFR 60.482-6(b)]

(iv) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with 40 CFR 60.482-6(a) at all other times. [40 CFR 60.482-6(c)]

(6) VALVES IN GAS-VAPOR SERVICE AND LIGHT LIQUID SERVICE. Each valve shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with 40 CFR 60.482-7(b) through 40 CFR 60.482-7(e), except as provided in 40 CFR 60.482-7(f), (g), and (h), 40 CFR 60.483-1,2, and 40 CFR 60.482-1(c). [40 CFR 60.482-7(a)]

(i) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-7(b)]

(ii) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. [40 CFR 60.482-7(c)(1)]

(iii) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [40 CFR 60.482-7(c)(2)]

(iv) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-7(d)(1)]

(v) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-7(d)(2)]

(vi) First attempts at repair include, but are not limited to, the following best practices where practicable: tightening of bonnet bolts; replacement of bonnet bolts; tightening of packing gland nuts; and injection of lubricant into lubricated packing. [40 CFR 60.482-7(e)]

(vii) Any valve that is designated, as described in 40 CFR 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-7(a) if the valve:

(A) Has no external actuating mechanism in contact with the process fluid, [40 CFR 60.482-7(f)(1)]

(B) Is operated with emissions less than 500 ppm above background as determined by the method specified in 40 CFR 60.485(c), and [40 CFR 60.482-7(f)(2)]

(C) Is tested for compliance with 40 CFR 60.482-7(f)(2) initially upon designation, annually, and at other times requested by EPA. [40 CFR 60.482-7(f)(3)]

(viii) Any valve that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if the Permittee demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-7(a), and the Permittee adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [40 CFR 60.482-7(g)]

(ix) Any valve that is designated, as described in 40 CFR 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if:

(A) The Permittee of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface. [40 CFR 60.482-7(h)(1)]

(B) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the Permittee designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and [40 CFR 60.482-7(h)(2)]

(C) The Permittee of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 60.482-7(h)(3)]

(7) PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS.

(i) Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. [40 CFR 60.482-8(a)]

(ii) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.482-8(b)]

(iii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-8(c)(1)]

(iv) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-8(c)(2)]

(v) First attempts at repair include, but are not limited to, the best practices described under 40 CFR 60.482-7(e). [40 CFR 60.482-8(d)]

(8) CLOSED VENT SYSTEMS AND CONTROL DEVICES.

(i) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater or to an exit concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 60.482-10(b)]

(ii) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816°C. [40 CFR 60.482-10(c)]

(iii) Flares shall comply with the requirements of 40 CFR 60.18. [40 CFR 60.482-10(d)]

(iv) The Permittee of control devices shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.482-10(e)]

(v) Except as provided in 40 CFR 60.482-10(i) through 40 CFR 60.482-10(k), each closed vent system shall be inspected according to the procedures and schedule specified in 40 CFR 60.482-10(f)(1) and 40 CFR 60.482-10(f)(2). [40 CFR 60.482-10(f)]

(A) If the vapor collection system or closed vent system is constructed of hard-piping, the Permittee shall conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and conduct annual visual inspections for visible, audible, or olfactory indications of leaks. [40 CFR 60.482-10(f)(1)]

(B) If the vapor collection system or closed vent system is constructed of ductwork, the Permittee shall conduct an initial inspection according to the procedures in 40 CFR 60.485(b); and conduct annual inspections

according to the procedures in 40 CFR 60.485(b). [40 CFR 60.482-10(f)(2)]

(vi) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in 40 CFR 60.482-10(h). [40 CFR 60.482-10(g)]

(A) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 60.482-10(g)(1)]

(B) Repair shall be completed no later than 15 calendar days after the leak is detected. [40 CFR 60.482-10(g)(2)]

(vii) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the Permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [40 CFR 60.482-10(h)]

(viii) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2). [40 CFR 60.482-10(i)]

(ix) Any parts of the closed vent system that are designated as described in 40 CFR 60.482-10(l)(1), as unsafe to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2) if they comply with the requirements specified in 40 CFR 60.482-10(j)(1) and 40 CFR 60.482-10 (j)(2): [40 CFR 60.482-10(j)]

(A) The Permittee determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with 40 CFR 60.482-10(f)(1)(i) or 40 CFR 60.482-10(f)(2); and [40 CFR 60.482-10(j)(1)]

(B) The Permittee has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times. [40 CFR 60.482-10(j)(2)]

(x) Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(2), as difficult to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(10)(i) and 40 CFR 60.482-10(f)(2) if they comply with the requirements specified in of 40 CFR 60.482-10(k)(1) through 40 CFR 60.482-10(k)(3): [40 CFR 60.482-10(k)]

(A) The Permittee determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and [40 CFR 60.482-10(k)(1)]

(B) The process unit within which the closed vent system is located becomes an affected facility through 40 CFR 60.14 or 60.15, or the Permittee designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and [40 CFR 60.482-10(k)(2)]

(C) The Permittee has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum. [40 CFR 60.482-10(k)(3)]

(xi) Closed vent systems and control devices shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)]

(9) ALTERNATIVE STANDARDS FOR VALVES

(i) The Permittee may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent. [40 CFR 60.483-1(a)]

(ii) The following requirements shall be met if the Permittee wishes to comply with an allowable percentage of valves leaking:

(A) The Permittee must notify the EPA Administrator and AMS that the Permittee has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard. [40 CFR 60.483-1(b)(1)]

(B) A performance test as specified in 40 CFR 60.483-1(c) shall be conducted initially upon designation, annually, and at other times requested by the EPA Administrator and AMS. [40 CFR 60.483-1(b)(2)]

(C) If a valve leak is detected, it shall be repaired in accordance with 40 CFR 60.482-7(d) and 40 CFR 60.482-7(e). [40 CFR 60.483-1(b)(3)]

(iii) Performance tests shall be conducted in the following manner:

(A) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in 40 CFR 60.485(b). [40 CFR 60.483-1(c)(1)]

(B) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. [40 CFR 60.483-1(c)(2)]

(C) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility. [40 CFR 60.483-1(c)(3)]

(iv) The Permittee who elects to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent. [40 CFR 60.483-1(d)]

(v) ALTERNATIVE STANDARDS FOR VALVES-SKIP PERIOD LEAK DETECTION AND REPAIR.

(A)(1) The Permittee may elect to comply with one of the alternative work practices specified in 40 CFR 60.483-2(b)(2) and 40 CFR 60.483-2(b)(3). [40 CFR 60.483-2(a)]

(2) The Permittee must notify EPA before implementing one of the alternative work practices, as specified in 40 CFR 60.487(d). [40 CFR 60.483-2(a)(2)]

(B)(1) The Permittee shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in 40 CFR 60.482-7. [40 CFR 60.483-2(b)(1)]

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, a Permittee may begin to skip

1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)(2)]

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, the Permittee may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service. [40 CFR 60.483-2(b)(3)]

(4) If the percent of valves leaking is greater than 2.0, the Permittee shall comply with the requirements as described in 40 CFR 60.482-7 but can again elect to use 40 CFR 60.483-2. [40 CFR 60.483-2(b)(4)]

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of 40 CFR 60.483-2. [40 CFR 60.483-2(b)(5)]

(6) The Permittee must keep a record of the percent of valves found leaking during each leak detection period. [40 CFR 60.483-2(b)(6)]

(10) DELAY OF REPAIR.

(i) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown. Monitoring to verify repair must occur within 15 days after startup of the process unit. [40 CFR 60.482-9(a)]

(ii) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service. [40 CFR 60.482-9(b)]

Delay of repair for valves will be allowed if:

(A) The Permittee demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and [40 CFR 60.482-9(c)(1)]

(B) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with 40 CFR 60.482-10. [40 CFR 60.482-9(c)(2)]

(iii) Delay of repair for pumps will be allowed if:

(A) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and [40 CFR 60.482-9(d)(1)]

(B) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected. [40 CFR 60.482-9(d)(2)]

(iv) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown. [40 CFR 60.482-9(e)]

(11) The Permittee shall use the definitions provided in the Federal New Source Performance Standards (NSPS) to designate streams subject to monitoring in order to comply with 25 PA Code §129.58. The testing and monitoring requirements specified in 25 PA Code §129.58 are applied to sources that handle gas or "light" liquids (meeting the definition of 40 CFR 60.485(e)). Heavy liquid shall be monitored based on visual, audible, or olfactory means of detection. A source is considered to be in VOC service if it contacts or contains a gas or liquid that has at least 10% VOC by weight. [AMS Letter dated May 30, 2000, 25 PA Code §129.58(g)]

(12) The Permittee is required to comply with AMR V. Sec. XIII that prohibits the emissions of VOC in a liquid state at the point(s) of discharge into the atmosphere. [AMS Letter dated May 30, 2000 and AMR V. Sec. XIII.A.2.]

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee shall determine compliance with the standards in 40 CFR 60.482, 40 CFR 60.483, and 40 CFR 60.484 as follows: [40 CFR 60.485(b)]

(i) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: [40 CFR 60.485(b)(1)]

(A) Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 60.485(b)(1)(i)]

(B) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)(1)(ii)]

(2) The Permittee shall determine compliance with the no detectable emission standards in 40 CFR 60.482-2(e), 40 CFR 60.482-3i, 40 CFR 60.482-4, 40 CFR 60.482-7(f), and 40 CFR 60.482-10(e) as follows: [40 CFR 60.485(c)]

(i) The requirements of 40 CFR 60.485(b) shall apply. [40 CF 60.485(c)(1)]

(ii) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)(2)]

(3) The Permittee shall test each piece of equipment unless he demonstrates that a process unit is not in VOC series, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: [40 CFR 60.485(d)]

(i) Procedures that conform to the general methods in ASTM E-260, E-168, E-169 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment. [40 CFR 60.485(d)(1)]

(ii) Organic compounds that are considered by the EPA Administrator and AMS to have negligible photochemical reactivity may be excluded from the total

quantity of organic compounds in determining the VOC content of the process fluid. [40 CFR 60.485(d)(2)]

(iii) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the EPA Administrator and AMS disagrees with the judgment, 40 CFR 60.486(d)(1) and (2) shall be used to resolve the disagreement. [40 CFR 60.485(d)(3)]

(4) The Permittee shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(i) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20° C. Standard reference texts or ASTM D-2879 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the vapor pressures. [40 CFR 60.485(e)(1)]

(ii) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20° C is equal to or greater than 20 percent by weight. [40 CFR 60.485(e)(2)]

(iii) The fluid is a liquid at operating conditions. [40 CFR 60.485(e)(3)]

(5) Samples used in conjunction with 40 CFR 60.486(d), (e), and (g) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)]

(6) The Permittee shall determine compliance with the standards of flares as follows: [40 CFR 60.485(g)]

(i) Method 22 shall be used to determine visible emissions. [40 CFR 60.485(g)(1)]

(ii) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare. [40 CFR 60.485(g)(2)]

(iii) The maximum permitted velocity (V_{max}) for air-assisted flares shall be computed using the following equation: [40 CFR 60.485(g)(3)]

$V_{max} = 8.706+0.7084H_T$

Where:

V_{max} = maximum permitted velocity, m/sec

H_T = net heating value of the gas being combusted, MJ/scm.

(iv) The net heating value (H_T) of the gas being combusted in a flare shall be computed as follows: [40 CFR 60.485(g)(4)]

$H_T = K C_i H_i$

Where:

K = conversion constant, 1.740*10^7 [(g-mole)(MJ)]/[(ppm)(scm)(kcal)]

C_i = concentration of sample component "I", ppm.

H_i = net heat of combustion of sample component "I" at 25° C and 760 mm HG, kcal/g-mole

(v) Method 18 and ASTM D 2504-67 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the concentration of sample component "i." [40 CFR 60.485(g)(5)]

(vi) ASTM D 2382-76 (incorporated by reference – see 40 CFR 60.17) shall be used to determine the net heat of combustion of component “i” if published values are not available or cannot be calculated. [40 CFR 60.485(g)(6)]

(vii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used. [40 CFR 60.485(g)(7)]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of more than one affected facility may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility. [40 CFR 60.486(a)(2)]

(2) When each leak is detected, as specified in 40 CFR 60.482-2, 40 CFR 60-482-3, 40 CFR 60.482-7, 40 CFR 60.482-8, and 40 CFR 60.483-2, the following requirements apply: [40 CFR 60.486(b)]

(i) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. [40 CFR 60.486(b)(1)]

(ii) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months. [40 CFR 60.486(b)(2)]

(iii) The identification on equipment except on a valve, may be removed after it has been repaired. [40 CFR 60.486(b)(3)]

(3) When each leak is detected as specified in 40 CFR 60.482-2, 40 CFR 60-482-3, 40 CFR 60.482-7, 40 CFR 60.482-8, and 40 CFR 60.483-2, the following information shall be recorded in a log and shall be kept for 5 years in a readily accessible location: [40 CFR 60.486(c)]

(i) The instrument and operator identification numbers and the equipment identification number. [40 CFR 60.486(c)(1)]

(ii) The date the leak was detected and the dates of each attempt to repair the leak. [40 CFR 60.486(c)(2)]

(iii) Repair methods applied in each attempt to repair the leak. [40 CFR 60.486(c)(3)]

(iv) "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm. [40 CFR 60.486(c)(4)]

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [40 CFR 60.486(c)(5)]

(vi) The signature of the individual whose decision it was that repair could not be effected without a process shutdown. [40 CFR 60.486(c)(6)]

(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days. [40 CFR 60.486(c)(7)]

(viii) Dates of process unit shutdown that occur while the equipment is unrepaired. [40 CFR 60.486(c)(8)]

(ix) The date of successful repair of the leak. [40 CFR 60.486(c)(9)]

(4) The following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR 60.482-10 shall be recorded and kept in a readily accessible location: [40 CFR 60.486(d)]

(i) Detailed schematics, design specifications, and piping and instrumentation diagrams. [40 CFR 60.486(d)(1)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.486(d)(2)]

(iii) A description of the parameter or parameters monitored, as required in 40 CFR 60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 60.486(d)(3)]

(iv) Periods when the closed vent systems and control devices required in 40 CFR 60.482-2, 40 CFR 60.482-3, 40 CFR 60.482-2, 40 CFR 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame. [40 CFR 60.486(d)(4)]

(v) Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR 60.482-2, 40 CFR 60.482-3, 40 CFR 60.482-2, 40 CFR 60.482-5. [40 CFR 60.486(d)(5)]

(vi) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment. [40 CFR 60.482-10(l)(1)]

(vii) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment. [40 CFR 60.482-10(l)(2)]

(viii) For each inspection during which a leak is detected, a record of the information specified in 40 CFR 60.486(c) [40 CFR 60.482-10(l)(3)].

(ix) For each inspection conducted in accordance with 40 CFR 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)(4)]

(x) For each visual inspection during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)(5)]

(5) The following information pertaining to all equipment subject to the requirements in 40 CFR 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(e)]

(i) A list of identification numbers for subject equipment. [40 CFR 60.486(e)(1)]

(ii) A list of identification numbers for equipment that are designated for no detectable emissions. [40 CFR 60.486(e)(2)(i)]

(iii) The designation of equipment as subject to the requirements 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), and 40 CFR 60.482-7(f) shall be signed by the Permittee. [40 CFR 60.486(e)(2)(ii)]

(iv) A list of equipment identification numbers for pressure relief devices in gas/vapor service required to comply with 40 CFR 60.482-4. [40 CFR 60.486(e)(3)]

(v) The dates of each compliance test as required in 40 CFR 60.482-2(e), 40 CFR 60.482-3(i), 40 CFR 60.482-4, and 40 CFR 60.482-7(f). [40 CFR 60.486(e)(4)(i)]

(vi) The background level measured during each compliance test. [40 CFR 60.486(e)(4)(ii)]

(vii) The maximum instrument reading measured at the equipment during each compliance test. [40 CFR 60.486(e)(4)(iii)]

(viii) A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)(5)]

(ix) The following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and 40 CFR 60.482-7(h) shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(f)]

(x) A list of identification numbers for valves that are designated as unsafe-to-monitor, an explanation for each valve stating why the valve is unsafe-to-monitor, and the plan for monitoring each valve. [40 CFR 60.486(f)(1)]

(xi) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each value. [40 CFR 60.486(f)(2)]

(6) The following information shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(h)]

(i) Design criterion required in 40 CFR 60.482-2(d)(5) and 40 CFR 60.482-3(e)(2) and explanation of the design criterion; and [40 CFR 60.486(h)(1)]

(ii) Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)(2)]

(7) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in 40 CFR 60.480(d): [40 CFR 60.486(i)]

(i) An analysis demonstrating the design capacity of the affected facility, [40 CFR 60.486(i)(1)]

(ii) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and [40 CFR 60.486(i)(2)]

(iii) An analysis demonstrating that equipment is not in VOC service. [40 CFR 60.486(i)(3)]

(8) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)]

(9) The provisions of 40 CFR 60.7(b) and 40 CFR 60.7(d) do not apply to affected facilities subject to 40 CFR 60.486. [40 CFR 60.486(k)]

(10) The signature of the Permittee (or designate) whose decision it was that a repair could not be effected without a process shutdown is not required to be recorded. Instead, the name of the person whose decision it was that a repair could not be effected without a process shutdown shall be recorded and retained for 2 years. [40 CFR 63.655(d)(1)(i)]

(d) Reporting Requirements

(1) The Permittee subject to the provisions of 40 CFR 60 Subpart VV shall submit semiannual reports to EPA and AMS beginning six months after the initial start-up date. [40 CFR 60.487(a)]

(2) The initial semiannual report to EPA shall include the following information: [40 CFR 60.487(b)]

(i) Process unit identification. [40 CFR 60.487(b)(1)]

(ii) Number of valves subject to the requirements of 40 CFR 60.482-7, excluding those valves designated for no detectable emissions under the provisions of 40 CFR 60.482-7(f). [40 CFR 60.482-7(b)(2)]

(iii) Number of pumps subject to the requirements of 40 CFR 60.482-2, excluding those pumps designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e) and those pumps complying with 40 CFR 60.482-2(f). [40 CFR 60.487(b)(3)]

(iv) Number of compressors subject to the requirements of 40 CFR 60.482-3, excluding those compressors designated for no detectable emissions under the provisions of 40 CFR 60.482-3(i) and those compressors complying with 40 CFR 60.482-3(h). [40 CFR 60.487(b)(4)]

(3) All semiannual reports to EPA shall include the following information, summarized from the information in 40 CFR 60.486: [40 CFR 60.487(c)]

(i) Process unit identification. [40 CFR 60.487(c)(1)]

(ii) For each month during the semiannual reporting period:

(A) Number of valves for which leaks were detected as described in 40 CFR 60.482(7)(b) or 40 CFR 60.483-2, [40 CFR 60.487(c)(2)(i)]

(B) Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1), [40 CFR 60.487(c)(2)(ii)]

(C) Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and 40 CFR 60.482-2(d)(6)(i), [40 CFR 60.487(c)(2)(iii)]

(D) Number of pumps for which leaks were not repaired as required in 40 CFR 60.482-2(c)(1) and 40 CFR 60.482-2(d)(6)(ii), [40 CFR 60.487(c)(2)(iv)]

(E) Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f), [40 CFR 60.487(c)(2)(v)]

(F) Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1), and [40 CFR 60.487(c)(2)(vi)]

(G) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible. [40 CFR 60.487(c)(2)(vii)]

(iii) Dates of process unit shutdowns which occurred within the semiannual reporting period. [40 CFR 60.487(c)(3)]

(iv) Revisions to items reported according to 40 CFR 60.487(b) if changes have occurred since the initial report or subsequent revisions to the initial report. [40 CFR 60.487(c)(4)]

(4) The Permittee electing to comply with the provisions of 40 CFR 60.483-1 or 40 CFR 60.483-2 shall notify EPA Administrator and AMS of the alternative standard selected 90 days before implementing either of the provisions. [40 CFR 60.487(d)]

8. Group 07 – SOCMI or Refinery NESHAP Components, and Certain VOC Components, Subject to 40 CFR 63 Subpart H

[40 CFR 63.160-182; 25 Pa Code 129.58; AMR V Section XIII A & E, and 40 CFR 63.648(c)]

Refer to Summary Table in Section D.7. that summarizes leak detection and repair regulatory applicabilities for individual components within each process unit of the refinery.

(a) Work Practice Standards

(1) PUMPS. The Permittee shall monitor each pump (in light liquid service) monthly to detect leaks by the method specified in 40 CFR 63.180(b) and shall comply with the requirements of 40 CFR 63.180(a) through 40 CFR 63.180(d), except as provided in 40 CFR 63.162(b) and 40 CFR 63.180(e) through 40 CFR 63.180(j). [40 CFR 63.163(b)(1)]

(2) The instrument reading, as determined by the method as specified in 40 CFR 63.180(b), that defines a leak 1,000 parts per million or greater for all pumps. [40 CFR 63.163(b)(2)(iii)(C)]

(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, a leak is detected. [40 CFR 63.163(b)(3)]

(4) PUMP REPAIRS.

(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 63.163(c)(3) or 40 CFR 63.171. [40 CFR 63.163(c)(1)]

(ii) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable: [40 CFR 63.163(c)(2)]

(A) Tightening of packing gland nuts. [40 CFR 63.163(c)(2)(i)]

(B) Ensuring that the seal flush is operating at design pressure and temperature. [40 CFR 63.163(c)(2)(ii)]

(iii) Repair is not required unless an instrument reading of 2,000 parts per million or greater is detected. [40 CFR 63.163(c)(3)]

(5) LEAKING PUMPS.

(i) The Permittee shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the Permittee has decided, all subsequent percent calculations shall be made on the same basis. [40 CFR 63.163(d)(1)]

(ii) If the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak is calculated on a 6-month rolling average, the Permittee shall implement a quality improvement program for pumps that complies with the requirements of 40 CFR 63.176. [40 CFR 63.163(d)(2)]

(iii) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only. [40 CFR 63.163(d)(3)]

(iv) Percent leaking pumps shall be determined by the following equation [40 CFR 63.163(d)(4)]:

$$\%P_L=((P_L-P_S)/(P_T-P_S))\times 100$$

where:

$\%P_L$=Percent leaking pumps

P_L=Number of pumps found leaking as determined through monthly monitoring.

P_T=Total pumps in organic HAP service, including those meeting the criteria in 40 CFR 63.163(d)(6) and 40 CFR 63.163(d)(7).

P_S=Number of pumps leaking within 1 month of start-up during the current monitoring period.

(6) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 63.163(a) through 40 CFR 63.163(d), provided the following requirements are met: [40 CFR 63.163(e)]

(i) Each dual mechanical seal system is:

(A) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 63.163(e)(1)(i)]

(B) Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device that complies with the requirements of 40 CFR 63.172; or [40 CFR 63.163(e)(1)(ii)]

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream. [40 CFR 63.163(e)(1)(iii)]

(ii) The barrier fluid is not in light liquid service. [40 CFR 63.163(e)(2)]

(iii) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 63.163(e)(3)]

(iv) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. [40 CFR 63.163(e)(4)]

(A) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in 40 CFR 63.180(b) to determine if there is a leak of organic HAP in the barrier fluid. [40 CFR 63.163(e)(4)(i)]

(B) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected. [40 CFR 63.163(e)(4)(ii)]

(v) Each sensor as described in 40 CFR 63.163(e)(3) is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site. [40 CFR 63.163(e)(5)]

(vi) PRESENCE OF DRIPS.

(A) The Permittee determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 63.163(e)(6)(i)]

(B) If indications of liquids dripping from the pump seal exceed the criteria established in 40 CFR 63.163(5)(6)(i), or if, based on the criteria established in 40 CFR 63.163(5)(6)(i), the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected. [40 CFR 63.163(e)(6)(ii)].

(C) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 63.171. [40 CFR 63.163(e)(6)(iii)]

(D) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.163(e)(6)(iv)]

(7) Any pump that is designed with no externally actuated shaft penetrating the pump housing is exempt from the requirements of 40 CFR 63.163(a) through 40 CFR 63.163(c). [40 CFR 63.163(f)]

(8) Any pump equipped with a closed-vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of 40 CFR 63.172 is exempt from the requirements of 40 CFR 63.163(b) through 40 CFR 63.163(e). [40 CFR 63.163(g)]

(9) If more than 90 percent of the pumps at a process unit meet the criteria in either 40 CFR 63.163(e) or 40 CFR 63.163(f)., the process unit is exempt from the requirements of 40 CFR 63.163(d). [40 CFR 63.163(i)]

(10) Any pump that is designated, as described in 40 CFR 63.181(b)(7)(i), as an unsafe-to-monitor pump is exempt from the requirements of 40 CFR 63.163(b) through 40 CFR 63.163(e) if:

(i) The Permittee determines that the pump is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.163(b) through 40 CFR 63.163(d). [40 CFR 63.163(j)(1)]; and

(ii) The Permittee has a written plan that requires monitoring of the pump as frequently as practical during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable. [40 CFR 63.163(j)(2)]

(11) PRESSURE RELIEF DEVICES. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with an instrument reading of less than 500 parts per million above background except as provided in 40 CFR 63.165(b), as measured by the method specified in 40 CFR 63.180(c). [40 CFR 63.165(a)]

(i) After each pressure release, the pressure relief device shall be returned to a condition indicated by an instrument reading of less than 500 parts per million above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171. [40 CFR 63.165(b)(1)]

(ii) No later than 5 calendar days after the pressure release and being returned to organic HAP service, the pressure relief device shall be monitored to confirm the condition indicated by an instrument reading of less than 500 parts per million above background, as measured by the method specified in 40 CFR 63.180(c). [40 CFR 63.165(b)(2)]

(12) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed-vent system capable of capturing and transporting leakage from the pressure relief device to a control device as described in 40 CFR 63.172 is exempt from the requirements of 40 CFR 63.165(a) and 40 CFR 63.165(b). [40 CFR 63.165(c)]

(13) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of 40 CFR 63.165(a) and 40 CFR 63.165(b), provided the Permittee complies with the requirements in 40 CFR 63.165(d)(2). [40 CFR 63.165(d)(1)]

(14) After each pressure release, a rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 63.171. [40 CFR 63.165(d)(2)]

(15) SAMPLING CONNECTION SYSTEMS. Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR 63.162(b). Gases displaced during filling of the sample container are not required to be collected or captured. [40 CFR 63.166(a)]

(16) Each closed-purge, closed-loop, or closed-vent system as required in 40 CFR 63.166(a) shall: [40 CFR 63.166(b)]

(i) Return the purged process fluid directly to the process line; or [40 CFR 63.166(b)(1)]

(ii) Collect and recycle the purged process fluid to a process; or [40 CFR 63.166(b)(2)]

(iii) Be designed and operated to capture and transport the purged process fluid to a control device that complies with the requirements of 40 CFR 63.172; or [40 CFR 63.166(b)(3)]

(iv) Collect, store, and transport the purged process fluid to a system or facility identified in 40 CFR 63.166(b)(4)(i), 40 CFR 63.166(b)(4)(ii), or 40 CFR 63.166(b)(4)(iii)]. [40 CFR 63.166(b)(4)]

(A) A waste management unit as defined in 40 CFR 63.111 of subpart G of 40 CFR 63, if the waste management unit is subject to, and operated in compliance with the provisions of subpart G of 40 CFR 63 applicable to group 1 wastewater streams. If the purged process fluid does not contain any organic HAP listed in Table 9 of subpart G of 40 CFR 63, the waster

management unit need not be subject to, and operated in compliance with the requirements of 40 CFR 63, subpart G applicable to group 1 wastewater streams provided the facility has an NPDES permit or sends the wastewater to an NPDES permitted facility. [40 CFR 63.166(b)(4)(i)]

(B) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or [40 CFR 63.166(b)(4)(ii)]

(C) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261. [40 CFR 63.166(b)(4)(iii)]

(17) VALVES IN GAS/VAPOR SERVICE AND IN LIGHT LIQUID SERVICE. The provisions of this section apply to valves that are either in gas service or in light liquid service. The valves shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b). The instrument reading that defines a leak is an instrument reading of 500 parts per million or greater. [40 CFR 63.168(a), 40 CFR 63.168(b)(1) and 40 CFR 63.168(b)(2)(iii)]

(18) The Permittee shall monitor valves for leaks at the intervals specified below: [40 CFR 63.168(d)]

(i) At process units with 2 percent or greater leaking valves, calculated according to 40 CFR 63.168(e), the Permittee shall monitor each valve once per month. [40 CFR 63.168(d)(1)(i)]

(ii) At process units with less than 2 percent leaking valves, the Permittee shall monitor each valve once each quarter, except as provided in 40 CFR 63.168(d)(3) and 40 CFR 63.168(d)(4). [40 CFR 63.168(d)(2)]

(iii) At process units with less than 1 percent leaking valves, the Permittee may elect to monitor each valve once every 2 quarters. [40 CFR 63.168(d)(3)]

(iv) At process units with less than 0.5 percent leaking valves, the Permittee may elect to monitor each valve once every 4 quarters. [40 CFR 63.168(d)(4)]

(19) Percent leaking valves at a process unit shall be determined by the following equation: [40 CFR 63.168(e)(1)]

$$\%V_L=(V_L/(V_T+V_C))\times 100$$

where:

$\%V_L$=Percent leaking valves as determined through periodic monitoring required in 40 CFR 63.168(b) through 40 CFR 63.168(d).

V_L=Number of valves found leaking excluding nonrepairables as provided in 40 CFR 63.168(e)(3)(i).

V_T=Total valves monitored, in a monitoring period excluding valves monitored as required by 40 CFR 63.168(f)(3).

V_C=Optional credit for removed valves=0.67 × net number (i.e., total removed-total added) of valves in organic HAP service removed from process unit after the date set forth in 40 CFR 63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then V_C=0.

(20) For use in determining monitoring frequency, as specified 40 CFR 63.168(d), the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs. [40 CFR 63.168(e)(2)]

(21) NONREPAIRABLE VALVES.

(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with 40 CFR 63.168(e)(3)(ii). Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods. [40 CFR 63.168(e)(3)(i)]

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves [40 CFR 63.168(e)(3)(ii)].

(22) LEAKING VALVES.

(i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.171. [40 CFR 63.168(f)(1)]

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.168(f)(2)]

(iii) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. [40 CFR 63.168(f)(3)]

(A) The monitoring shall be conducted using as specified in 40 CFR 63.180(b) and 40 CFR 63.180(c), as appropriate, to determine whether the valve has resumed leaking. [40 CFR 63.168(f)(3)(i)]

(B) Periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d) may be used to satisfy the requirements of 40 CFR 63.168(f)(3), if the timing of the monitoring period coincides with the time specified in 40 CFR 63.168(f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of 40 CFR 63.168(f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in 40 CFR 63.168(f)(3). [40 CFR 63.168(f)(3)(ii)]

(C) If a leak is detected by monitoring that is conducted pursuant to 40 CFR 63.168(f)(3), the Permittee shall follow the provisions of 40 CFR 63.168(f)(3)(iii)(A) and 40 CFR 63.168(f)(3)(iii)(B), to determine whether that valve must be counted as a leaking valve for purposes of 40 CFR 63.168(e). [40 CFR 63.168(f)(3)(iii)]

(1) If the Permittee elected to use periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d) to satisfy the requirements of 40

CFR 63.168(f)(3), then the valve shall be counted as a leaking valve. [40 CFR 63.168(f)(3)(iii)(A)]

(2) If the Permittee elected to use other monitoring, prior to the periodic monitoring required by 40 CFR 63.168(b) through 40 CFR 63.168(d), to satisfy the requirements of 40 CFR 63.168(f)(3), then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking. [40 CFR 63.168(f)(3)(iii)(B)]

(23) First attempts at repair include, but are not limited to, the following practices where practicable: [40 CFR 63.168(g)]

(i) Tightening of bonnet bolts, [40 CFR 63.168(g)(1)]

(ii) Replacement of bonnet bolts, [40 CFR 63.168(g)(2)]

(iii) Tightening of packing gland nuts, and [40 CFR 63.168(g)(3)]

(iv) Injection of lubricant into lubricated packing. [40 CFR 63.168(g)(4)]

(24) Any valve that is designated, as described in 40 CFR 63.181(b)(7)(i), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 63.168(b) through 40 CFR 63.168(f), if: [40 CFR 63.168(h)]

(i) The Permittee determines that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.168(b) through 40 CFR 63.168(d); and [40 CFR 63.168(h)(1)]

(ii) The Permittee has a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times, but not more frequently than the periodic monitoring schedule otherwise applicable. [40 CFR 63.168(h)(2)]

(25) Any valve that is designated, as described in 40 CFR 63.181(b)(7)(ii), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 63.168(b) through 40 CFR 63.168(d) if: [40 CFR 63.168(h)(2)(i)]

(i) The Permittee of the valve determines that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface or it is not accessible at anytime in a safe manner; [40 CFR 63.168(i)(1)]

(ii) The process unit within which the valve is located is an existing source or the Permittee designates less than 3 percent of the total number of valves in a new source as difficult-to-monitor; and [40 CFR 63.168(i)(2)]

(iii) The Permittee of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 63.168(i)(3)]

(26) CONNECTORS IN GAS/VAPOR AND LIGHT LIQUID SERVICE. The Permittee shall monitor all connectors in gas/vapor and light liquid service, except as provided in 40 CFR 63.162(b) and in 40 CFR 63.174(f) through 40 CFR 63.174(h) at the intervals specified in 40 CFR 63.174(b). [40 CFR 63.174(a)]

(27) The connectors shall be monitored to detect leaks by the method specified in 40 CFR 63.180(b). [40 CFR 63.174(a)(1)]

(28) If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected. [40 CFR 63.174(a)(2)]

(29) The Permittee shall monitor for leaks at the intervals specified in either 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2) and in 40 CFR 63.174(b)(3). [40 CFR 63.174(b)]

(i) For each group of process units within an existing source, by no later than 12 months after the compliance date, the Permittee shall monitor all connectors, except as provided in 40 CFR 63. 174(f) through 40 CFR 63. 174(h). [40 CFR 63.174(b)(1)]

(ii) After conducting the initial survey required in 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2), the Permittee shall perform all subsequent monitoring of connectors at the frequencies specified in 40 CFR 63.174(b)(3)(I) through 40 CFR 63.174(b)(3)(v), except as provided in 40 CFR 63.174(c)(2): [40 CFR 63.174(b)(3)]

(A) Once per year (i.e., 12-month period), if the percent leaking connectors in the process unit was 0.5 percent or greater during the last required annual or biennial monitoring period. [40 CFR 63.174(b)(3)(i)]

(B) Once every 2 years, if the percent leaking connectors was less than 0.5 percent during the last required monitoring period. The Permittee may comply with this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The percent leaking connectors will be calculated for the total of all monitoring performed during the 2-year period. [40 CFR 63.174(b)(3)(ii)]

(C) If the Permittee of a process unit in a biennial leak detection and repair program calculates less than 0.5 percent leaking connectors from the 2-year monitoring period, the Permittee may monitor the connectors one time every 4 years. A Permittee may comply with the requirements of this paragraph by monitoring at least 20 percent of the connectors each year until all connectors have been monitored within 4 years. [40 CFR 63.174(b)(3)(iii)]

(D) If a process unit complying with the requirements of 40 CFR 63.174(b) using a 4-year monitoring interval program has greater than or equal to 0.5 percent but less than 1 percent leaking connectors, the Permittee shall increase the monitoring frequency to one time every 2 years. The Permittee may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors in the first year and the remainder of the connectors in the second year. The Permittee may again elect to use the provisions of 40 CFR 63.174(b)(3)(iii) when the percent leaking connectors decreases to less than 0.5 percent. [40 CFR 63.174(b)(3)(iv)]

(E) If a process unit complying with requirements of 40 CFR 63.174(b)(3)(iii) using a 4-year monitoring interval program has 1 percent or greater leaking connectors, the Permittee shall increase the monitoring frequency to one time per year. The Permittee may again elect to use the provisions

of 40 CFR 63.174(b)(3)(iii) when the percent leaking connectors decreases to less than 0.5 percent. [40 CFR 63.174(b)(3)(v)]

(30) NONREPAIRABLE CONNECTORS.

(i) Except as provided in 40 CFR 63.174(c)(1)(ii), each connector that has been opened or has otherwise had the seal broken shall be monitored for leaks when it is reconnected or within the first 3 months after being returned to organic hazardous air pollutants service. If the monitoring detects a leak, it shall be repaired according to the provisions of 40 CFR 63.174(d), unless it is determined to be nonrepairable, in which case it is counted as a nonrepairable connector for the purposes of 40 CFR 63.174(i)(2). [40 CFR 63.174(c)(1)(i)]

(ii) As an alternative to the requirements in 40 CFR 63.174(c)(1)(i), the Permittee may choose not to monitor connectors that have been opened or otherwise had the seal broken. In this case, the Permittee may not count nonrepairable connectors for the purposes of 40 CFR 63.174(i)(2). The Permittee shall calculate the percent leaking connectors for the monitoring periods described in 40 CFR 63.174(b), by setting the nonrepairable component, C_{AN}, in the equation in 40 CFR 63.174(i)(2) to zero for all monitoring periods. [40 CFR 63.174(c)(1)(ii)]

(iii) The Permittee may switch alternatives described in 40 CFR 63.174(c)(1)(i) and 40 CFR 63.174(c)(1)(ii) at the end of the current monitoring period he is in, provided that it is reported as required in 40 CFR 63.182 and begin the new alternative in annual monitoring. The initial monitoring in the new alternative shall be completed no later than 12 months after reporting the switch. [40 CFR 63.174(c)(1)(iii)]

(31) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.174(g) and 40 CFR 63.171. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 63.174(d)]

(32) Any connector that is designated, as described in 40 CFR 63.181(b)(7)(i) as an unsafe-to-monitor connector is exempt from the requirements of 40 CFR 63.174(a) if: [40 CFR 63.174(f)]

(i) The Permittee determines that the connector is unsafe to monitor because personnel would be exposed to an immediate danger as a result of complying with 40 CFR 63.174(a) through 40 CFR 63.174(e); and [40 CFR 63.174(f)(1)]

(ii) The Permittee has a written plan that requires monitoring of the connector as frequently as practicable during safe to monitor periods, but not more frequently than the periodic schedule otherwise applicable. [40 CFR 63.174(f)(2)]

(33) Any connector that is designated, as described in 40 CFR 63.181(b)(7)(iii), as an unsafe-to-repair connector is exempt from the requirements of 40 CFR 63.174(a), 40 CFR 63.174(d), and 40 CFR 63.174(e) if:

(i) The Permittee determines that repair personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 63.174(d); and [40 CFR 63.174(g)(1)]

(ii) The connector will be repaired before the end of the next scheduled process unit shutdown. [40 CFR 63.174(g)(2)]

(34) INACCESSIBLE CONNECTORS.

(i) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of 40 CFR 63.174(a) and 40 CFR 63.174(c). [40 CFR 63.174(h)(1)]

(ii) An inaccessible connector is one that is:

(A) Buried [40 CFR 63.174(h)(1)(i)];

(B) Insulated in a manner that prevents access to the connector by a monitor probe [40 CFR 63.174(h)(1)(ii)];

(C) Obstructed by equipment or piping that prevents access to the connector by a monitor probe [40 CFR 63.174(h)(1)(iii)];

(D) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to connectors up to 7.6 meters (25 feet) above the ground [40 CFR 63.174(h)(1)(iv)];

(E) Inaccessible because it would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold [40 CFR 63.174(h)(1)(v)]; or

(F) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment. [40 CFR 63.174(h)(1)(vi)]

(ii) If any inaccessible or ceramic or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 63.171 and 40 CFR 63.174(g). [40 CFR 63.174(h)(2)]

(iii) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 63.174(h)(3)]

(35) For use in determining the monitoring frequency, as specified in 40 CFR 63.174(b), the percent leaking connectors shall be calculated as specified in 40 CFR 63.174(i)(1) and 40 CFR 63.174(i)(2). [40 CFR 63.174(i)]

(i) For the first monitoring period, use the following equation: [40 CFR 63.174(i)(1)]

$\%\ C_L = C_L/(C_t + C_C) \times 100$

where:

$\%\ C_L$= Percent leaking connectors as determined through periodic monitoring required in 40 CFR 63.174(a) and 40 CFR 63.174(b).

C_L= Number of connectors measured at 500 parts per million or greater.

C_t= Total number of monitored connectors in the process unit.

C_C= Optional credit for removed connectors = 0.67 × net (i.e., total removed—total added) number of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C= 0.

(ii) For subsequent monitoring periods, use the following equation [40 CFR 63.174(i)(2)]:

$\% C_L = [(C_L - CAN)/(C_t + C_C)] \times 100$

where:

$\% C_L$= Percent leaking connectors as determined through periodic monitoring required in 40 CFR 63.174(a) and 40 CFR 63.174(b).

C_L= Number of connectors, including nonrepairables, measured at 500 parts per million or greater.

C_{AN}= Number of allowable nonrepairable connectors, as determined by monitoring required in 40 CFR 63.174(b)(3) and 40 CFR 63.174(c), not to exceed 2 percent of the total connector population, C_t.

C_t= Total number of monitored connectors, including nonrepairables, in the process unit.

C_C= Optional credit for removed connectors = 0.67 × net number (i.e., total removed—total added) of connectors in organic hazardous air pollutants service removed from the process unit after the compliance date set forth in the applicable subpart for existing process units, and after the date of initial start-up for new process units. If credits are not taken, then C_C= 0.

(36) PUMPS, VALVES, CONNECTORS, AND AGITATORS IN HEAVY LIQUID SERVICE; INSTRUMENTATION SYSTEMS; AND PRESSURE RELIEF DEVICES IN LIQUID SERVICE. Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in 40 CFR 63.180(b) if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in 40 CFR 63.169(c) and 40 CFR 63.169(d), it is not necessary to monitor the system for leaks by the method specified in 40 CFR 63.180(b). [40 CFR 63.169(a)]

(37) If an instrument reading of 10,000 parts per million or greater for agitators, 2,000 parts per million or greater for pumps, or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected. [40 CFR 63.169(b)]

(38) REPAIRS.

(i) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected. [40 CFR 63.169(c)]

(ii) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 63.169(c)(2)]

(iii) For equipment identified in 40 CFR 63.169(a) that is not monitored by the method specified in 40 CFR 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure. [40 CFR 63.169(c)(3)]

(iv) First attempts at repair include, but are not limited to, the practices described under 40 CFR 63.163(c)(2) and 40 CFR 63.168(g), for pumps and valves, respectively. [40 CFR 63.169(d)]

(b) Testing Requirements

[25 PA Code §139]

(1) Monitoring shall comply with Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(b)(1)]

(2) Except as provided for in 40 CFR 63.180(b)(2)(ii), the detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in Section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid not each individual VOC in the stream. For process streams that contain nitrogen, water, air, or other inerts which are not organic HAP's or VOC's, the average stream response factor may be calculated on an inert-free basis. The response factor may be determined at any concentration for which monitoring for leaks will be conducted. [40 CFR 63.180(b)(2)(i)]

(3) If no instrument is available at the plant site that will meet the performance criteria specified in 40 CFR 63.180(b)(2)(i), the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in 40 CFR 63.180(b)(2)(i). [40 CFR 63.180(b)(2)(ii)]

(4) The instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(b)(3)]

(5) Calibration gases shall be:

(i) Zero air (less than 10 parts per million of hydrocarbon in air) [40 CFR 63.180(b)(4)(i)]; and

(ii) Mixtures of methane in air at the concentrations specified in 40 CFR 63.180(b)(4)(ii)(A) through 40 CFR 63.180(b)(4)(ii)(C). A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in 40 CFR 63.180(b)(2)(i). In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air. [40 CFR 63.180(b)(4)(ii)]

(iii) A mixture of methane or other compounds, as applicable, and air at a concentration of approximately, but less than, 10,000 parts per million methane for agitators; 1,000 parts per million for pumps; and 500 parts per million for all other equipment, except as provided in 40 CFR 63.180(b)(5)(iii). [40 CFR 63.180(b)(4)(ii)(C)]

(6) The instrument may be calibrated at a higher methane concentration than the concentration specified for that piece of equipment. The concentration of the calibration gas may exceed the concentration specified as a leak by no more than 2,000 parts per million. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 parts per million above the concentration specified as a leak and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 parts per million. If only one scale on an instrument will be used during monitoring, the Permittee need not calibrate the scales that will not be used during that day's monitoring. [40 CFR 63.180(b)(4)(iii)]

(7) When equipment is monitored for compliance as required in 40 CFR 63.164(i), 63.165(a), and 63.172(f) or when equipment subject to a leak definition of 500 ppm is monitored for leaks as required by subpart H of 40 CFR 63, the Permittee may elect to adjust or not to adjust the instrument readings for background. If the Permittee elects to not adjust instrument readings for background, the Permittee shall monitor the equipment according to the procedures specified in 40 CFR 63.180(b)(1) through 40 CFR 63.180(b)(4). In such case, all instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If the Permittee elects to adjust instrument readings for background, the Permittee shall monitor the equipment according to the procedures specified in 40 CFR 63.180(c)(1) through 40 CFR 63.180(c)(4). [40 CFR 63.180(c)]

(i) The requirements of 40 CFR 63.180(b)(1) through 40 CFR 63.180(b)(4) shall apply. [40 CFR 63.180(c)(1)]

(ii) The background level shall be determined, using the same procedures that will be used to determine whether the equipment is leaking. [40 CFR 63.180(c)(2)]

(iii) The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible as described in Method 21 of 40 CFR part 60, appendix A. [40 CFR 63.180(c)(3)]

(iv) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 parts per million for determining compliance. [40 CFR 63.180(c)(4)]

(8) Each piece of equipment within a process unit that can reasonably be expected to contain equipment in organic HAP service is presumed to be in organic HAP service unless an owner or operator demonstrates that the piece of equipment is not in organic HAP service. For a piece of equipment to be considered not in organic HAP service, it must be determined that the percent organic HAP content can be reasonably expected not to exceed 5 percent by weight on an annual average basis. For purposes of determining the percent organic HAP content of the process fluid that is contained in or contacts equipment, Method 18 of 40 CFR part 60, appendix A shall be used. [40 CFR 63.180(d)(1)]

(9) A Permittee may use good engineering judgment rather than the procedures in 40 CFR 63.180(d)(1) to determine that the percent organic HAP content does not exceed 5 percent by weight. When A Permittee and the EPA Administrator and AMS do not agree on whether a piece of equipment is not in organic HAP service, however, the procedures in 40 CFR 63.180(d)(1) shall be used to resolve the disagreement. [40 CFR 63.180(d)(2)(i)]

(10) Conversely, the Permittee may determine that the organic HAP content of the process fluid does not exceed 5 percent by weight by, for example, accounting for 98 percent of the content and showing that organic HAP is less than 3 percent. [40 CFR 63.180(d)(2)(ii)]

(11) If a Permittee determines that a piece of equipment is in organic HAP service, the determination can be revised after following the procedures in paragraph 40 CFR 63.180(d)(1), or by documenting that a change in the process or raw materials no longer causes the equipment to be in organic HAP service. [40 CFR 63.180(d)(3)]

(12) Samples used in determining the percent organic HAP content shall be representative of the process fluid that is contained in or contacts the equipment. [40 CFR 63.180(d)(4)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitoring shall be performed when the equipment is in organic HAP service, in use with an acceptable surrogate volatile organic compound which is not an organic HAP, or is in use with any other detectable gas or vapor. [40 CFR 63.180(b)(5)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of more than one process unit may comply with the recordkeeping requirements for these process units in one recordkeeping system if the system identifies each record by process unit and the program being implemented (e.g., quarterly monitoring, quality improvement) for each type of equipment. All records and information required by this section shall be maintained in a manner that can be readily accessed at the plant site. This could include physically locating the records at the plant site or accessing the records from a central location by computer at the plant site. [40 CFR 63.181(a)]

(2) The following information pertaining to all equipment in each process unit subject to the requirements in 40 CFR 63.162 through 63.174 shall be recorded: [40 CFR 63.181(b)]

(i) A list of identification numbers for subject equipment (except connectors exempt from monitoring and recordkeeping identified in 40 CFR 63.174 and instrumentation systems). Connectors need not be individually identified if all connectors in a designated area or length of pipe are identified as a

group, and the number of connectors subject is indicated. With respect to connectors, the list shall be complete no later than the completion of the initial survey required by 40 CFR 63.174(b)(1) or 40 CFR 63.174(b)(2). [40 CFR 63.181(b)(1)(i)]

(ii) A schedule by process unit for monitoring connectors subject to the provisions of 40 CFR 63.174(a) and valves subject to the provisions of 40 CFR 63.168(d). [40 CFR 63.181(b)(1)(ii)]

(iii) Physical tagging of the equipment to indicate that it is in organic HAP service is not required. Equipment may be identified on a plant site plan, in log entries, or by other appropriate methods. [40 CFR 63.181(b)(1)(iii)]

(iv) A list of identification numbers for equipment that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.163(g), 40 CFR 63.164(h), 40 CFR 63.165(c), or 40 CFR 63.173(f). [40 CFR 63.181(b)(2)(i)]

(v) A list of identification numbers for compressors that the Permittee elects to designate as operating with an instrument reading of less than 500 parts per million above background, under the provisions of 40 CFR 63.164(i). [40 CFR 63.181(b)(2)(ii)]

(vi) Identification of surge control vessels or bottoms receivers that the Permittee elects to equip with a closed-vent system and control device, under the provisions of 40 CFR 63.170. [40 CFR 63.181(b)(2)(iii)]

(vii) A list of identification numbers for pressure relief devices subject to the provisions in 40 CFR 63.165(a). [40 CFR 63.181(b)(3)(i)]

(viii) A list of identification numbers for pressure relief devices equipped with rupture disks, under the provisions of 40 CFR 63.165(d). [40 CFR 63.181(b)(3)(ii)]

(ix) Identification of instrumentation systems subject to 40 CFR 63 Subpart H. Individual components in an instrumentation system need not be identified. [40 CFR 63.181(b)(4)]

(x) Identification of screwed connectors subject to the requirements of 40 CFR 63.174(c)(2). Identification can be by area or grouping as long as the total number within each group or area is recorded. [40 CFR 63.181(b)(5)]

(xi) The following information shall be recorded for each dual mechanical seal system:

(A) Design criteria required in 40 CFR 63.163(e)(6)(i), 63.164(e)(2), and 63.173(d)(6)(i) and an explanation of the design criteria; and [40 CFR 63.181(b)(6)(i)]

(B) Any changes to these criteria and the reasons for the changes. [40 CFR 63.181(b)(6)(ii)]

(xii) The following information pertaining to all pumps subject to the provisions of 40 CFR 63.163(j), valves subject to the provisions of 40 CFR 63.168(h) and 40 CFR 63.168(i), agitators subject to the provisions of 40 CFR 63.173(h) through 40 CFR 63.173(j), and connectors subject to the provisions of 40 CFR 63.174(f) and 40 CFR 63.174(g) shall be recorded: 40 CFR 63.181(b)(7)]

(A) Identification of equipment designated as unsafe to monitor, difficult to monitor, or unsafe to inspect and the plan for monitoring or inspecting this equipment. [40 CFR 63.181(b)(7)(i)]

(B) A list of identification numbers for the equipment that is designated as difficult to monitor, an explanation of why the equipment is difficult to monitor, and the planned schedule for monitoring this equipment. [40 CFR 63.181(b)(7)(ii)]

(C) A list of identification numbers for connectors that are designated as unsafe to repair and an explanation why the connector is unsafe to repair. [40 CFR 63.181(b)(7)(iii)]

(xiii) A list of valves removed from and added to the process unit, as described in 40 CFR 63.168(e)(1), if the net credits for removed valves is expected to be used. [40 CFR 63.181(b)(8)(i)]

(xiv) A list of connectors removed from and added to the process unit, as described in 40 CFR 63.174(i)(1), and documentation of the integrity of the weld for any removed connectors, as required in 40 CFR 63.174(j). This is not required unless the net credits for removed connectors is expected to be used. [40 CFR 63.181(b)(8)(ii)]

(3) For visual inspections of equipment (e.g., 40 CFR 63.163(b)(3), 40 CFR 63.163(e)(4)(i)), the Permittee shall document that the inspection was conducted and the date of the inspection. The Permittee shall maintain records as specified in 40 CFR 63.181(d) for leaking equipment identified in this inspection. These records shall be retained for 5 years. [40 CFR 63.181(c)]

(4) When each leak is detected, the following information shall be recorded and kept for 5 years:

(i) The instrument and the equipment identification number and the operator name, initials, or identification number. [40 CFR 63.181(d)(1)]

(ii) The date the leak was detected and the date of first attempt to repair the leak. [40 CFR 63.181(d)(2)]

(iii) The date of successful repair of the leak. [40 CFR 63.181(d)(3)]

(iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable. [40 CFR 63.181(d)(4)]

(v) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak. [40 CFR 63.181(d)(5)]

(A) The Permittee may develop a written procedure that identifies the conditions that justify a delay of repair. The written procedures may be included as part of the startup/shutdown/malfunction plan, required by 40 CFR 63.6(e)(3), for the source or may be part of a separate document that is maintained at the plant site. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure. [40 CFR 63.181(d)(5)(i)]

(B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion. [40 CFR 63.181(d)(5)(ii)]

(vi) Dates of process unit shutdowns that occur while the equipment is unrepaired. [40 CFR 63.181(d)(6)]

(vii) Identification, either by list, location (area or grouping), or tagging of connectors that have been opened or otherwise had the seal broken since the last monitoring period required in 40 CFR 63.174(b), as described in 40 CFR 63.174(c)(1), unless the Permittee elects to comply with the provisions of 40 CFR 63.174(c)(1)(ii). [40 CFR 63.181(d)(7)(i)]

(viii) The date and results of monitoring as required in 40 CFR 63.174(c). If identification of connectors that have been opened or otherwise had the seal broken is made by location under 40 CFR 63.181(d)(7)(i), then all connectors within the designated location shall be monitored. [40 CFR 63.181(d)(7)(ii)]

(ix) Copies of the periodic reports as specified in 40 CFR 63.182(d), if records are not maintained on a computerized database capable of generating summary reports from the records. [40 CFR 63.181(d)(9)]

(5) The dates and results of each compliance test required for compressors subject to the provisions in 40 CFR 63.164(i) and the dates and results of the monitoring following a pressure release for each pressure relief device subject to the provisions in 40 CFR 63.165(a) and 40 CFR 63.165(b). The results shall include: [40 CFR 63.181(f)]

(i) The background level measured during each compliance test. [40 CFR 63.181(f)(1)]

(ii) The maximum instrument reading measured at each piece of equipment during each compliance test. [40 CFR 63.181(f)(2)]

(6) The Permittee shall maintain records of the information specified in 40 CFR 63.181(g)(1) through 40 CFR 63.181(g)(3) for closed-vent systems and control devices subject to the provisions of 40 CFR 63.172. The records specified in 40 CFR 63.181(g)(1) shall be retained for the life of the equipment. The records specified in 40 CFR 63.181(g)(2) and 40 CFR 63.181(g)(3) shall be retained for 5 years. [40 CFR 63.181(g)]

(i) The design specifications and performance demonstrations specified in 40 CFR 63.181(g)(1)(i) through 40 CFR 63.181(g)(1)(iv). [40 CFR 63.181(g)(1)]

(A) Detailed schematics, design specifications of the control device, and piping and instrumentation diagrams. [40 CFR 63.181(g)(1)(i)]

(B) The dates and descriptions of any changes in the design specifications. [40 CFR 63.181(g)(1)(ii)]

(C) The flare design (i.e., steam-assisted, air-assisted, or non-assisted) and the results of the compliance demonstration required by 40 CFR 63.11(b) of subpart A of 40 CFR 63 Subpart H. [40 CFR 63.181(g)(1)(iii)]

(D) A description of the parameter or parameters monitored, as required in 40 CFR 63.172(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 63.181(g)(1)(iv)]

(ii) Records of operation of closed-vent systems and control devices, as specified in 40 CFR 63.181(g)(2)(i) through 40 CFR 63.181(g)(2)(iii). [40 CFR 63.181(g)(2)]

(A) Dates and durations when the closed-vent systems and control devices required in 40 CFR 63.163 through 40 CFR 63.166, and 40 CFR 63.170 are not operated as designed as indicated by the monitored parameters, including periods when a flare pilot light system does not have a flame. [40 CFR 63.181(g)(2)(i)]

(B) Dates and durations during which the monitoring system or monitoring device is inoperative. [40 CFR 63.181(g)(2)(ii)]

(C) Dates and durations of start-ups and shutdowns of control devices required in 40 CFR 63.163 through 40 CFR 63.166, and 40 CFR 63.170. [40 CFR 63.181(g)(2)(iii)]

(iii) Records of inspections of closed-vent systems subject to the provisions of 40 CFR 63.172, as specified CFR 63.181(g)(3)(i) and 40 CFR 63.181(g)(3)(ii). [40 CFR 63.181(g)(3)]

(A) For each inspection conducted in accordance with the provisions of 40 CFR 63.172(f)(1) or 40 CFR 63.172(f)(2) during which no leaks were detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 63.181(g)(3)(i)]

(B) For each inspection conducted in accordance with the provisions of 40 CFR 63.172(f)(1) or 40 CFR 63.172(f)(2) during which leaks were detected, the information specified in 40 CFR 63.181(d) shall be recorded. [40 CFR 63.181(g)(3)(ii)]

(7) Each Permittee of a process unit subject to the requirements of 40 CFR 63.175 and 40 CFR 63.176 shall maintain the records specified in 40 CFR 63.181(h)(1) through 40 CFR 63.181(h)(9) for the period of the quality improvement program for the process unit. [40 CFR 63.181(h)]

(i) For the Permittee who elects to use a reasonable further progress quality improvement program, as specified in 40 CFR 63.175(d): [40 CFR 63.181(h)(1)]

(A) All data required in 40 CFR 63.175(d)(2). [40 CFR 63.181(h)(1)(i)]

(B) The percent leaking valves observed each quarter and the rolling average percent reduction observed in each quarter. [40 CFR 63.181(h)(1)(ii)]

(C) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(d). [40 CFR 63.181(h)(1)(iii)]

(ii) If the Permittee elects to use a quality improvement program of technology review and improvement, as specified in 40 CFR 63.175(e): [40 CFR 63.181(h)(2)]

(A) All data required in 40 CFR 63.175(e)(2). [40 CFR 63.181(h)(2)(i)]

(B) The percent leaking valves observed each quarter. [40 CFR 63.181(h)(2)(ii)]

(C) Documentation of all inspections conducted under the requirements of 40 CFR 63.175(e)(4), and any recommendations for design or specification changes to reduce leak frequency. [40 CFR 63.181(h)(2)(iii)]

(D) The beginning and ending dates while meeting the requirements of 40 CFR 63.175(e). [40 CFR 63.181(h)(2)(iv)]

(iii) If the Permittee is subject to the requirements of the pump quality improvement program as specified in 40 CFR 63.176: [40 CFR 63.181(h)(3)]

(A) All data required in 40 CFR 63.176(d)(2) [40 CFR 63.181(h)(3)(i)].

(B) The rolling average percent leaking pumps [40 CFR 63.181(h)(3)(ii)].

(C) Documentation of all inspections conducted under the requirements of 40 CFR 63.176(d)(4), and any recommendations for design or specification changes to reduce leak frequency. [40 CFR 63.181(h)(3)(iii)]

(D) The beginning and ending dates while meeting the requirements of 40 CFR 63.176(d). [40 CFR 63.181(h)(3)(iv)]

(iv) If a leak is not repaired within 15 calendar days after discovery of the leak, the reason for the delay and the expected date of successful repair. [40 CFR 63.181(h)(4)]

(v) Records of all analyses required in 40 CFR 63.175(e) and 40 CFR 63.176(d). The records will include the following: [40 CFR 63.181(h)(5)]

(A) A list identifying areas associated with poorer than average performance and the associated service characteristics of the stream, the operating conditions and maintenance practices. [40 CFR 63.181(h)(5)(i)]

(B) The reasons for rejecting specific candidate superior emission performing valve or pump technology from performance trials. [40 CFR 63.181(h)(5)(ii)]

(C) The list of candidate superior emission performing valve or pump technologies, and documentation of the performance trial program items required under 40 CFR 63.175(e)(6)(iii) and 63.176(d)(6)(iii). [40 CFR 63.181(h)(5)(iii)]

(D) The beginning date and duration of performance trials of each candidate superior emission performing technology. [40 CFR 63.181(h)(5)(iv)]

(vi) All records documenting the quality assurance program for valves or pumps as specified in 40 CFR 63.175(e)(7) and 63.176(d)(7). [40 CFR 63.181(h)(6)]

(vii) Records indicating that all valves or pumps replaced or modified during the period of the quality improvement program are in compliance with the quality assurance requirements in 40 CFR 63.175(e)(7) and 40 CFR 63.176(d)(7). [40 CFR 63.181(h)(7)]

(viii) Records documenting compliance with the 20 percent or greater annual replacement rate for pumps as specified in 40 CFR 63.176(d)(8). [40 CFR 63.181(h)(8)]

(ix) Information and data to show the corporation has fewer than 100 employees, including employees providing professional and technical contracted services. [40 CFR 63.181(h)(9)]

(8) The Permittee shall comply with the requirements of either 40 CFR 63.181(i)(1) or 40 CFR 63.181(i)(2), as provided in 40 CFR 63.181(i)(3). [40 CFR 63.181(i)]

(i) Retain information, data, and analyses used to determine that a piece of equipment is in heavy liquid service. [40 CFR 63.181(i)(1)]

(ii) When requested by the EPA Administrator and AMS, demonstrate that the piece of equipment or process is in heavy liquid service. [40 CFR 63.181(i)(2)]

(iii) A determination or demonstration that a piece of equipment or process is in heavy liquid service shall include an analysis or demonstration that the process fluids do not meet the definition of "in light liquid service." Examples of information that could document this include, but are not limited to, records of chemicals purchased for the process, analyses of process stream composition, engineering calculations, or process knowledge. [40 CFR 63.181(i)(3)]

(9) Identification, either by list, location (area or group) of equipment in organic HAP service less than 300 hours per year within a process unit under 40 CFR 63.160. [40 CFR 63.181(j)]

(10) If the Permittee chooses to comply with the requirements of 40 CFR 63.179, they shall maintain the following records: [40 CFR 63.181(k)]

(i) Identification of the process unit(s) and the organic HAP's they handle. [40 CFR 63.181(k)(1)]

(ii) A schematic of the process unit, enclosure, and closed-vent system. [40 CFR 63.181(k)(2)]

(iii) A description of the system used to create a negative pressure in the enclosure to ensure that all emissions are routed to the control device. [40 CFR 63.181(k)(3)]

(e) Reporting Requirements

(1) The Permittee shall submit the following periodic reports. [40 CFR 63.182(d)]

(i) A report containing the information in 40 CFR 63.182(d)(2), 40 CFR 63.182(d)(3), and 40 CFR 63.182(d)(4) shall be submitted semiannually. Each semiannual report shall cover the 6-month period following the preceding period. [40 CFR 63.182(d)(1)]

(ii) For each process unit complying with the provisions of 40 CFR 63.163 through 40 CFR 63.174, the summary information listed in 40 CFR 63.182(d)(2)(i) through 40 CFR 63.182(d)(2)(xvi) for each monitoring period during the 6-month period. [40 CFR 63.182(d)(2)]

(A) The number of valves for which leaks were detected as described in 40 CFR 63.168(b), the percent leakers, and the total number of valves monitored; [40 CFR 63.182(d)(2)(i)]

(B) The number of valves for which leaks were not repaired as required in 40 CFR 63.168(f), identifying the number of those that are determined nonrepairable; [40 CFR 63.182(d)(2)(ii)]

(C) The number of pumps for which leaks were detected as described in 40 CFR 63.168(b), the percent leakers, and the total number of pumps monitored; [40 CFR 63.182(d)(2)(iii)]

(D) The number of pumps for which leaks were not repaired as required in 40 CFR 63.168(c); [40 CFR 63.182(d)(2)(iv)]

(E) The number of compressors for which leaks were detected as described in 40 CFR 63.163(c); [40 CFR 63.182(d)(2)(v)]

(F) The number of compressors for which leaks were not repaired as required in 40 CFR 63.164(g); [40 CFR 63.182(d)(2)(vi)]

(G) The number of agitators for which leaks were detected as described in 40 CFR 63.173(a) and 40 CFR 63.173(b); [40 CFR 63.182(d)(2)(vii)]

(H) The number of agitators for which leaks were not repaired as required in 40 CFR 63.173(c); [40 CFR 63.182(d)(2)(viii)]

(I) The number of connectors for which leaks were detected as described in 40 CFR 63.174(a), the percent of connectors leaking, and the total number of connectors monitored; [40 CFR 63.182(d)(2)(ix)]

(J) The number of connectors for which leaks were not repaired as required in 40 CFR 63.174(d), identifying the number of those that are determined nonrepairable; [40 CFR 63.182(d)(2)(xi)]

(K) The facts that explain any delay of repairs and, where appropriate, why a process unit shutdown was technically infeasible. [40 CFR 63.182(d)(2)(xiii)]

(L) The results of all monitoring to show compliance with 40 CFR 63.164(i), 40 CFR 63.165(a), and 40 CFR 63.172(f) conducted within the semiannual reporting period. [40 CFR 63.182(d)(2)(xiv)]

(M) If applicable, the initiation of a monthly monitoring program under 40 CFR 63.168(d)(1)(i), or a quality improvement program under either 40 CFR 63.175 or 40 CFR 63.176. [40 CFR 63.182(d)(2)(xv)]

(N) If applicable, notification of a change in connector monitoring alternatives as described in 40 CFR 63.174(c)(1). [40 CFR 63.182(d)(2)(xvi)]

(O) If applicable, the compliance option that has been selected under 40 CFR 63.172(n). [40 CFR 63.182(d)(2)(xvii)]

9. Group 08 - Equipment VOC Leak Components Not Subject to NSPS or NESHAP

[25 Pa Code 129.58, Case-by-case RACT, 25 Pa Code §§129.91-129.95; AMR V Section XIII.A.]

Refer to Summary Table in Section D.7. that summarizes leak detection and repair regulatory applicabilities for individual components within each process unit of the refinery.

(a) Work Practice Standards

(1) The Permittee shall not allow VOC to be emitted in liquid state at the point of discharge into the atmosphere from leaking pumps, valves, compressors, safety pressure relief devices, flanges, gaskets, seals, connections, joints, fitting or other process equipment. [AMR V. Sec. XIII.A.]

(2) For Piping components associated with crude oil and recovered oil tanks (P-594, P-603, P-604, P-579, P-587, P-588, P-590, P-601, P-602, P-012, P-135, P-521, and P-546), the permittee shall comply with the following. For each pump, valve, and sampling connection that operates in organic liquids service for at least 300 hours per year, comply with 40 CFR 63.2346(l) and the applicable requirements under subpart TT of this part (control level 1), subpart UU of this part (control level 2), or subpart H of this part. Pumps, valves, and sampling connectors that are insulated to provide protection against persistent sub-freezing temperatures are subject to the "difficult to monitor" provisions in the applicable subpart selected by the owner or operator.[40 CFR 63.2346(c)]

(2) Repair leaking refinery components which have a VOC concentration exceeding 10,000 ppm. [25 PA Code §129.58(a)(2)]

(3) Repair and retest the leaking refinery components as soon as possible. Every reasonable effort shall be made to repair each leak within 15 days unless a refinery unit shutdown is required to make the necessary repair. [25 PA Code §129.58(a)(3)]

(4) Identify leaking refinery components which cannot be repaired until the unit is shutdown for turnaround. [25 PA Code §129.58(a)(4)]

(5) Except for safety pressure relief valves and fittings on all valves 1 inch or smaller, do not install or operate a valve at the end of a pipe or line containing VOCs unless the pipe or line is sealed with a second valve, a blind flange, a plug or a cap. The sealing device may be removed only when a sample is being taken or during maintenance operations. [25 PA Code §129.58(b)]

(6) Pipeline valves and pressure relief valves in gaseous VOC service shall be marked in some manner that will be readily obvious to both refinery personnel performing monitoring and AMS. [25 PA Code §129.58(c)]

(7) The Permittee shall use the definitions provided in the Federal New Source Performance Standards (NSPS) to designate streams subject to monitoring in order to comply with 25 PA Code §129.58. The testing and monitoring requirements specified in 25 PA Code §129.58 are applied to sources that handle gas or "light" liquids (meeting the definition of 40 CFR 60.485(e)). Heavy liquid shall be monitored based on visual, audible, or olfactory means of detection. A source is considered to be in VOC service if it contacts or contains a gas or liquid that has at least 10% VOC by weight. [AMS Letter dated May 30, 2000, 25 PA Code §129.58(g)]

(b) Testing Requirements

[25 PA Code §139]

(1) For determining the magnitude of VOC leaks from former petroleum refinery equipment, test methods and procedures shall be equivalent to those specified in EPA Method 21 (40 CFR 60, Appendix A) or as specified in 25 PA §139.4(5). Methane and ethane may be excluded from this measurement. If

methane and ethane are excluded, the measurement of methane and ethane together shall be reported. [25 PA §139.14(b)(4)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Check yearly, by the method referenced in Section D.9.(b)(1), pump seals and pipeline valves in light liquid service. [25 PA Code §129.58(d)(1)(i)]

(2) Check quarterly by the method referenced in Section D.9.(b)(1), compressor seals, pipeline valves in gaseous service, and pressure relief valves in gaseous service. [25 Pa Code §129.58(d)(1)(ii)]

(3) Check monthly, by visual methods, all pump seals. [25 PA Code §129.58(d)(1)(iii)]

(4) For light liquid components, check within 24 hours, by the method referenced in Section D.9.(b)(1), a pump seal from which VOC liquids are observed to be dripping. [25 PA Code §129.58(d)(1)(iv)]

(5) Check, by the method referenced in Section D.9.(b)(1), a relief valve within 24 hours after it has vented to the atmosphere. [25 PA Code §129.58(d)(1)(v)]

(6) Check within 72 hours after repair, by the method referenced in Section D.9.(b)(1), a refinery component that was found leaking. [25 PA Code §129.58(d)(1)(vi)]

(7) Upon the detection of a leaking refinery component, affix a weatherproof and readily visible tag, bearing an identification number and the date upon which the leak is located to the leaking refinery component. This tag shall remain in place until the leaking refinery component is repaired. [25 PA Code §129.58(d)(3)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Maintain a leaking refinery components' monitoring log which shall contain, at a minimum, the following data:

(i) The name of the process unit where the refinery component is located. [25 PA Code §129.58(e)(1)(i)]

(ii) The type of refinery component— for example, valve, seal. [25 PA Code §129.58(e)(1)(ii)]

(iii) The tag number of refinery component. [25 PA Code §129.58(e)(1)(iii)]

(iv) The dates on which the leaking refinery component was discovered and repaired. [25 PA Code §129.58(e)(1)(iv)]

(v) The date and instrument reading of the recheck procedure after a leaking refinery component was repaired. [25 PA Code §129.58(e)(1)(v)]

(vi) A record of the calibration of the monitoring instrument. [25 PA Code §129.58(e)(1)(vi)]

(vii) Those leaks that cannot be repaired until turnaround. [25 PA Code §129.58(e)(1)(vii)]

(viii) The total number of refinery components checked and the total number of refinery components found leaking. [25 PA Code §129.58(e)(1)(viii)]

(e) Reporting Requirements

(1) The Permittee, upon completion of each yearly and quarterly monitoring procedure, shall do the following:

(i) Submit a report to AMS by the last business day of January, April, July, and October that lists all leaking refinery components that were located during the previous calendar quarter but not repaired within 15 days, all leaking refinery components awaiting unit turnaround, the total number of refinery components inspected and the total number of refinery components found leaking. [25 PA Code §129.58(f)(1)(i)]

(ii) Submit a signed statement with the report attesting to the fact that monitoring and repairs were performed as stipulated in the monitoring program. [25 PA Code §129.58(f)(1)(ii)]

(f) Case-by-case RACT, 25 Pa Code §§129.91-129.95

(1) The Permittee shall utilize a fugitive emission LDAR program for all valves, pumps, flanges, and compressors in VOC service. For any source not covered under an existing LDAR program, monitoring shall be conducted on a quarterly basis for equipment in gaseous service and on an annual basis for equipment in liquid service. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2K]

10. Group 09 – Cooling Towers

Girard Point equipment P125, P126, P127, and P128. Point Breeze equipment numbered P632, P633, P634, and P635.

(a) Emission Limitations

(1) Particulate Matter emission from each Cooling Tower shall not exceed 40 lbs/hr [AMR II Sec VII]

(b) Work Practice Standards

(1) The Permittee shall not use chromium-based water treatment chemicals in any affected industrial process cooling tower (IPCT). [40 CFR 63.402]

(2) Each cooling tower and equipments shall be installed, maintained, and operated in accordance with manufacturer's specifications.

(c) Testing Requirements

[25 PA Code §139]

(1) No routine sampling, or analysis is required. However, In accordance with section 114 of the Act, AMS can require cooling water sample analysis of an IPCT if there is information to indicate that the IPCT is not in compliance with the requirements of 40 CFR 63.402. The Permittee of an IPCT may demonstrate compliance through recordkeeping in accordance with 40 CFR 63.404(d) in lieu of a water sample analysis. If cooling water sample analysis is required: [40 CFR 63.404]

(i) The water sample analysis shall be conducted in accordance with Method 7196, Chromium, Hexavalent (Colorimetric), contained in the Third Edition of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,"

EPA Publication SW-846, (November 1986) and its Revision I, (December 1987) which are available from the Government Printing Office, Superintendent of Documents, Washington, DC 20402, (202) 783-3238 (document number 955-001-00000-1; or Method 3500-Cr D, Colorimetric Method, contained in the 18th Edition of "Standard Methods for the Examination of Water and Wastewater" (1992), which is available from the American Public Health Association, 1015 15th Street, NW., Washington, DC 20005. [40 CFR 63.404(a)]

(ii) On or after 3 months after the compliance date, a cooling water sample residual hexavalent chromium concentration equal to or less than 0.5 parts per million by weight shall indicate compliance with 40 CFR 63.402. Alternatively, the Permittee may demonstrate compliance through record keeping in accordance with 40 CFR 63.404(c). [40 CFR 63.404(b)]

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Perform daily visual inspection of water basins for presence of hydrocarbon.

(2) Utilize an inspection and maintenance/monitoring program for VOC fugitive emissions from cooling towers. [Case-by-case RACT, 25 Pa Code §§129.91-129.95, Section 2J]

(3) For P127, the Permittee who elects to comply with the requirements of 40 CFR 63.104(a) by monitoring the cooling water for the presence of one or more organic hazardous air pollutants or other representative substances whose presence in cooling water indicates a leak shall comply with the requirements specified in 40 CFR 63.104(b)(1) through 40 CFR 63.104(b)(6). The cooling water shall be monitored for total hazardous air pollutants, total volatile organic compounds, total organic carbon, one or more speciated HAP compounds, or other representative substances that would indicate the presence of a leak in the heat exchange system. [40 CFR 63.104(b). This streamlined permit condition assures compliance with 40 CFR 63.104(a)]

(i) The cooling water shall be monitored monthly for the first 6 months and quarterly thereafter to detect leaks. [40 CFR 63.104(b)(1)]

(ii) For recirculating heat exchange systems (cooling tower systems), the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 4 subpart F of 40 CFR 63. [40 CFR 63.104(b)(2)(i)]

(iii) For once-through heat exchange systems, the monitoring of speciated hazardous air pollutants or total hazardous air pollutants refers to the hazardous air pollutants listed in table 9 of subpart G of 40 CFR 63. [40 CFR 63.104(b)(2)(ii)]

(iv) The concentration of the monitored substance(s) in the cooling water shall be determined using any EPA-approved method listed in part 136 of subpart F of 40 CFR 63 as long as the method is sensitive to concentrations as low as 10 parts per million and the same method is used for both entrance and

exit samples. Alternative methods may be used upon approval by EPA. [40 CFR 63.104(b)(3)]

(v) The samples shall be collected either at the entrance and exit of each heat exchange system or at locations where the cooling water enters and exits each heat exchanger or any combination of heat exchangers. [40 CFR 63.104(b)(4)]

(vi) For samples taken at the entrance and exit of recirculating heat exchange systems, the entrance is the point at which the cooling water leaves the cooling tower prior to being returned to the process equipment and the exit is the point at which the cooling water is introduced to the cooling tower after being used to cool the process fluid. [40 CFR 63.104(b)(4)(i)]

(vii) For samples taken at the entrance and exit of once-through heat exchange systems, the entrance is the point at which the cooling water enters and the exit is the point at which the cooling water exits the plant site or chemical manufacturing process units. [40 CFR 63.104(b)(4)(ii)]

(viii) For samples taken at the entrance and exit of each heat exchanger or any combination of heat exchangers in chemical manufacturing process units, the entrance is the point at which the cooling water enters the individual heat exchanger or group of heat exchangers and the exit is the point at which the cooling water exits the heat exchanger or group of heat exchangers. [40 CFR 63.104(b)(4)(iii)]

(ix) A minimum of three sets of samples shall be taken at each entrance and exit as defined in 40 CFR 63.104(b)(4). The average entrance and exit concentrations shall then be calculated. The concentration shall be corrected for the addition of any makeup water or for any evaporative losses, as applicable. [40 CFR 63.104(b)(5)]

(x) A leak is detected if the exit mean concentration is found to be greater than the entrance mean using a one-sided statistical procedure at the 0.05 level of significance and the amount by which it is greater is at least 1 part per million or 10 percent of the entrance mean, whichever is greater. [40 CFR 63.104(b)(6)]

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep record of PM emission to demonstrate compliance with Section D.10(a)(1). Emission shall be calculated using AP-42 emission factor.

(2) To demonstrate compliance with 40 CFR 63.402, in lieu of the water sample analysis provided for in 40 CFR 63.404(a), the Permittee of each IPCT may maintain records of water treatment chemical purchases, including invoices and other documentation that includes invoices and other documentation that includes date(s) of purchase or shipment, trade name or other information to identify composition of the product, and quantity of the product. The Permittee shall maintain these records for at least five years onsite. [40 CFR 63.404(c)]

(3) The Permittee shall maintain copies of the initial notification and the notification of compliance status as required by 40 CFR 63.405 for a period of at least 5 years onsite. [40 CFR 63.405]

(4) Record daily visual inspections of cooling tower water basin in Operators Log.

(5) Records of inspection and maintenance/monitoring program for VOC fugitive emissions from cooling towers.

(f) Reporting Requirements

(1) The Permittee shall report any VOC fugitive emissions present from cooling towers during inspections and actions taken in the semiannual report. [25 Pa Code 129.92(a)(7)]

11. Group 10 – Miscellaneous process vents (Group 1) subject to 40 CFR 63 Subparts G and CC

Girard Point equipment numbered P-184 (four associated vents – vacuum unit gases at Unit 137 go to CD-006 [F-1 Heater at Unit 137]; the other three vents go to a process heater or to flare P-117 [CD-012] or flare P-118 [CD-013]), P-181 (six associated vents that go to either flare P-117 [CD-012] or flare P-118 [CD-013], and P-184 vents that go to either flare P-117 [CD-012] or flare P-118 [CD-013]. Point Breeze equipment numbered P1002.

(a) Work Practice Standards

(1) Vacuum-producing systems shall vent any volatile organic compounds emitted from the condensers, hot wells, or accumulators of the system to a boiler or process heater. The boiler or heater shall have a heat input design capacity greater than 44 MW (150 MMBTU/hr) and shall reduce emissions of organic HAP's by 98 weight-percent or to a concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent. The vent stream shall be introduced into the flame zone, or in a location such that the required percent reduction or concentration is achieved. [40 CFR 63.643(a)(2) and 40 CFR 63.643(b), 25 PA Code §129.55(c)]

(b) Non-Applicable Requirements

(1) Any boiler or process heater with a design heat input capacity greater than or equal to 44 megawatt (150 MMBTU/hr) or any boiler or process heater in which all vent streams are introduced into the flame zone is exempt from testing, monitoring, recordkeeping, and reporting. [40 CFR 63.645(d), 40 CFR 63.644(a)(3), Table 10 of 40 CFR 63, Subpart CC]

12. Group 13A – Tanks Subject to 40 CFR 63 Subpart G.

Girard Point Tanks numbered P-001, P005, P017, P018, P021, P022, P023, P024, P025, P029, and Point Breeze Tank numbered P523.

Girard Point Tanks – Refer to Group 14C. This streamlined permit condition assures compliance with 25 Pa Code 129.56 and AMR V. Sec. II. and 40 CFR 63.110(b)(1) for P-005.

Point Breeze Tank – Refer to Group 13C. This streamlined permit condition assures compliance with 25 Pa Code 129.56 and AMR V. Sec. II. and 40 CFR 63.110(b)(1) for P-523.

13. Group 13B – Internal Floating Roof Tanks subject to 40 CFR 63, Subpart CC

Girard Point Tanks numbered P012, P015, P016, P034, and P538. Point Breeze Tanks numbered P545, and P547. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) All tanks are subject to the same requirements as for Group 13C, Section D.14.(a), with the following exceptions,

(i) The following paragraphs do not apply to storage vessels at existing sources subject to subpart CC of 40 CFR 63: 40 CFR 63.119(b)(5), 40 CFR 63.119(b)(6), 40 CFR 63.119(c)(2), and 40 CFR 63.119(d)(2) (gasketed fittings). [40 CFR 63.646(c)]

(ii) When complying with the inspection requirements of 40 CFR 63.120 of subpart G of 40 CFR 63, the Permittee of storage vessels at existing sources are not required to comply with the provisions for gaskets, slotted membranes, and sleeve seals. [40 CFR 63.646(e)]

(iii) If a cover or lid is installed on an opening on a floating roof, the cover or lid shall remain closed except when the cover or lid must be open for access. [40 CFR 63.646(f)(1)]

(iv) Rim space vents are to be set to open only when the floating roof is not floating or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting. [40 CFR 63.646(f)(2)]

(v) Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 63.646(f)(3)]

(b) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) All tanks are subject to the same monitoring requirements as for Group 13C, Section D.14(c), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) All tanks are subject to the same recordkeeping requirements as for Group 13C, Section D.14(d), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

(d) Reporting Requirements

(1) All tanks are subject to the same reporting requirements as for Group 13C, Section D.14(e), with the exception of references to the fittings excluded per Section D.13(a)(1)(i).

14. Group 13C – Internal Floating Roof Tanks subject to 40 CFR 60, Subpart Kb

Girard Point Tanks P009, P010, P-012, P134, P135, P-136, P137, P159, P160, and P174. Point Breeze equipment numbered P501 and P511 P-594, P-603, and P-604. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(2) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(i) A foam-or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam-or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank. [40 CFR 60.112b(a)(1)(ii)(A)]

(ii) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous. [40 CFR 60.112b(a)(1)(ii)(B)]

(iii) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof. [40 CFR 60.112b(a)(1)(ii)(C)]

(3) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(4) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(5) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(6) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(7) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(8) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(9) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(ix)]

(b) Testing Requirements

[25 PA Code §139]

(1) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below. [40 CFR 60.116b(e)]

(i) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(ii) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(A) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(B) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(2) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the Permittee shall repair the items before filling the storage vessel. [40 CFR 60.113b(a)(1)]

(2) For vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the Permittee shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(a)(2)]

(3) For vessels equipped with a double-seal system: [40 CFR 60.113b(a)(3)]

(i) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(4) at least every 5 years; or [40 CFR 60.113b(a)(3)(i)]

(ii) Visually inspect the vessel as specified in 40 CFR 60.113b(a)(2). [40 CFR 60.113b(a)(3)(ii)]

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in 40 CFR 60.113b(a)(2) and 40 CFR 60.113b(a)(3)(ii) and at intervals no greater than 5 years in the case of vessels specified in 40 CFR 60.113b(a)(3(i). [40 CFR 60.113b(a)(4)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. The record will be kept for the life of the source. Each storage vessel with a design capacity less than 75 m^3 is exempt except for what is required in D.14(d)(2). [40 CFR 60.116b(a) and (b)]

(2) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

(4) Keep a record of each inspection performed as required by 40 CFR 60.113b (a)(1), (a)(2), (a)(3) and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings). [40 CFR 60.115b(a)(2)]

(e) Reporting Requirements

(1) Notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to have an observer present. If the inspection is not planned and the Permittee could not have known about the inspection 30 days in advance or refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(a)(5)]

(2) Furnish the EPA Administrator and AMS with a report that describes the control equipment and certifies that the control equipment meets the specifications of 40 CFR 60.112b(a)(1) and 40 CFR 60.113b(a)(1). This report shall be an attachment to the notification required by 40 CFR 60.7(a)(3). [40 CFR 60.115b(a)(1)]

(3) If any of the conditions described in 40 CFR 60.113b(a)(2) are detected during the annual visual inspection required by 40 CFR 60.113b(a)(2), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made. [40 CFR 60.115b(a)(3)]

(4) After each inspection required by 40 CFR 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in 40 CFR 60.113b(a)(3)(ii), a report shall be furnished to the EPA Administrator and AMS within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of 40 CFR 61.112b(a)(1) or 40 CFR 60.113b(a)(3) and list each repair made. [40 CFR 60.115b(a)(4)]

15. Group 14A – External Floating Roof Tanks subject to only local and State Regulations

16. Group 14B – External Floating Roof Tanks subject to 40 CFR 63, Subpart CC

Point Breeze Tanks P502, P503, P504, P507, P508, P509, P512, P513, P514, P521, P525, P526, P527, P537, P540, P541, P542, P546, P579, P587, P588, P594, P599, P600, P601, P602, P603, and P604. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) Same requirements as for Group 14C, Section D.17(a), except that the gasketed fitting requirements do not apply to this group of tanks.

(b) Testing Requirements

[25 PA Code §139]

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and

recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(3) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency. [40 CFR 60.113b(b)(1)]

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter. [40 CFR 60.113b(b)(1)(i)]

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter. [40 CFR 60.113b(b)(1)(ii)]

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of 40 CFR 60.113b(b)(1)(i) and 40 CFR 60.113b(b)(1)(ii). [40 CFR 60.113b(b)(1)(iii)]

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures: [40 CFR 60.113b(b)(2)]

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. [40 CFR 60.113b(b)(2)(i)]

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location. [40 CFR 60.113b(b)(2)(ii)]

(iii) The total surface area of each gap described in paragraph 40 CFR 60.113b(b)(2)(ii) shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance. [40 CFR 60.113b(b)(2)(iii)]

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal

diameter of the tank and compare each ratio to the respective standards in 40 CFR 60.113b(b)(4). [40 CFR 60.113b(b)(3)]

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and 40 CFR 60.113b(b)(4)(ii): [40 CFR 60.113b(b)(4)]

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface. [40 CFR 60.113b(b)(4)(i)(A)]

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 60.113b(b)(4)(i)(B)]

(ii) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in [40 CFR 60.113b(b)(2)(iii)]. [40 CFR 60.113b(b)(4)(ii)(A)]

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. [40 CFR 60.113b(b)(4)(ii)(B)]

(C) There are to be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 60.113b(b)(4)(ii)(C)]

(iii) If a failure is detected during an inspection and cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.113b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(b)(4)(iii)]

(5) Notify the EPA Administrator and AMS 30 days in advance of any gap measurements required by 40 CFR 60.113b(b)(1) to afford the EPA Administrator and AMS the opportunity to have an observer present. [40 CFR 60.113b(b)(5)]

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. [40 CFR 60.113b(b)(6)]

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the Permittee shall repair the items as necessary so that none of the conditions specified

in this paragraph exist before filling or refilling the storage vessel with VOL. [40 CFR 60.113b(b)(6)(i)]

(7) For all the inspections required by 40 CFR 60.113b(b)(6), the Permittee shall notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to inspect the storage vessel prior to refilling. If the inspection required by 40 CFR 60.113b(b)(6) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(b)(6)(ii)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall keep copies of all records required by 40 CFR 60.116b(b), for the life of the source. [40 CFR 60.116b(a)]

(2) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of this subpart other than those required by this paragraph. The records of this condition shall be kept for the life of the source. [40 CFR 60.116b(a) and (b)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(4) The Permittee shall keep a record of each gap measurement performed as required by 40 CFR 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement. [40 CFR 60.115b(b)(3)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(3)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(3)(iii)]

(e) Reporting Requirements

(1) Within 60 days of performing the seal gap measurements, the Permittee furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(2) Within 60 days of performing the seal gap measurements required by (c)(1) of this section, The Permittee shall furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(3) After each seal gap measurement that detects gaps exceeding the limitations specified by (c)(4) of this section, the Permittee shall submit a report to the EPA Administrator and AMS within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (e)(2) of this section and the date the vessel was emptied or the repairs made and date of repair. [40 CFR 60.115b(b)(4)]

(4) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

17. Group 14C – External Floating Roof Tanks subject to 40 CFR 60, Subpart Kb (or equivalent).

Girard Point Tanks P006, P155, and P162. Point Breeze Tanks P-521, P-546, P-579, P-587, P-588, P-590, P-601, P-602, P624, and P627. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications: [40 CFR 60.112b(a)(2)]

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in 40 CFR 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall. [40 CFR 60.112b(a)(2)(i)(A)]

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous

fashion except as allowed in 40 CFR 60.113b(b)(4). [40 CFR 60.112b(a)(2)(i)(B)]

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(2) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(b) Testing Requirements

[25 PA Code §139]

~~(1) Same requirements as for Group 14B, Section D.16(b).~~

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)]

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following: [40 CFR 60.116b(e)(2)]

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the EPA Administrator and AMS specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)]

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa. [40 CFR 60.116b(e)(2)(ii)]

(3) For other liquids, the vapor pressure: [40 CFR 60.116b(e)(3)]

(i) May be obtained from standard reference texts, or [40 CFR 60.116b(e)(3)(i)]

(ii) Determined by ASTM Method D2879-83; or [40 CFR 60.116b(e)(3)(ii)]

(iii) Measured by an appropriate method approved by the EPA Administrator and AMS; or [40 CFR 60.116b(e)(3)(iii)]

(iv) Calculated by an appropriate method approved by the EPA Administrator and AMS. [40 CFR 60.116b(e)(3)(iv)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

~~(1) Same requirements as for Group 14B, Section D.16(c).~~

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency. [40 CFR 60.113b(b)(1)]

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter. [40 CFR 60.113b(b)(1)(i)]

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter. [40 CFR 60.113b(b)(1)(ii)]

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of 40 CFR 60.113b(b)(1)(i) and 40 CFR 60.113b(b)(1)(ii). [40 CFR 60.113b(b)(1)(iii)]

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures: [40 CFR 60.113b(b)(2)]

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. [40 CFR 60.113b(b)(2)(i)]

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location. [40 CFR 60.113b(b)(2)(ii)]

(iii) The total surface area of each gap described in paragraph 40 CFR 60.113b(b)(2)(ii) shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance. [40 CFR 60.113b(b)(2)(iii)]

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in 40 CFR 60.113b(b)(4). [40 CFR 60.113b(b)(3)]

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and 40 CFR 60.113b(b)(4)(ii): [40 CFR 60.113b(b)(4)]

(j) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(C) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface. [40 CFR 60.113b(b)(4)(i)(A)]

(D) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope. [40 CFR 60.113b(b)(4)(i)(B)]

(ii) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(D) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in [40 CFR 60.113b(b)(2)(iii)]. [40 CFR 60.113b(b)(4)(ii)(A)]

(E) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm. [40 CFR 60.113b(b)(4)(ii)(B)]

(F) There are to be no holes, tears, or other openings in the seal or seal fabric. [40 CFR 60.113b(b)(4)(ii)(C)]

(iii) If a failure is detected during an inspection and cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the EPA Administrator and AMS in the inspection report required in 40 CFR 60.113b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible. [40 CFR 60.113b(b)(4)(iii)]

(5) Notify the EPA Administrator and AMS 30 days in advance of any gap measurements required by 40 CFR 60.113b(b)(1) to afford the EPA Administrator and AMS the opportunity to have an observer present. [40 CFR 60.113b(b)(5)]

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed. [40 CFR 60.113b(b)(6)]

(j) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the Permittee shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL. [40 CFR 60.113b(b)(6)(i)]

(7) For all the inspections required by 40 CFR 60.113b(b)(6), the Permittee shall notify the EPA Administrator and AMS in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the EPA Administrator and AMS the opportunity to inspect the storage vessel prior to refilling. If the inspection required by 40 CFR 60.113b(b)(6) is not planned and the Permittee could not have known about the inspection 30 days in advance of refilling the tank, the Permittee shall notify the EPA Administrator and AMS at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the EPA Administrator and AMS at least 7 days prior to the refilling. [40 CFR 60.113b(b)(6)(ii)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

~~(1) Same requirements as for Group 14B, Section D.16(d).~~

(1) The Permittee shall keep copies of all records required by 40 CFR 60.116b(b), for the life of the source. [40 CFR 60.116b(a)]

(2) he Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m3 is subject to no provision of this subpart other than those required by this paragraph. The records of this condition shall be kept for the life of the source. [40 CFR 60.116b(a) and (b)]

(3) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m3 but less than 151 m3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

(4) The Permittee shall keep a record of each gap measurement performed as required by 40 CFR 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement. [40 CFR 60.115b(b)(3)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(3)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(3)(iii)]

(e) Reporting Requirements

~~(1) Same requirements as for Group 14B, Section D.16(e).~~

(1) Within 60 days of performing the seal gap measurements, the Permittee furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(2) Within 60 days of performing the seal gap measurements required by (c)(1) of this section, The Permittee shall furnish the EPA Administrator and AMS with a report that contains:

(i) The date of measurement. [40 CFR 60.115b(b)(2)(i)]

(ii) The raw data obtained in the measurement. [40 CFR 60.115b(b)(2)(ii)]

(iii) The calculations described in 40 CFR 60.113b (b)(2) and (b)(3). [40 CFR 60.115b(b)(2)(iii)]

(3) After each seal gap measurement that detects gaps exceeding the limitations specified by (c)(4) of this section, the Permittee shall submit a report to the EPA Administrator and AMS within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (e)(2) of this section and the date the vessel was emptied or the repairs made and date of repair. [40 CFR 60.115b(b)(4)]

(4) The Permittee of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the EPA Administrator and AMS within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range. [40 CFR 60.116b(d)]

18. Group 15A – Group 2 Storage Tanks Petroleum Liquids Storage Tanks

Girard Point Tanks P002, P003, P019, P020, P027, P028, P030, P031, P032, P035, P036, P037, P039, P144, P146, P147, P150, P151, P153, P154, P157, P166, P167, P175, P176, P177, P178, and P179. Point Breeze Tanks P515, P516, P518, P519, P520, P529, P530, P534, P535, P551, P563, P565, P567, P571, P574, P575, P576, P577, P578, P580, P582, P584, P585, and P623. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II. for all tanks except for P-149, P-154, P-175, P-176, P-177, P-178, and P-179. These streamlined permit conditions assure compliance with 25 Pa Code 129.57 for Tank P-154.]

(a) Work Practice.

(1) Each tank shall have maximum true vapor pressure of less than 10.4 kPa (1.5 psia) and the annual average true vapor pressure shall be less than 8.3 kPa (1.2 psia).

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee may use good engineering judgment or test results to determine the stored liquid weight percent total organic HAP for purposes of group

determination. Data, assumptions, and procedures used in the determination shall be documented. [40 CFR 63.646(b)(1)]

(2) When the Permittee and the EPA Administrator and AMS do not agree on whether the annual average weight percent organic HAP in the stored liquid is above or below 4 percent for a storage vessel at an existing source, Method 18 of 40 CFR part 60, appendix A shall be used. [40 CFR 63.646(b)(2)]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Keep records of identification of each storage vessel. [40 CFR 63.655(f)(1)(i)(A)]

(2) Keep a record of any data, assumptions, and procedures used to make a Group 2 determination (e.g., the weight percent total organic HAP of the stored liquid.) [40 CFR 63.655(i)(1)(iv)]

(3) Keep readily accessible records showing the dimensions of the storage vessel and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 2 status and is in operation. [40 CFR 63.123(a)]

(d) Reporting Requirements

(1) Submit the identification of each Group 2 storage vessel each time a Notification of Compliance Status Report is submitted. [40 CFR 63.655(f)(1)(i)(A)]

19. Group 15B – Fixed Roof Tanks subject to 40 CFR 60 Subpart Kb recordkeeping requirements

Girard Point Tanks P158, P171, and P172. [These streamlined permit conditions assure compliance with 25 Pa Code 129.56 and AMR V. Sec. II.]

(a) Work Practice Standards

(1) The Permittee shall not store in each tank any volatile organic liquid with a maximum true vapor pressure equal to or greater than 5.2 kPa as stored. [40 CFR 60.112b(a)]

(b) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of each storage vessel shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of subpart J of 40 CFR 60 other than those required by this paragraph. [40 CFR 60.116b(b)]

20. Group 17 – Marine loading equipment

Girard Point P130 and CD011 (~~Flare~~ Thermal Oxidizer for P130). Point Breeze equipment numbered P636 .

(a) Work Practice Standards

(1) Equipment leaks associated with the Marine Vapor Collection and Control System (MVCACS) are applicable to the requirements of SRTF Title V Section D.2.(e) ~~Group 7, Section D.8~~. [AMS Permit Approval Letter Dated May 23, 2001, AMS Installation Permit No. 94110]

(2) For P-636, the operation of the MVCACS is limited to 2500 barrels per hour. [AMS Permit Approval Letter Dated May 23, 2001, AMS Installation Permit No. 94110]

(3) Vapors from the operation of the MVCACS shall be fed as a primary fuel to a Department approved control device the process heaters and boilers in order to achieve a minimum of 98% destruction efficiency. [AMS Permit Dated May 9, 2001, paragraph 2. This streamlined permit condition assures compliance with 29 PA Code §129.81(1)(i) and (2)]

Commented [A28]: Superseded by RACT Plan Approval IP16-000269.

(4) The vapor collection and transport system employed to carry VOCs to the vapor control system shall be maintained and operated so that it prevents the following: [29 PA Code §129.81(1)(ii)]

(i) A reading equal to or greater than 100% of the lower explosive limit (LEL), measured as propane, at 1 inch (2.5 centimeters) from all points on the perimeter of a potential leak source when measured by the method referenced in §139.14 (relating to emissions of VOCs) during loading operations. [29 PA Code §129.81(1)(ii)(A)]

(ii) Avoidable liquid leaks during loading operations. [29 PA Code §129.81(1)(ii)(B)]

(iii) Visually or audibly detectable leaks in the organic liquid cargo vessel's cargo tanks, hatch covers, storage tanks pressure/vacuum relief valves and associated vapor and liquid lines during loading. [29 PA Code §129.81(1)(ii)(C)]

(5) The pressure and vacuum relief valves on the liquid cargo vessel shall be set to release at no less than 0.7 psig (4.8 kilopascals) of pressure or 0.3 psig (2.1 kilopascals) of vacuum or the highest allowable pressure and vacuum as specified in State or local fire codes, the National Fire Prevention Association guidelines or other National consensus standards acceptable to the Department. [29 PA Code §129.81(1)(iii)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitor the temperature of CD011.

(2) All by-pass vent streams shall be equipped with flow indicators and recorders. [AMS Permit Dated May 23, 2001, paragraph 3, AMS Installation Permit No. 94110]

(3) For P636, the Permittee shall provide verification on a monthly basis that operation of the MVCACS is limited to 2500 barrels per hour.

(4) Emission estimation procedures. For sources with emissions less than 10 or 25 tons and sources with emissions of 10 or 25 tons, the Permittee shall calculate an annual estimate of HAP emissions, excluding commodities exempted by 40

CFR 63.560(d), from marine tank vessel loading operations. Emission estimates and emission factors shall be based on test data, or if test data is not available, shall be based on measurement or estimating techniques generally accepted in industry practice for operating conditions at the source. [40 CFR 63.565(l)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Maintain records of all measurements, calculations, and other documentation used to identify commodities exempted under 40 CFR 63.560(d); [40 CFR 63.567(j)(1)]

(2) Keep readily accessible records of the emission estimation calculations performed in 40 CFR 63.565(l) for 5 years; and [40 CFR 63.567(j)(2)]

(3) The Permittee of marine tank vessel loading operations specified in 40 CFR 63.560(a)(3) shall retain records of the emissions estimates determined in 40 CFR 63.565(l) and records of their actual throughputs by commodity, for 5 years. [40 CFR 63.567(j)(4)]

(4) Continuously record the temperature of CD011.

(5) For P636, the Permittee shall retain a schematic diagram of the affected vent stream, collection system, fuel system, combustion devices and any by-pass system that is associated with the MVCACS on site. [AMS Permit Dated May 23, 2001, paragraph 4]

(6) For P636, the Permittee shall keep records on a monthly basis that operation of the MVCACS is limited to 2500 barrels per hour.

(e) Reporting Requirements

(1) If a source that otherwise would not be subject to the emissions standards subsequently increases its HAP emissions calculated on a 24-month annual average basis after September 19, 1997 or subsequently increases its gasoline or crude loading throughput calculated on a 24-month annual average basis after September 19, 1996 such that the source becomes subject to the emissions standards, such source shall be subject to the notification requirements of 40 CFR 63.9 of subpart A of 40 CFR 63 and the notification requirements of this paragraph. [40 CFR 63.567(b)(1)]

(2) Initial notification for sources with startup before the effective date. The Permittee of a source with initial startup before the effective date shall notify the AMS and EPA in writing that the source is subject to the relevant standard. The notification shall be submitted not later than 365 days after the effective date of the emissions standards and shall provide the following information: [40 CFR 63.567(b)(2)]

(i) The name and address of the Permittee; [40 CFR 63.567(b)(2)(i)]

(ii) The address (i.e., physical location) of the source; [40 CFR 63.567(b)(2)(ii)]

(iii) An identification of this emissions standard that is the basis of the notification and the source's compliance date; [40 CFR 63.567(b)(2)(iii)]

(iv) A brief description of the nature, size, design, and method of operation of the source; [40 CFR 63.567(b)(2)(iv)]

(v) A statement that the source is a major source. [40 CFR 63.567(b)(2)(v)]

(f) Non-Applicable Requirements

(1) If ballasting occurs, The Permittee will comply with ~~is not applicable to~~ 25 Pa Code 129.81(4) – Ballasting requirements. ~~The Girard Point Wharf does not receive crude oil or gasoline cargoes~~.

21. Group 18 – Fluidized Catalytic Cracking Units

Girard Point equipment numbered CD004, and P120. Point Breeze equipment numbered P661 and CD-110 (ESP used by P661).

(a) Emission Limitations

FCCU 868

(1) The Permittee shall not exceed the allowable emission limitations in the following table for P661 - FCCU Unit 868 during normal operation (except during start up and shut down:

		Emission Limitation		
Pollutants	**Concentration**	**Lbs/hr***	**Lbs/day**	**Tons/yr****
Particulate	1 lb/1000 lb coke	25	600	95
SO_2	500 ppmv	358	5880	600
CO	500 ppmv	54	1,300	100
NOx	None	221	5,304	482
HC	N/A	5	123	23

* During normal operation (except during start up and shut down

** Tons per year shall be calculated on the calendar and the daily rolling average

NOTE: [Plan Approval No. 00184 dated March 22, 2003. This streamlined permit condition assures compliance with Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H, SO2 Operating Permit No. SO2-95-039, NSPS Subpart J, AMS Approval letter dated November 22, 1999 (Item 3)]

(2) The Permittee shall not exceed the allowable emission limitations below for P661 - FCCU Unit 868 at all times including start up and shut down:

(i) Particular matter emissions shall not exceed forty (40) pounds per hour [AMS II, Section VII]

(ii) Sulfur Oxide emissions shall not exceed [Consent Decree Order 05-02866, on March 21, 2006]

(A) 125 ppmvd SO_2 at 0% O_2 on a 365-day rolling average basis

(B) Beginning January 1, 2016, SO2 emission shall not exceed

25 ppmvd @ 0% O2 on 365-day rolling average

50 ppmvd @ 0% O2 on 7-day rolling average

(iii) Carbon Monoxide emissions shall not exceed one percent (1%) by volume. [AMS Plan Approval 00184, dated March 22, 2002]

FCCU 1232

(3) The Permittee shall not exceed limit of the following tables for P120 - FCCU Unit 1232 [AMS Plan Approval No.04322, February 28, 2006, AMS Plan Approval 11353 dated 7/30/12, Consent Decree Order 05-CV-2866]

Concentration and Emissions		
Pollutant	***Long Term***	***Short Term***
Filterable PM/PM_{10} [a]	0.30 lb/1000 lb coke burn-off, 365-day rolling avg [b]	0.50 lb/1000 lb coke burn-off, 3-run avg
Total PM_{10} [a]		0.014 gr/dscf [d] @ 3% O2, 3 run avg
SO_2 (when CO boiler burn fuel gas with H_2S>0.1 gr/dscf		20 ppmdv @ 0% O2, 3 run rolling avg
SO_2	10 ppmdv @ 0% O2, 365-day rolling avg [c,d,f]	18 ppmdv @ 0% O2, 7-day rolling avg [c,f]
CO	100 ppmdv @ 0% O2, 365-day rolling avg [c,d]	500 ppmdv @ 0% O2, 1-hour avg
NOx	10 ppmdv @ 0% O2, 365-day rolling avg [c,e]	30 ppmdv @ 0% O2, 7-day rolling avg [c,e]

Where:

a. Filterable PM/ PM_{10} emissions per coke burn-off limits are for filterable particulate only, as measured by Method 5B.

b. Total PM/ PM_{10} emission limits include filterable particulate, as measured by Method 5B, and condensable particulate, as measured by Method 202.

c. Limits based on a 7-day or 365-day rolling average include only operating days.

d. PM, CO, and SO_2 concentration limits assure compliance with 40 CFR §§ 60.102(a)(1), 60.103, and 60.104(b)(1), 25 Pa Code §§ 123.13(b) & 123.21(b), AMR II Section VII, and AMR VIII Section II.

e. Consent Decree Order 05-CV-2866. Emission during periods of startup, shutdown, or malfunction shall not be used in determining compliance with the 7-day emission limit.

f. Consent Decree Order 05-CV-2866. SO2 emission from the Wet Gas Scrubber (WGS) Emission during periods of startup, shutdown, or malfunction shall not be used in determining compliance with the 7-day emission limit.

Emission Limits			
Pollutants	***Lbs/hr***	***Lbs/day***	***Tons/yr*** [a]
Total PM/ PM_{10} [b]	40.0	960.0	175.2
SO_2	663	15,980	362.72
CO	723	17,369	633.77
NOx	378	9,073	208.28
VOC	1.88	45.12	8.24
H_2SO_4 [c]	37.98	911.52	166.35
NH_3 [d]	4.39	105.36	19.23

Where:

a. NOx, SO_2, and CO tons per year shall be calculated on a rolling 365-day basis. PM/ PM_{10}, VOC, H_2SO_4, and NH_3 tons per year shall be calculated on a rolling 365-day basis based on AMS approved stack test results, daily process, and coke burn rate.

b. Total PM/ PM_{10} emission limits include filterable particulate, as measured by Method 5B, and condensable particulate, as measured by Method 202.

c. H_2SO_4 emission limits based on a nominal flue gas concentration of 7.5 ppmvd @ 0% O_2.

d. NH_3 emission limits based on a nominal flue gas concentration of 5 ppmvd @ 0% O_2.

(4) CD004 (the CO Boiler at the 1232 FCCU) shall not exceed 500 ppmvd SO_2 at any time. [SO2 Operating Permit No. SO2-95-039]

(5) When the Carbon Monoxide (CO) Boiler is not in operation, the Permittee shall operate the FCCU # 1232 with a CO promoter to maintain the CO concentration below 1% by volume of the exhaust gas. [AMR VIII, Section II]

(b) Work Practice Standards

FCCU 868

(1) FCCU Unit 868 shall not process more than 47,500 barrels per day (calculated on a 365-day rolling average basis). The FCCU may not process more than 50,000 barrels in any given day. [Plan Approval No. 00184 dated March 22, 2002 (Item 12)]

(2) For FCCU Unit 868, the Permittee shall follow good combustion practices controlling the level of excess oxygen and CO promoter in the regenerator to minimize NOx emissions from the regenerator. [Case-by-case RACT, 25 Pa Code §§129.91-95, Section 2H]

(3) The daily average ambient air rate to the FCCU Unit 868 regenerator shall not exceed 5.501 MMscfh. Plan Approval No. 00184 dated March 22, 2002]

(4) The FCCU Unit 868 shall be equipped with an automatic controls system to divert the feed when: [AMS Plan Approval 00184, dated March 22, 2002]

(i) The air blower is not in operation,

(ii) The feed rate falls below 18,000 bbls per day, or

(iii) The reactor temperature drops below 850 ºF.

(5) The Permittee shall control and monitor the catalyst bed level in FCCU 868 to prevent high catalyst levels and to reduce excessive catalyst losses [AMS Plan Approval 00184, dated March 22, 2002].

(6) The Permittee shall operate the FCCU 868 in accordance with the Quality Improvement Program submitted to AMS on September 15, 2001. [AMS Plan Approval 00184, dated March 22, 2002]

FCCU 1232

(7) The maximum allowable feed rate shall be limited 90,000 barrels per day calculated on a rolling 365-day average and 100,000 barrels per any single day. [AMS Plan Approval No.04322, February 28, 2006]

(8) The CD004 (CO Boiler at the 1232 FCCU) shall only burn refinery fuel gas or natural gas as auxiliary fuel [AMS Plan Approval 04322, dated February 28, 2006]

(9) The CO Boiler shall comply with 40 CFR Part 60, Subpart J. Compliance shall be demonstrated by continuously monitoring that either the concentration of H2S in the fuel gas does not exceed 0.1 gr/dscf or that the concentration of SO2 in the exhaust gas of the scrubber does not exceed 20 ppm (dry basis, zero percent air) on a 3-hour average [40 CFR §§ 60.104(a)(1), 60.105(a)(3)(ii), 60.105(a)(4), AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(10) The CO Boiler shall comply with the NO_x requirements of 25 Pa Code §§129.201-204. For this regulation, allowable emissions for the period from May 1 through September 30 of each year shall be calculated using an emission rate of 0.17 lbs NO_x/MMBTU. Actual and allowable emission calculations for this regulation shall follow the AMS-approved implementation plan [AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(11) In accordance with 25 PA Code § 129.55(d), the purging of VOCs during a unit turnaround shall be performed in a manner as to direct the volatile organic vapors to a fuel gas system, flare, or vapor recovery system until the initial pressure in such equipment reaches 19.7 psia [AMS Plan Approval 04322, dated 2/28/06, AMS Plan Approval 11353 dated 7/30/12].

(12) The Permittee shall, for the Wet Gas Scrubber (WGS) system, establish operating ranges for the pressure of water supplied, the flue gas pressure drop and a minimum pH during the performance test [AMS Plan Approval 04322, dated February 28, 2006].

(13) The Unit 1232 FCCU shall be equipped with continuous monitors and recorders for stack flow rate, NOx, SO2, CO, and O2 at the outlet of the WGS for compliance determination with the above limitations. The continuous monitors must conform to USEPA performance specifications in 40 CFR §§ 60.11, 60.13, 60.105, and Part 60 Appendices A, B, and F, and the PA DEP Continuous Source Monitoring Manual Rev. No. 7, September 2003 (PA CSMM). [AMS Plan Approval 04322, dated February 28, 2006].

(15) The Permittee shall prepare and implement an operation, maintenance, and monitoring plan for the 1232 FCCU, control systems, and monitoring systems as per 40 CFR § 63.1574(f) [AMS Plan Approval 04322, dated February 28, 2006].

(16) Ammonia Slip (after SCR but before WGS) shall be calculated and recorded continuously using the following equations: [AMS Plan Approval 04322, dated February 28, 2006].

NH_3 slip, ppmdv = [a-b*(c*d)/1E6]*1E6/b

Where:

a = NH_3 injection rate = (lbs/hr)/(17 lbs/lb-mol)

b = dry flow rate through SCR = (dscf/hr)/(dscf/lb-mol)

c = change in measured NO_x across SCR = (delta ppmdv @ 0% O_2)

d = correction factor to be determined during performance test

(c) Testing Requirements

[25 PA Code §139]

(1) The continuous emission monitors must conform to USEPA performance specifications in 40 CFR Part 60, Appendix B and PA DEP Continuous Sources Monitoring Manual [AMS Plan Approval 00184, dated March 22, 2002]

(2) Upon AMS request, the Permittee shall conduct performance tests on the 1232 and submit a test report to AMS to determine compliance with the emission standards for Total and Filterable Particulate/PM10, VOC, H2SO4, and Ammonia (outlet of WGS) and to determine emissions of Air Management Regulation VI Heavy Metals. [AMS Plan Approval 11353 dated 7/30/12].

(i) The Permittee shall conduct performance test for Total and Filterable Particulate/PM10, H2SO4, and Ammonia at least once every 12 months and furnish a written report to the results of each test to AMS.

(A) The Permittee may petition AMS to reduce the frequency of H2SO4 and Ammonia testing to every 5 years if sufficient test results show emissions in pounds per hour are less than one-half of the emission limit.

(ii) The Permittee shall conduct performance test every 5 years for VOC, and if requested by AMS for Heavy Metals.

(iii) The test protocol shall be submitted to AMS for approval at least 30 days before the test date. The test report shall be submitted to AMS within 60 days of completing the stack test.

(iv) Testing shall meet the requirements of 40 CFR Part 60, Subpart J and 40 CFR Part 63, Subpart UUU for determining compliance with any limits from these regulations and the PA Stack Testing Manual.

(v) The 1232 FCCU process rate during testing shall be at a minimum of 95% of the highest daily process rate achieved by the unit since re-starting.

(3) The following methods shall be used to demonstrate compliance:

(i) Modified Method 8 shall be used to demonstrate compliance with H2SO4 limits.

(ii) Method 25A shall be used to demonstrate compliance with VOC limits.

(iii) Method 5B and 202 shall be used to demonstrate compliance with PM emission limits

(iv) Method 7E shall be used to demonstrate compliance with the NOx limits.

(v) Method 6C shall be used to demonstrate compliance with the SO2 limits.

(d) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

FCCU 868

(1) The FCCU Unit 868 shall be equipped with continuous monitors and recorders for stack flow rate, NOx (including NO2), SO_2, CO, and Opacity for compliance determination with the emission limitations [AMS Plan Approval No. 00184, dated March 22, 2002]

(i) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

(2) For FCCU 868, the Permittee shall demonstrate compliance with the SO_2 emission limitations through the use of Continuous Emission Monitors (CEM) in accordance with 25 PA Code Chapter 139 procedures. [Permit No. SO2-95-039]

(3) For FCCU 868, the Permittee shall monitor the process rate on a daily basis. [Permit No. SO2-95-039]

FCCU 1232

(4) The Permittee shall monitor the daily feed rate for Unit 1232 FCC (in relation to P120, the FCC regenerator).

(5) The Permittee shall daily monitor FCCU emissions for SO_2, CO, NOx, Particulate/PM_{10}, VOC, H_2SO_4, and Ammonia

(i) SO2 emission shall be monitored on a 7-day rolling average to demonstrate compliance with the SO_2 emission limits. [40 CFR 60.107(b)(4), AMS Plan Approval 11353, dated 7/30/12]

(6) The Permittee shall monitor the daily process rate of the FCCU and ammonia slip [AMS Plan Approval 11353, dated 7/30/12].

(7) The Wet Gas Scrubber (WGS) System shall continuously monitor the pressure of the water supplied at the discharge of the recirculation pumps supplying water to the EDV-6000 Agglo-Filtering modules, and the flue gas pressure drop across the Agglo-Filtering modules in accordance with the alternative monitoring method for opacity approved by EPA and as established during the most recent performance test [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].

(8) The Permittee shall daily monitor the type of scrubbing liquid and average pH of the scrubbing liquid at the outlet, as established during the performance test [AMS Plan Approval 04322, dated February 28, 2006].

(9) The Permittee shall monitor the following parameter to assure compliance parameter ranges established with the most recent AMS approved stack test. [AMS Plan Approval 11353, dated 7/30/12].

(i) AFM Recycle Pump Pressure shall be monitored and recorded continuously

(ii) WGS Flue Gas Delta P across the AFM section shall be monitored and recorded continuously

(iii) pH of scrubbing liquid shall be monitored and recorded continuously

(iv) Upper Agglo Pressure shall be monitored and recorded manually on a monthly basis.

(10) The Permittee shall install and monitor an instrument to continuously monitor and record stack flow, NOx, SO_2, CO, and O2 in accordance with PA Continuous Source Monitoring Manual. [AMS Plan Approval 11353, dated 7/30/12].

(i) Moisture shall be calculated based on AMS approved levels based on historical data.

(ii) The Permittee shall provide substitute data in accordance with procedures in 40 CFR 75.33 for each CEM for annual emission inventory report.

(11) For CD004 (the CO Boiler at the 1232 FCCU), CO emissions shall be monitored using a continuous emission monitoring system (CEMS).

(12) Continuous emission monitoring system (CEMS) of CD004 (CO Boiler) shall monitor either the concentration of H_2S in the fuel gas does not exceed 0.1 gr/dscf or that the concentration of SO_2 in the exhaust gas of the scrubber does not exceed 20 ppm (dry basis, zero percent air) on a 3-hour average. [AMS Plan Approval 04322, dated February 23, 2006]

(13) The Permittee shall monitor average coke burn-off rate and hours of operation daily. The average coke burn-off shall be calculated using Equation 1 in 40 CFR 63.1564 (as follows) and hours of operation for the catalyst regenerator. [AMS Plan Approval 11353, dated 7/30/12].

$$R_c = K_1 Q_r(\%\,CO_2 + \%\,CO) + K_2 Q_a - K_3 Q_r\left(\%\,CO_2 + \frac{\%\,CO}{2} + \%O_2\right) + K_3 Q_{oxy}(\%O_{xy})$$

Where:

R_c = Coke burn-off rate, kg/hr (lb/hr)

Q_r = Volumetric flow rate of exhaust gas from catalyst regenerator before adding air or gas streams.

Q_a = Volumetric flow rate of air to catalytic cracking unit catalyst regenerator, as determined form instruments in the catalytic cracking unit control room, dscm/min (dscf/min)

% CO_2 = Carbon dioxide concentration in regenerator exhaust, percent by volume (dry basis)

% CO = Carbon monoxide concentration in regenerator exhaust, percent by volume (dry basis)

% O_2 = Oxygen concentration in regenerator exhaust, percent by volume (dry basis)

K_1 = Material balance and conversion factor, 0.2982 (kg-min)/hr-dscm-%) (0.0186 (lb-min)/(hr-dscf-%))

K_2 = Material balance and conversion factor, 2.088(kg-min)/hr-dscm-%) (0.1303 (lb-min)/(hr-dscf-%))

K_3 = Material balance and conversion factor, 0.0994 (kg-min)/hr-dscm-%) (0.0062 (lb-min)/(hr-dscf-%))

Q_{oxy} = Volumetric flow rate of oxygen-enriched air stream to regenerator, as determined form instruments in the catalytic cracking unit control room, dscm/min (dscf/min)

$\%O_{xy}$ = Oxygen concentration in oxygen-enriched air stream, percent by volume (dry basis)

(14) The Permittee shall monitor and calculate PM emission using Equation 2 in 40 CFR 63.1564

$$E = (K \times C_s \times Q_{sd}) / R_c$$

Where:

E = Emission rate of PM, kg/1,000 kg (lb/1,000 lb) of coke burn-off;

C_s = Concentration of PM, g/dscm (lb/dscf);

Q_{sd} = Volumetric flow rate of the catalytic cracking unit catalyst regenerator flue gas as measured by Method 2 in appendix A to 40 CFR Part 60, dscm/hr (dscf/hr);

R_c = Coke burn-off rate, kg coke/hr (1,000 lb coke/hr); and

K = Conversion factor, 1.0 (kg^2 /g)/(1,000 kg) (1,000 lb/(1,000 lb)).

(e) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

FCCU 868

(1) For FCCU 868, the Permittee shall record the process rate on a daily basis. [Permit No. SO2-95-039]

(2) The Permittee shall keep continuous emission records for FCCU 868. [Permit No. SO2-95-039, 25 PA Code §139.101(5)]

FCCU 1232

(3) The Permittee shall record the following: [AMS Plan Approval 11353, dated 7/30/12]

(i) The NOx, CO, and SO2 concentrations and the rolling 365-day emission limits shall be calculated based on 0% O2 and stack flow on a part per million (ppm) basis, hourly basis in lbs/hr, daily basis in lbs/day, and a rolling 12-month basis calculated monthly in tons per year (tpy).

(ii) PM/PM-10, H2SO4, VOC, and Ammonia shall keep record of stack test.

(iii) PM/PM-10, H2SO4, VOC, and Ammonia shall be determined based on approved stack test, daily records of average coke burn-off rate for the FCCU using Equation 1 in 40 CFR 63.1564 and the hours of operation for the catalyst regenerator.

(4) The FCCU process rate daily and on a 365-day rolling average, calculated daily [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].

(5) The Permittee shall record the following parameter to assure compliance parameter ranges established with the most recent AMS approved stack test. [AMS Plan Approval 11353, dated 7/30/12].

(i) AFM Recycle Pump Pressure shall be monitored and record continuously

(ii) WGS Flue Gas Delta P across the ASM section shall be monitored and record continuously

(iii) pH of scrubbing liquid shall be monitored and record continuously

(iv) Upper Agglo Pressure shall be monitored and record manually on a monthly basis.

(6) The Permittee shall record the average coke burn-off rate and hours of operation daily. The average coke burn-off shall be calculated using Equation 1 in 40 CFR 63.1564 and hours of operation for the catalyst regenerator. [AMS Plan Approval 11353, dated 7/30/12].

(7) Ammonia Slip (after SCR but before WGS) shall be continuously recorded calculated in accordance with Section 21(b)(16) [AMS Plan Approval 04322, dated February 28, 2006, AMS Plan Approval 11353, dated 7/30/12].].

(8) The Permittee shall keep records of the CO CEMS for CD04 (CO Boiler).

(f) Reporting Requirements

(1) The Permittee shall submit CEM and production reports for each FCCU to Air Management Services on a quarterly basis. CEM reports must meet the requirements of the PA CSMM.

(2) The Permittee shall submit *(semi-annually)* reports of excess emission in accordance with 40 CFR 60.7(c) determined as follows. [40 CFR 60.105(e)]

(i) Carbon monoxide: All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system exceeds 500 ppm.

(ii) All averages shall be determined as the arithmetic average of the applicable 1-hour averages.

(3) The Permittee shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 107(g)]

(4) For 1232 FCCU, CEM reports must meet the requirements of PA CSMM. The reports must also list any periods when the CO Boiler burns fuel gas with H2S content greater than 0.1 gr/dscf [AMS Plan Approval 04322, dated February 28, 2006]

(5) The Permittee shall keep records and submit reports in accordance with 40 CFR §60.107 and 40 CFR §63, Subpart UUU [AMS Plan Approval 04322, dated February 28, 2006].

(6) Whenever the CO Boiler is not in operation, the Permittee shall forward to AMS on a weekly basis all hourly averages of CO which exceed 1% by volume of exhaust gases. Reports shall be in accordance with the format and procedures contained in the PA DEP Continuous Source Monitoring Manual. [25 Pa. Code §127.511 & AMR I Sec. II]

22. Group 19 - Inter-Refinery Pipeline Equipment

Point Breeze equipment numbered P-664

(a) Emission Limitations

(1) VOC emission increase due to the operation of the Inter-Refinery Pipeline Project shall not exceed 12 tons per rolling 12-month period. Compliance with this limit is assured by maintaining an LDAR program. [AMS Installation Permit No. 94055 dated 5/9/94]

(b) Work Practice Standards

(1) The Permittee shall utilize an LDAR program as described for Group 06, Section D.7.(a).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Same requirements as Group 06, Section D.7(c).

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Same requirements as Group 06, Section D.7(d).

23. Group 20 – Alkylation

Girard Point equipment numbered P182 and CD014 (Flare for P182). Point Breeze equipment numbered P662, CD111 (Flare for P662) and CD112 (Flare for P662).

(a) Emission Limitations

(1) VOC emission from the 869 Alkylation plant (P662) shall not exceed 15.44 tons per rolling 12-month period [AMS Plan Approval 03163, dated 2/5/04].

(b) Work Practice Standards

(1) For P182, SHU catalyst treatment gas shall be routed to a flare that conforms with HAP control requirements under 40 CFR 63.11(b). [Plan Approval Nos. 99128 and 99093, paragraph 3, dated January 28, 2000, Plan Approval 03124, dated January 14, 2004]

(2) For P182, Unit 433 alkylate production shall be limited to 30,000 barrels per day on a rolling 365 day average. [AMS Plan Approval Nos. 06050, dated 12/4/06]

(3) For P662, Unit 869 Alkylation plant Olefin feed shall not exceed 7,500 barrels per stream day and 2,737,500 barrels in any 12-month rolling period [AMS Plan Approval 03163, dated 2/5/04].

(4) For 869 Alkylation Unit P662 - Individual Drain System Requirements [40 CFR 60 Subpart QQQ]

(i) The Permittee may elect to construct and operate a completely closed drain system. [40 CFR 60.693-1(a)]

(ii) Each completely closed drain system shall be equipped and operated with a closed vent system and control device (flare). [40 CFR 60.693-1(b)]

(iii) The Permittee must notify the EPA Administrator and AMS in the report required in 40 CFR 60.7 that they have elected to construct and operate a completely closed drain system. [40 CFR 60.693-1(c)]

(iv) If the Permittee elects to comply with the provisions of section 40 CFR 60.693-1, then they do not need to comply with the provisions of 40 CFR 60.692-2 or 40 CFR 60.694. [40 CFR 60.693-1(d)]

(5) For 869 Alkylation Unit P662 - If the alternative is not done as per 40 CFR 60.693-1 then the following standards for individual drain systems shall take place:

(i) Each drain shall be equipped with water seal controls. [40 CFR 60.692-2(a)(1)]

(ii) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls. [40 CFR 60.692-2(a)(2)]

(iii) Except as provided in 40 CFR 60.692-2(a)(4), each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions. [40 CFR 60.692-2(a)(3)]

(iv) As an alternative to the requirements in 40 CFR 60.692-2(a)(3), if the Permittee elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed. [40 CFR 60.692-2(a)(4)]

(v) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as

soon as practicable, but not later than 24 hours after detection, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(a)(5)]

(vi) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter. [40 CFR 60.692-2(b)(1)]

(vii) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance. [40 CFR 60.692-2(b)(2)]

(viii) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge. [40 CFR 60.692-2(b)(3)]

(ix) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(b)(4)]

(x) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.692-2(c)(1)]

(xi) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.692-2(c)(2)]

(xii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.692-2(c)(3)]

(xiii) Except as provided in 40 CFR 60.692-2(e), each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section. [40 CFR 60.692-2(d)]

(xiv) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin. [40 CFR 60.692-2(e)]

(6) For 869 Alkylation Unit P662 - Sewer Lines.

(i) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. [40 CFR 60.693-1(e)(1)]

(ii) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions. [40 CFR 60.693-1(e)(2)]

(iii) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-1(e)(3)]

(7) For 869 Alkylation Unit P662 - Access doors and other openings

(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions. [40 CFR 60.693-2(a)(5)(i)]

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in 40 CFR 60.692-6. [40 CFR 60.693-2(a)(5)(ii)]

(iii) The Permittee must notify the EPA Administrator and AMS in the report required by 40 CFR 60.7 that they have elected to construct and operate a floating roof. [40 CFR 60.693-2(b). This permit condition assures compliance with 25 Pa Code 129.55(a)(2)]

(iv) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of 40 CFR 60.692-3(a) shall be installed. [40 CFR 60.693-2(c). This permit condition assures compliance with 25 Pa Code 129.55(a)(1)]

(v) Except as provided in 40 CFR 60.693-2(c), if a Permittee elects to comply with the provisions of 40 CFR 60.693-2, then the Permittee does not need to comply with the provisions of 40 CFR 60.692-3 or 40 CFR 60.694 applicable to the same facilities. [40 CFR 60.693-2(d)]

(vi) At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the EPA Administrator and AMS which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source. [40 CFR 60.11(d)]

(8) Flare requirements. (see Group 03)

(9) Gas components routed to a flare shall go to a flare that conforms to HAP control requirements under 40 CFR §63.11(b)

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:]

(1) The Permittee shall monitor VOC emissions from 869 Alkylation plant.

(2) The Permittee shall monitor daily and rolling 12-month 869 Alkylation plant olefin feed rate calculated monthly.

(3) Monitoring is required for the flare - see Group 3, Section D.4.(d).

(4) The Permittee shall monitor daily that for P182, Unit 433 alkylate production is limited to 30,000 barrels per day on a rolling 365 day average.

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) For P662, Unite 869, VOC emission calculations to show compliance with Group 20, Section D.23.(a)(1) [AMS Plan Approval 03163, dated 2/5/04].

(2) For P662, Unite 869, Daily Olefin feed rate and rolling 12-month feed rate calculated monthly to demonstrate compliance with Group 20, Section D.23.(b)(3) [AMS Plan Approval 03163, dated 2/5/04].

(3) For P182, Unit 433 alkylate, record the production rate daily and on a 365-day rolling average, calculated daily. [AMS Plan Approval 06050].

(4) For sewer lines subject to 40 CFR 60.693-1(e), the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.693-1(e) when a problem is identified that could result in VOC emissions. [40 CFR 60.697(b)(3)]

(5) For completely closed drain systems subject to 40 CFR 60.693-1, the location, date, and corrective action shall be recorded for inspections required by 40 CFR 60.692-5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions. [40 CFR 60.697(d)]

(6) Delay of Repair

(i) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded. [40 CFR 60.697(e)(1)]

(ii) The reason for the delay shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time. [40 CFR 60.697(e)(2)]

(iii) The signature of the Permittee (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded. [40 CFR 60.697(e)(3)]

(iv) The date of successful repair or corrective action shall be recorded. [40 CFR 60.697(e)(4)]

(6) A copy of the design specifications for all applicable equipment shall be kept for the life of the source in a readily accessible location. [40 CFR 60.697(f)(1)]

(7) The following information pertaining to the design specifications shall be kept. [40 CFR 60.697(f)(2)]

(i) Detailed schematics, and piping and instrumentation diagrams. [40 CFR 60.697(f)(2)(i)]

(ii) The dates and descriptions of any changes in the design specifications. [40 CFR 60.697(f)(2)(ii)]

(8) If the Permittee elects to install a tightly sealed cap or plug over a drain that is out of active service, the Permittee shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains. [40 CFR 60.697(g)]

(9) The Permittee shall record daily that for P182, Unit 433 alkylate production is limited to 30,000 barrels per day on a rolling 365 day average. [AMS Plan Approval 06050 dated 12/4/2006]

(e) Reporting Requirements

(1) The Permittee shall submit to the EPA Administrator and AMS semiannually a certification that all of the required inspections have been carried out in accordance with the standards. [40 CFR 60.698(b)(1)]

(2) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted semiannually to the EPA Administrator and AMS. [40 CFR 60.698(c)]

(3) If compliance is delayed pursuant to 40 CFR 60.692-7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown. [40 CFR 60.698(e)]

(4) The Permittee shall submit an excess emission and continuous monitoring system performance report and or a summary report to AMS and EPA semiannually. [AMS Plan Approval 03163 dated 2/5/04]

(f) Non-Applicable Requirements

(1) This group is not applicable to the oil-water separator requirements of 40 CFR 60.693-2. This group does not have an independent oil-water separator with a floating roof. This unit sewer system drains to the refinery oily water system which complies with 40 CFR 61 Subpart FF (Group 25A, Section D.27).

24. Group 21 – Hydrogen purification equipment

Point Breeze equipment numbered P674.

(a) Work Practice Standards

(1) Same requirements as for Group 06, Section D.7(a). [25 PA Code §129.58 (a)(2)]

(2) Pumps and compressors. All pumps and compressors handling volatile organic compounds with a vapor pressure of greater than 1.5 psi (10.3 kilopascals) at actual conditions shall have mechanical seals. For the purpose of determining vapor pressure, a temperature no greater than 100°F (37.8°C) shall be used. [AMS letter dated 4/14/94; 25 PA Code §129.55(b)]

(b) Testing Requirements

[25 PA Code §139]

(1) Same requirements as for Group 06, Section D.7(b). [25 PA Code §139.14(b)(4)]

(2) Compressors in hydrogen service are exempt from the requirements of 40 CFR 60.592 if the Permittee demonstrates that a compressor is in hydrogen service. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(1)]

(3) Each compressor is presumed not to be in hydrogen service unless the Permittee demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected

always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E-260, E-168, or E-169 shall be used. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(2)]

(4) The Permittee may use engineering judgment rather than procedures in 40 CFR 60.593(b)(2) to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When the Permittee and the EPA Administrator or AMS do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph 40 CFR 60.593(b)(2) shall be used to resolve the disagreement. [AMS letter dated 4/14/94; 40 CFR 60.593(b)(3)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Same requirements as Group 06, Section D.7(c). [25 PA Code §129.58(g]

(2) Monitor equipment with the hydrogen purification unit. [AMS letter dated 4/14/94]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Same as Group 06, Section D.7(d). [25 PA Code §129.58(g)]

(2) Record equipment with the hydrogen purification unit. [AMS letter dated 4/14/94]

(e) Reporting Requirements

(1) Same requirements as for Group 06, Section D.7(e). [25 PA Code §129.58(g)]

(f) Non-Applicable requirements

(1) The Permittee is not applicable to the regulations for wastewater separators in 25 Pa Code 129.55(a)(1) and (a)(2) or vacuum-producing systems in 25 Pa Code 129.55.

25. Group 22 – Degreasing Vats

Girard Point equipment numbered P108 (PB Fab/Machine Shop small parts degreasers)

(a) Emissions

(1) VOC emissions from each part cleaner/cold cleaning machine shall not exceed 2.7 tons per rolling 12-month basis. [Installation Permit No. 12070-12071, dated May 21, 2012].

(b) Work Practice Standards

(1) No solvent containing methylene chloride (CAS No. 75-09-2), perchloroethylene (CAS No. 127-18-4), trichloroethylene (CAS No. 79-01-6), 1,1,1-trichloroethane (CAS No. 71-55-6), carbon tetrachloride (CAS No. 56-23-5) or chloroform (CAS No. 67-66-3), or any combination of these halogenated

HAP solvents, in a total concentration greater than 5 percent by weight, may be used as a cleaning and/or drying agent in any degreaser. [Exempt from 40 CFR §63.460]

(2) The Permittee shall not use any solvent subject to the Federal National emissions standards for hazardous air pollutants (NESHAP) for halogenated solvent cleaners under 40 CFR Part 63 (relating to National emissions standards for hazardous air pollutants for source categories). [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(3) Cold cleaning degreasers which have a degreaser opening which is greater than 10 square feet shall be equipped with:

(i) A cover to prevent evaporation of solvent during periods of non-use. [25 PA Code 129.63(a)(1)(i)]

(ii) Equipment for draining cleaned parts. [25 PA Code 129.63(a)(1)(ii)]

(iii) A permanent, conspicuous label summarizing the operating requirements. [25 PA Code 129.63(a)(1)(iii)]

(4) Be operated in accordance with the following requirements:

(i) Do not dispose of waste solvent or transfer it to another party, such that greater than 20% for the waste solvent (by weight) can evaporate into the atmosphere; store waste solvent only in covered containers. [25 PA Code129.63(a)(2)(i)]

(ii) Close degreaser cover whenever not handling parts in the cleaner. [25 PA Code 129.63(a)(2)(ii)]

(iii) Drain cleaned parts for at least 15 seconds or until dripping ceases. [25 PA Code 129.63(a)(2)(iii)]

(5) Each parts cleaner/cold cleaning machine shall: [AMS Installation Permit No. 12070-71, dated May 21, 2012]

(i) Immersion cold cleaning machines shall have a freeboard ratio of 0.50 or greater [25PA Code 129.63(a)(1)]

(ii)Immersion cold cleaning machines and remote reservoir cold cleaning machines shall have a permanent, conspicuous label summarizing the operating requirements in Section D.25(5)(iv). In addition, the label shall include the following discretionary good operating practices: [25PA Code 129.63(a)(2)(i)]

(A) Cleaned parts should be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts should be positioned so that solvent drains directly back to the cold cleaning machine.

(B) When a pump-agitated solvent bath is used, the agitator should be operated to produce a rolling motion of the solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned.

(C) Work area fans should be located and positioned so that they do not blow across the opening of the degreaser unit.

(iii) Be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage reservoir, a perforates drain with a diameter of not more than 6 inches shall constitute an acceptable cover. [25PA Code 129.63(a)(2)(ii)]

(iv) Cold Cleaning Machines shall be operated in accordance with the following procedures: [25PA Code 129.63(a)(3)]

(A) Waste solvent shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(B) Flushing of parts using a flexible hose or other flushing device shall be performed only within the cold cleaning machines. The solvent spray shall be a solid fluid stream, not a atomized or shower spray.

(C) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the cold cleaning machine.

(D) Air agitated solvent baths may not be used.

(E) Spills during solvent transfer and use of the cold cleaning machine shall be cleaned up immediately.

(v) The Permittee may not use, sell or offer for sale for use in a cold cleaning machine any solvent with a vapor pressure of 1.0 millimeter of mercury (mm Hg) or greater and containing greater than 5% VOC by weight, measured at 20C (68F) containing VOCs [25PA Code 129.63(a)(4)]

(A) The above condition does not apply: [25PA Code 129.63(a)(7)]

(I) To cold cleaning machines used in extreme cleaning service;

(II) If the owner or operator of the cold cleaning machine demonstrates, and AMS approves in writing, that compliance will result in unsafe operating conditions;

(III) To immersion cold cleaning machines with a freeboard ratio equal to or greater than 0.75.

(vi) If a person sells or offers for sale any solvent containing VOCs for use in a cold cleaning machine, the person shall provide to the purchaser, the following written information: [25PA Code 129.63(a)(7)]

(A) The name and address of the solvent supplier

(B) The type of solvent including the product or vendor identification number

(C) The vapor pressure of the solvent measured in mm Hg at 20C (68F)

(ii) VOC material shall be kept in covered containers when not in use. [AMR V, Sec. XIII.A.2].

(c) Monitoring Requirements

25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The concentration of these solvents may be determined using EPA test method 18, material safety data sheets, or engineering calculations. [40 CFR 63.460(a)]

(2) Proper operation of parts cleaner/cold cleaning machine in accordance with manufacturer's recommended operations and maintenance [Installation Permit 12070-71, dated May 21, 2012]

(c) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Records of the type and amount of any solvent with a vapor pressure that is greater than 0.3 kilopascals at 20 degrees Celsius that is added to the vats.

(2) Documentation of the concentration of solvents as determined using EPA test method 18, material safety data sheets, or engineering calculations.

(3) For the parts cleaner/cold cleaning machine, Permittee shall keep the following records: [Installation Permit No. 12070-71, dated May 21, 2012]

(i) monthly solvent usage.

(ii) VOC and HAP content of the solvent added to the parts cleaner/cold cleaner machine.

(iii) VOC emission on a monthly and rolling 12-month basis.

(iv) Records shall be kept for a period of 5 years and shall be produced upon request.

26. Group 23 – Butane Isomerization

Girard Point equipment numbered P121

(a) Work Practice Standards

(1) The Permittee shall reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. The vent stream shall be introduced into the flame zone of the boiler or process heater. [40 CFR 60.662(a)]

(b) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee who seeks to demonstrate compliance with 40 CFR 60.702(a) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system. [40 CFR 60.705(s) and USEPA Region III letter to AMS dated March 29, 1994, paragraph 5]

(c) Non-Applicable Requirements

(1) The EPA has determined that the performance testing and monitoring requirements under NSPS Subpart NNN are waived for the Permittee for vent streams that are combusted as primary fuel in boilers and process heaters. All vent streams from distillation columns, reactors, etc. are accumulated and ducted into the facility fuel gas line. [USEPA Region III letter to AMS dated March 29, 1994, paragraph 4]

27. Group 25A – Refining Wastewater

This section applies to Group 1 (as defined in 40 CFR 63.641) wastewater streams associated with petroleum refining process units – all units except Benzene and Cumene Production Units, Tank Truck Loading and Railcar Unloading (P-180, P-181, P-129 & P-183).

Girard Point equipment numbered P131, CD002 (Carbon Adsorber for P141), and P132, and CD003 (Carbon Adsorber for P132). Point Breeze equipment numbered P639 and CD105 (Carbon Adsorber for P639).

Girard Point equipment P114, and CD010 (Carbon Adsorber for P114). Point Breeze equipment numbered P640, CD106 (Carbon Adsorber for P640), P641, CD107 (Carbon Adsorber for P641), and P667.

EFRTs storing stormwater and process water – Girard Point P141, and P142, and CD007 (Carbon Adsorber for P141). Point Breeze equipment numbered P624 and P627.

IFRs – Girard Point Tanks P-012, P-134, P-135, P-136, P-137, P-156, P-159, P-160, P-174, and Point Breeze Tanks – P-547, P-575

EFRs – Girard Point Tanks P-006, P-155, P-162 and Point Breeze Tanks – P-521, P-546, P-587, P624, P-627

(a) Work Practice Standards

(1) The Permittee shall meet the following standards for each tank [40 CFR 61.343, 40 CFR 61.351(a)(2)]

(i) Internal Floating Roof Tanks

(A) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(1)(i)]

(B) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: [40 CFR 60.112b(a)(1)(ii)]

(1) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(2) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(3) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted

levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(C) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface. [40 CFR 60.112b(a)(1)(iii)]

(D) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. [40 CFR 60.112b(a)(1)(iv)]

(E) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [40 CFR 60.112b(a)(1)(v)]

(F) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. [40 CFR 60.112b(a)(1)(vi)]

(G) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. [40 CFR 60.112b(a)(1)(vii)]

(H) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. [40 CFR 60.112b(a)(1)(viii)]

(I) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. [40 CFR 60.112b(a)(1)(xi)]

(ii) External Floating Roof Tanks

(A) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal. [40 CFR 60.112b(a)(2)(i)]

(1) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. The seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(a) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm. [40 CFR 60.113b(b)(4)(i)]

(i) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(ii) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(2) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion

(a) The secondary seal is to meet the following requirements: [40 CFR 60.113b(b)(4)(ii)]

(i) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(ii) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(iii) There are to be no holes, tears, or other openings in the seal or seal fabric.

(B) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. [40 CFR 60.112b(a)(2)(ii)]

(C) The external floating roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. [40 CFR 60.112b(a)(2)(iii)]

(2) The Permittee shall meet the following standard for containers [40 CFR 61.345]

(i) The Permittee shall install, operate, and maintain a cover on each container used to handle, transfer, or store waste in accordance with the following requirements:

(A) The cover and all openings (e.g., bungs, hatches, and sampling ports) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, initially

and thereafter at least once per year by the methods specified in 40 CFR§61.355(h)

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the container except when it is necessary to use the opening for waste loading, removal, inspection, or sampling.

(ii) When a waste is transferred into a container by pumping, the Permittee shall perform the transfer using a submerged fill pipe. The submerged fill pipe outlet shall extend to within two fill pipe diameters of the bottom of the container while the container is being loaded. During loading of the waste, the cover shall remain in place and all openings shall be maintained in a closed, sealed position except for those openings required for the submerged fill pipe, and those openings required for venting of the container to prevent physical damage or permanent deformation of the container or cover

(iii) Each cover and all openings shall be visually inspected initially and quarterly thereafter to ensure that they are closed and gasketed properly.

(iv) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(3) The Permittee shall meet the following standard for individual drain system [40 CFR 61.346(b)]

(i) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.

(ii) Each junction box shall be equipped with a cover and may have a vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(A) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(B) One of the following methods shall be used to control emissions from the junction box vent pipe to the atmosphere:

(1) Equip the junction box with a system to prevent the flow of organic vapors from the junction box vent pipe to the atmosphere during normal operation. An example of such a system includes use of water seal controls on the junction box. A flow indicator shall be installed, operated, and maintained on each junction box vent pipe to ensure that organic vapors are not vented from the junction box to the atmosphere during normal operation.

(2) Connect the junction box vent pipe to a closed-vent system and control device in accordance with §61.349 of this subpart.

(iii) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(iv) When a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(4) The Permittee shall meet the following standard for oil-water separators [40 CFR 61.347]

(i) The Permittee shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(ii) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR §61.355(h).

(B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair.

(C) If the cover and closed-vent system operate such that the oil-water separator is maintained at a pressure less than atmospheric pressure, then paragraph Section 27(a)(4)(ii)(B) does not apply to any opening that meets all of the following conditions:

(1) The purpose of the opening is to provide dilution air to reduce the explosion hazard;

(2) The opening is designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR§61.355(h); and

(3) The pressure is monitored continuously to ensure that the pressure in the oil-water separator remains below atmospheric pressure.

(5) The Permittee shall meet the following standard for treatment process [40 CFR 61.348]

Rather than treating the waste onsite, the Permittee shall comply with 40 CFR 61.342(c)(1)(i) by transferring the waste offsite to another facility where the waste is treated in accordance with the requirements of 40 CFR 61.342(c)(1)(i). The Permittee shall: [40 CFR 61.342(f)]

(i) Comply with the standards specified in 40 CFR 61.343 through 61.347 for each waste management unit that receives or manages the waste prior to shipment of the waste offsite. [40 CFR 61.342(f)(1)]

(ii) Include with each offsite waste shipment a notice stating that the waste contains benzene which is required to be managed and treated in accordance with the provisions of subpart FF of 40 CFR 61. [40 CFR 61.342(f)(2)]

(6) The Permittee shall meet the following standard for closed-vent systems and control devices [40 CFR 61.348]

(i) The Permittee shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:

(A) The closed-vent system shall:

(1) Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in 40 CFR §61.355(h).

(2) Vent systems that contain any bypass line that could divert the vent stream away from a control device used to comply with the provisions of this subpart shall install, maintain, and operate according to the manufacturer's specifications a flow indicator that provides a record of vent stream flow away from the control device at least once every 15 minutes.

(a) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream away from the control device to the atmosphere.

(b) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required.

(c) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(d) One or more devices which vent directly to the atmosphere may be used on the closed-vent system provided each device remains in a closed, sealed position during normal operations except when the device needs to open to prevent physical damage or permanent deformation of the closed-vent system resulting from malfunction of the unit in accordance with good engineering and safety practices for handling flammable, explosive, or other hazardous materials.

(ii) A vapor recovery system (carbon adsorption system) shall recover or control the organic emissions vented to it with an efficiency of 95 weight percent or greater, or shall recover or control the benzene emissions vented to it with an efficiency of 98 weight percent or greater.

(iii) Each closed-vent system and control device shall be operated at all times when waste is placed in the waste management unit vented to the control

device except when maintenance or repair of the waste management unit cannot be completed without a shutdown of the control device.

(iv) The Permittee shall demonstrate that the efficiency of the vapor recovery system (carbon adsorption system) in Section D.27(a)(6)(ii), by using one of the following methods:

(A) Engineering calculations in accordance with requirements specified in 40 CFR§61.356(f); or

(B) Performance tests conducted using the test methods and procedures that meet the requirements specified in 40 CFR §61.355.

(v) The Administrator may request at any time an owner or operator demonstrate that a control device meets Section D.27(a)(6)(ii) by conducting a performance test using the test methods and procedures as required in 40 CFR §61.355.

(vi) Each closed-vent system and control device shall be visually inspected initially and quarterly thereafter. The visual inspection shall include inspection of ductwork and piping and connections to covers and control devices for evidence of visible defects such as holes in ductwork or piping and loose connections.

(vii) If visible defects are observed during an inspection, or if other problems are identified, or if detectable emissions are measured, a first effort to repair the closed-vent system and control device shall be made as soon as practicable but no later than 5 calendar days after detection. Repair shall be completed no later than 15 calendar days after the emissions are detected or the visible defect is observed.

(A) Delay of repair will be allowed if the repair is technically impossible without a complete or partial facility or unit shutdown.[40 CFR 61.350]

(B) Repair of such equipment shall occur before the end of the next facility or unit shutdown. [40 CFR 61.350]

(viii) The owner or operator of a control device that is used to comply with the provisions of this section shall monitor the control device in accordance with 40 CFR§61.354(c).

(b) Testing Requirements

[25 PA Code §139]

(1) The Permittee shall test equipment for compliance with no detectable emissions as required in 40 CFR 61.343 through 40 CFR 61.347, and 40 CFR 61.349 in accordance with the following requirements: [40 CFR 61.355(h)]

(i) Monitoring shall comply with method 21 from appendix A of 40 CFR part 60. [40 CFR 61.355(h)(1)]

(ii) The detection instrument shall meet the performance criteria of method 21. [40 CFR 61.355(h)(2)]

(iii) The instrument shall be calibrated before use on each day of its use by the procedures specified in method 21. [40 CFR 61.355(h)(3)]

(iv) Calibration gases shall be: [40 CFR 61.355(h)(4)]

(A) Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 61.355(h)(4)(i)]

(B) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane. [40 CFR 61.355(h)(4)(ii)]

(v) The background level shall be determined as set forth in method 21. [40 CFR 61.355(h)(5)]

(vi) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface described in method 21. [40 CFR 61.355(h)(6)]

(vii) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared to 500 ppm for determining compliance. [40 CFR 61.355(h)(7)]

(2) The Permittee shall determine the annual waste quantity at the point of waste generation by one of the methods provided below: [40 CFR 61.355(b)]

(i) Select the highest annual quantity of waste managed from historical records representing the most recent 5 years of operation or, if the facility has been in service for less than 5 years but at least 1 year, from historical records representing the total operating life of the facility; [40 CFR 61.355(b)(5)]

(ii) Use the maximum design capacity of the waste management unit; or [40 CFR 61.355(b)(6)]

(iii) Use measurements that are representative of maximum waste generation rates. [40 CFR 61.355(b)(7)]

(3) Knowledge of the waste. The Permittee shall provide sufficient information to document the flow-weighted annual average benzene concentration of each waste stream. Examples of information that could constitute knowledge include material balances, records of chemicals purchases, or previous test results provided the results are still relevant to the current waste stream conditions. If test data are used, then the Permittee shall provide documentation describing the testing protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the flow-weighted annual average benzene concentration for the waste stream. When the Permittee and the EPA Administrator and AMS do not agree on determinations of the flow-weighted annual average benzene concentration based on knowledge of the waste, the procedures under 40 CFR 61.355(c)(3) shall be used to resolve the disagreement. [40 CFR 61.355(c)(2)]

(4) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(i) shall measure the flow-weighted annual average benzene concentration of the waste stream exiting the treatment process by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in 40 CFR 61.355(c)(3). The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the

purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(d)]

(5) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(ii) shall determine the percent reduction of benzene in the waste stream on a mass basis by the following procedure: [40 CFR 61.355(e)]

(i) The test shall be conducted under conditions that exist when the treatment process is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(e)(1)]

(ii) All testing equipment shall be prepared and installed as specified in the appropriate test methods. [40 CFR 61.355(e)(2)]

(iii) The mass flow rate of benzene entering the treatment process (Eb) shall be determined by computing the product of the flow rate of the waste stream entering the treatment process, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene entering the treatment process is calculated as follows: [40 CFR 61.355(e)(3)]

$E_b = K / (n * 10^6) [V_i C_i]$

Where:

E_b = Mass flow rate of benzene entering the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste entering the treatment process during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream entering the treatment process during each run i, ppmw.

n = Number of runs.

(iv) The mass flow rate of benzene exiting the treatment process (Ea) shall be determined by computing the product of the flow rate of the waste stream exiting the treatment process, as determined by the outlet flow meter or the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling and analytical procedures specified in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over the same 3-hour period at which the mass flow rate of

benzene entering the treatment process is determined. The mass flow rate of benzene exiting the treatment process is calculated as follows: [40 CFR 61.355(e)(4)]

$E_a = K / (n * 10^6) [V_i C_i]$

Where:

E_a = Mass flow rate of benzene exiting the treatment process, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste exiting the treatment process during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream exiting the treatment process during each run i, ppmw.

n = Number of runs.

(6) The Permittee using performance tests to demonstrate compliance of a treatment process with 40 CFR 61.348(a)(1)(iii) shall determine the benzene destruction efficiency for the combustion unit by the following procedure: [40 CFR 61.355(f)]

(i) The test shall be conducted under conditions that exist when the combustion unit is operating at the highest inlet waste stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information necessary to document the operating conditions during the test. [40 CFR 61.355(f)(1)]

(ii) All testing equipment shall be prepared and installed as specified in the appropriate test methods. [40 CFR 61.355(f)(2)]

(iii) The mass flow rate of benzene entering the combustion unit shall be determined by computing the product of the flow rate of the waste stream entering the combustion unit, as determined by the inlet flow meter, and the benzene concentration of the waste stream, as determined using the sampling procedures in 40 CFR 61.355(c)(2) or (c)(3). Three grab samples of the waste shall be taken at equally spaced time intervals over a 1-hour period. Each 1-hour period constitutes a run, and the performance test shall consist of a minimum of 3 runs conducted over a 3-hour period. The mass flow rate of benzene into the combustion unit is calculated as follows: [40 CFR 61.355(f)(3)]

$E_b = K / (n * 10^6) [V_i C_i]$

Where:

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

K = Density of the waste stream, kg/m^3 (lb/ft^3).

V_i = Average volume flow rate of waste entering the combustion unit during each run i, m^3/hr (ft^3/hr).

C_i = Average concentration of benzene in the waste stream entering the combustion unit during each run i, ppmw.

n = Number of runs.

(iv) The mass flow rate of benzene exiting the combustion unit exhaust stack shall be determined as follows: [40 CFR 61.355(f)(4)]

(A) The time period for the test shall not be less than 3 hours during which at least 3 stack gas samples are collected and be the same time period at which the mass flow rate of benzene entering the treatment process is determined. Each sample shall be collected over a 1-hour period (e.g., in a tedlar bag) to represent a time-integrated composite sample and each 1-hour period shall correspond to the periods when the waste feed is sampled. [40 CFR 61.355(f)(4)(i)]

(B) A run shall consist of a 1-hour period during the test. For each run: [40 CFR 61.355(f)(4)(ii)]

(1) The reading from each measurement shall be recorded; [40 CFR 61.355(f)(4)(ii)(A)]

(2) The volume exhausted shall be determined using Method 2, 2A, 2C, or 2D from appendix A of 40 CFR part 60, as appropriate. [40 CFR 61.355(f)(4)(ii)(B)]

(3) The average benzene concentration in the exhaust downstream of the combustion unit shall be determined using Method 18 from appendix A of 40 CFR part 60. [40 CFR 61.355(f)(4)(ii)(C)]

(C) The mass of benzene emitted during each run shall be calculated as follows: [40 CFR 61.355(f)(4)(iii)]

$M_i = KVC (10 ^{-6})$

Where:

M_i = Mass of benzene emitted during run i, kg (lb).

V = Volume of air-vapor mixture exhausted at standard conditions, m^3 (ft^3).

C = Concentration of benzene measured in the exhaust, ppmv.

K = Conversion factor, 3.24 kg/m^3 (0.202 lb/ft^3).

(D) The benzene mass emission rate in the exhaust shall be calculated as follows: [40 CFR 61.355(f)(4)(iv)]

$E_a = M_i / T$

Where:

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

M_i = Mass of benzene emitted from the combustion unit during run i, kg (lb).

T = Total time of all runs, hr.

n = Number of runs.

(v) The benzene destruction efficiency for the combustion unit shall be calculated as follows: [40 CFR 61.355(f)(5)]

$R = ((E_b - E_a)/E_b) * 100)$

Where:

R = Benzene destruction efficiency for the combustion unit, percent.

E_b = Mass flow rate of benzene entering the combustion unit, kg/hr (lb/hr).

E_a = Mass flow rate of benzene emitted from the combustion unit, kg/hr (lb/hr).

(7) The Permittee using performance tests to demonstrate compliance of a wastewater treatment system unit with 40 CFR 61.348(b) shall measure the flow-weighted annual average benzene concentration of the wastewater stream where the waste stream enters an exempt waste management unit by collecting and analyzing a minimum of three representative samples of the waste stream using the procedures in 40 CFR 61.355(c)(3). The test shall be conducted under conditions that exist when the wastewater treatment system is operating at the highest inlet wastewater stream flow rate and benzene content expected to occur. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a test. The owner or operator shall record all process information as is necessary to document the operating conditions during the test. [40 CFR 61.355(g)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) For a waste stream to be exempt from 40 CFR 61.342(c)(1), the Permittee shall demonstrate, at least once per year, that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in 40 CFR 61.355(c)(2) or 40 CFR 61.355(c)(3). [40 CFR 61.342(c)(2)]

(2) For a waste stream to be exempt from 40 CFR 61.342(c)(1), the Permittee shall demonstrate, at least once per year, year that the all of the following conditions are met: [40 CFR 61.342(c)(3)(ii)]

(i) The Permittee does not choose to exempt process wastewater, [40 CFR 61.342(c)(3)(ii)(A)]

(ii) The total annual benzene quantity in all waste streams chosen for exemption in 40 CFR 61.342(c)(3)(ii) does not exceed 2.0 Mg/yr as determined in the procedures in 40 CFR 61.355(j), and [40 CFR 61.342(c)(3)(ii)(B)]

(iii) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated. [40 CFR 61.342(c)(3)(ii)(C)]

(3) If the Permittee complies with the requirements of 40 CFR 61.348(b), then the Permittee shall monitor each wastewater treatment system to ensure the unit is properly operated and maintained by the appropriate monitoring procedure as follows: [40 CFR 61.354(b)]

(i) For the first exempt waste management unit in each waste treatment train, other than an enhanced biodegradation unit, measure the flow rate, using the procedures of 40 CFR 61.355(b), and the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in 40 CFR 61.355(c)(3). [40 CFR 61.354(b)(1)]

(ii) For each enhanced biodegradation unit that is the first exempt waste management unit in a treatment train, measure the benzene concentration of each waste stream entering the unit at least once per month by collecting and analyzing one or more samples using the procedures specified in 40 CFR 61.355(c)(3). [40 CFR 61.354(b)(2)]

(4) The carbon adsorption system that does not regenerate the carbon bed directly on site in the control device (e.g., a carbon canister), either the concentration level of the organic compounds or the concentration level of benzene in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. [40 CFR 61.354(d)]

(i) The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater.

(ii) As an alternative to conducting this monitoring, the Permittee may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and either the organic concentration or the benzene concentration in the gas stream vented to the carbon adsorption system.

(5) Equipments of the individual drain systems installed in accordance with Section D.27(a)(3)(i), (ii), & (iii) shall be inspected as follows: [40 CFR 61..346(b)(4)]

(i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.

(ii) Each drain using a tightly sealed cap or plug shall be visually inspected initially and thereafter quarterly to ensure caps or plugs are in place and properly installed.

(iii) Each junction box shall be visually inspected initially and thereafter quarterly to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.

(6) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) of the fixed-roof shall be monitored initially and once per year by the methods specified in 40 CFR §61.355(h) to determine compliance with SectionD.27(a)(4)(i)(A) [40 CFR 61.347(a)(1)(i)(A)]

(7) The closed-vent system shall be monitored initially and once per year by the methods specified in 40 CFR §61.355(h) to determine compliance with SectionD.27(a)(6)(i)(A)(1) [40 CFR 61.349(a)(1)(i)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee of a facility subject to the provisions of 40 CFR 61 subpart FF shall comply with the recordkeeping requirements of 40 CFR 61.356. Each record shall be maintained in a readily accessible location at the facility site for a period not less than five years from the date the information is recorded. [40 CFR 61.356(a)]

(2) The Permittee shall maintain records that identify each waste stream at the facility subject to 40 CFR 61 subpart FF, and indicate whether or not the waste stream is controlled for benzene emissions in accordance with 40 CFR 61 subpart FF. In addition the Permittee shall maintain the following records: [40 CFR 61.356(b)]

(i) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity. [40 CFR 61.356(b)(1)]

(ii) For each waste stream exempt from 40 CFR 61.342(c)(1) in accordance with 40 CFR 61.342(c)(3), the records shall include: [40 CFR 61.356(b)(2)]

(A) All measurements, calculations, and other documentation used to determine that the continuous flow of process wastewater is less than 0.02 liters (0.005 gallons) per minute or the annual waste quantity of process wastewater is less than 10 Mg/yr (11 ton/yr) in accordance with 40 CFR 61.342(c)(3)(i), or [40 CFR 61.356(b)(2)(i)]

(B) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with 40 CFR 61.342(c)(3)(ii). [40 CFR 61.356(b)(2)(ii)]

(iii) For each facility where the annual waste quantity for process unit turnaround waste is determined in accordance with 40 CFR 61.356(b)(5), the records shall include all test results, measurements, calculations, and other documentation used to determine the following information: identification of each process unit at the facility that undergoes turnarounds, the date of the most recent turnaround for each process unit, identification of each process unit turnaround waste, the water content of each process unit turnaround waste, the annual waste quantity determined in accordance with 40 CFR 61.356(b)(5), the range of benzene concentrations in the waste, the annual average flow-weighted benzene concentration of the waste, and the annual benzene quantity calculated in accordance with 40 CFR 61.356(a)(1)(iii). [40 CFR 61.356(b)(5)]

(3) The Permittee transferring waste off-site to another facility for treatment in accordance with 40 CFR 61.342(f) shall maintain documentation for each offsite waste shipment that includes the following information: Date waste is shipped offsite, quantity of waste shipped offsite, name and address of the

facility receiving the waste, and a copy of the notice sent with the waste shipment. [40 CFR 61.356(c)]

(4) The Permittee using control equipment in accordance with 40 CFR 61.343 through 61.347 shall maintain engineering design documentation for all control equipment that is installed on the waste management unit. The documentation shall be retained for the life of the control equipment. If a control device is used, then the owner or operator shall maintain the control device records required by 40 CFR 61.356(f). [40 CFR 61.356(d)]

(5) The Permittee using a treatment process or wastewater treatment system unit in accordance with 40 CFR 61.348 shall maintain the following records. The documentation shall be retained for the life of the unit. [40 CFR 61.356(e)]

(i) A statement signed and dated by the Permittee certifying that the unit is designed to operate at the documented performance level when the waste stream entering the unit is at the highest waste stream flow rate and benzene content expected to occur. [40 CFR 61.356(e)(1)]

(ii) If engineering calculations are used to determine treatment process or wastewater treatment system unit performance, then the Permittee shall maintain the complete design analysis for the unit. The design analysis shall include for example the following information: Design specifications, drawings, schematics, piping and instrumentation diagrams, and other documentation necessary to demonstrate the unit performance. [40 CFR 61.356(e)(2)]

(iii) If performance tests are used to determine treatment process or wastewater treatment system unit performance, then the Permittee shall maintain all test information necessary to demonstrate the unit performance. [40 CFR 61.356(e)(3)]

(A) A description of the unit including the following information: type of treatment process; manufacturer name and model number; and for each waste stream entering and exiting the unit, the waste stream type (e.g., process wastewater, sludge, slurry, etc.), and the design flow rate and benzene content. [40 CFR 61.356(e)(3)(i)]

(B) Documentation describing the test protocol and the means by which sampling variability and analytical variability were accounted for in the determination of the unit performance. The description of the test protocol shall include the following information: sampling locations, sampling method, sampling frequency, and analytical procedures used for sample analysis. [40 CFR 61.356(e)(3)(ii)]

(C) Records of unit operating conditions during each test run including all key process parameters. [40 CFR 61.356(e)(3)(iii)]

(D) All test results. [40 CFR 61.356(e)(3)(iv)]

(iv) If a control device is used, then the Permittee shall maintain the control device records required by 40 CFR 61.356(f). [40 CFR 61.356(e)(4)]

(6) The Permittee using a closed-vent system and a carbon adsorber shall maintain the following records. The documentation shall be retained for the life of the control device. [40 CFR 61.356(f)]

(i) A statement signed and dated by the Permittee certifying that the closed-vent system and control device is designed to operate at the documented performance level when the waste management unit vented to the control device is or would be operating at the highest load or capacity expected to occur. [40 CFR 61.356(f)(1)]

(ii) If engineering calculations are used to determine control device performance in accordance with 40 CFR 61.349(c), then a design analysis for the control device that includes for example: [40 CFR 61.356(f)(2)]

(A) Specifications, drawings, schematics, and piping and instrumentation diagrams prepared by the Permittee, or the control device manufacturer or vendor that describe the control device design based on acceptable engineering texts. For the carbon adsorption system that regenerates the carbon bed directly on-site in the control device such as a fixed-bed adsorber, the design analysis shall consider the vent stream composition, constituent concentration, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level or the design exhaust vent stream benzene concentration level, number and capacity of carbon beds, type and working capacity of activated carbon used for carbon beds, design total steam flow over the period of each complete carbon bed regeneration cycle, duration of the carbon bed steaming and cooling/drying cycles, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of carbon. [40 CFR 61.356(f)(2)(i)(F)]

(7) The Permittee shall maintain a record for each visual inspection required by 40 CFR 61.343 through 61.347 that identifies a problem (such as a broken seal, gap or other problem) which could result in benzene emissions. The record shall include the date of the inspection, waste management unit and control equipment location where the problem is identified, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed. [40 CFR 61.356(g)]

(8) The Permittee shall maintain a record for each test of no detectable emissions required by 40 CFR 61.343 through 61.347 and 61.349. The record shall include the following information: date the test is performed, background level measured during test, and maximum concentration indicated by the instrument reading measured for each potential leak interface. If detectable emissions are measured at a leak interface, then the record shall also include the waste management unit, control equipment, and leak interface location where detectable emissions were measured, a description of the problem, a description of the corrective action taken, and the date the corrective action was completed. [40 CFR 61.356(h)]

(9) For each treatment process and wastewater treatment system unit operated to comply with 40 CFR 61.348, the Permittee shall maintain documentation that includes the following information regarding the unit operation: [40 CFR 61.356(i)]

(i) Dates of startup and shutdown of the unit. [40 CFR 61.356(i)(1)]

(ii) If measurements of waste stream benzene concentration are performed in accordance with 40 CFR 61.354(a)(1), the Permittee shall maintain records that include date each test is performed and all test results. [40 CFR 61.356(i)(2)]

(iii) If a process parameter is continuously monitored in accordance with 40 CFR 61.354(a)(2), the Permittee shall maintain records that include a description of the operating parameter (or parameters) to be monitored to ensure that the unit will be operated in conformance with these standards and the unit's design specifications, and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the unit. [40 CFR 61.356(i)(3)]

(iv) If measurements of waste stream benzene concentration are performed in accordance with 40 CFR 61.354(b), the Permittee shall maintain records that include the date each test is performed and all test results. [40 CFR 61.356(i)(4)]

(v) Periods when the unit is not operated as designed. [40 CFR 61.356(i)(5)]

(10) For each control device, the Permittee shall maintain documentation that includes the following information regarding the control device operation: [40 CFR 61.356(j)]

(i) Dates of startup and shutdown of the closed-vent system and control device. [40 CFR 61.356(j)(1)]

(ii) A description of the operating parameter (or parameters) to be monitored to ensure that the control device will be operated in conformance with these standards and the control device's design specifications and an explanation of the criteria used for selection of that parameter (or parameters). This documentation shall be kept for the life of the control device. [40 CFR 61.356(j)(2)]

(iii) Periods when the closed-vent system and control device are not operated as designed including all periods and the duration when: [40 CFR 61.356(j)(3)]

(A) Any valve car-seal or closure mechanism required under 40 CFR 61.349(a)(1)(ii) is broken or the by-pass line valve position has changed. [40 CFR 61.356(j)(3)(i)]

(B) The flow monitoring devices required under 40 CFR 61.349(a)(1)(ii) indicate that vapors are not routed to the control device as required. [40 CFR 61.356(j)(3)(ii)]

(iv) If a carbon adsorber is used, then the owner or operator shall maintain records from the monitoring device of the concentration of organics or the concentration of benzene in the control device outlet gas stream. If the concentration of organics or the concentration of benzene in the control device outlet gas stream is monitored, then the owner or operator shall record all 3-hour periods of operation during which the concentration of organics or the concentration of benzene in the exhaust stream is more than 20 percent greater than the design value. If the carbon bed regeneration interval is monitored, then the owner or operator shall record each

occurrence when the vent stream continues to flow through the control device beyond the predetermined carbon bed regeneration time. [40 CFR 61.356(j)(9)]

(v) The Permittee shall maintain records of dates and times when the carbon adsorber is monitored, when breakthrough is measured, and shall record the date and time then the existing carbon in the control device is replaced with fresh carbon. [40 CFR 61.356(j)(10)]

(e) Reporting Requirements

(1) Annual Report. Beginning on the date that the equipment necessary to comply with these standards has been certified, the Permittee shall submit an annual report which includes and/or updates the following information: (If the information in the annual report required by 40 CFR 61.357(a)(1) through 40 CFR 61.357(a)(3) is not changed in the following year, the Permittee may submit a statement to that effect.) [40 CFR 61.357(d)(2)]

(i) Total annual benzene quantity from facility waste determined in accordance with 40 CFR 61.355(a). [40 CFR 61.357(a)(1)]

(ii) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions. [40 CFR 61.357(a)(2)]

(iii) For each waste stream identified as not being controlled for benzene emissions the following information shall be added to the table: [40 CFR 61.357(a)(3)]

(A) Whether or not the water content of the waste stream is greater than 10 percent; [40 CFR 61.357(a)(3)(i)]

(B) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate; [40 CFR 61.357(a)(3)(ii)]

(C) Annual waste quantity for the waste stream; [40 CFR 61.357(a)(3)(iii)]

(D) Range of benzene concentrations for the waste stream; [40 CFR 61.357(a)(3)(iv)]

(E) Annual average flow-weighted benzene concentration for the waste stream; and [40 CFR 61.357(a)(3)(v)]

(F) Annual benzene quantity for the waste stream [40 CFR 61.357(a)(3)(vi)].

NOTE: The information required above should represent the waste stream characteristics based on current configuration and operating conditions. The Permittee only needs to list in the report those waste streams that contact materials containing benzene. [40 CFR 61.357(a)(4)]

(iv) The annual report shall include a table identifying each waste stream chosen for exemption and the total annual benzene quantity in these exempted streams. [40 CFR 61.357(d)(3)]

(v) A summary of all inspections during which detectable emissions are measured or a problem (such as a broken seal, gap or other problem) that could result in benzene emissions is identified, including information about the repairs or corrective action taken. [40 CFR 61.357(d)(8)]

(2) Quarterly Report. Beginning 3 months after the date that the equipment necessary to comply with these standards has been certified, the Permittee

shall submit a report quarterly to the EPA Administrator and AMS that includes: [40 CFR 61.357(d)(6)]

(i) A certification that all of the required inspections have been carried out. [40 CFR 61.357(d)(6)]

(ii) If a treatment process or wastewater treatment system unit is monitored in accordance with 40 CFR 61.354(b), then each period of operation during which the flow-weighted annual average concentration of benzene in the monitored waste stream entering the unit is equal to or greater than 10 ppmw and/or the total annual benzene quantity is equal to or greater than 1.0 mg/yr. [40 CFR 61.357(d)(7)(iii)]

(iii) For the carbon adsorber, each period of operation monitored during which any of the following conditions occur: [40 CFR 61.357(d)(7)(iv)]

(A) Each 3-hour period of operation during which the average concentration of organics or the average concentration of benzene in the exhaust gases from a carbon adsorber, condenser, or other vapor recovery system is more than 20 percent greater than the design concentration level of organics or benzene in the exhaust gas. [40 CFR 61.357(d)(7)(iv)(D)]

(B) Each occurrence when the carbon in a carbon adsorber system that is regenerated directly on site in the control device is not regenerated at the predetermined carbon bed regeneration time. [40 CFR 61.357(d)(7)(iv)(H)]

(C) Each 3-hour period of operation during which the parameters monitored are outside the range of values specified in 40 CFR 61.349(a)(2)(iv)(C), or any other periods specified by the EPA Administrator and AMS for a control device subject to the requirements of 40 CFR 61.349(a)(2)(iv). [40 CFR 61.357(d)(7)(iv)(J)]

(3) For the cover and closed-vent system monitored in accordance with 40 CFR 61.354(g), the Permittee shall submit a report quarterly to the EPA Administrator and AMS that identifies any period in which the pressure in the waste management unit is equal to or greater than atmospheric pressure. [40 CFR 61.357(d)(7)(v)]

28. Group 25B – SOCMI Wastewater

This section applies to HAP wastewater streams associated with SOCMI process units - Benzene and Cumene Production Units, Tank Truck Loading and Railcar Unloading (P-180 and P-181).

(a) Work Practice Standards

(1) The Permittee shall prepare a description of maintenance procedures for management of wastewaters generated from the emptying and purging of equipment in the process during temporary shutdowns for inspections, maintenance, and repair (i.e., a maintenance-turnaround) and during periods which are not shutdowns (i.e., routine maintenance). The descriptions shall: [40 CFR 63.105(b)]

(i) Specify the process equipment or maintenance tasks that are anticipated to create wastewater during maintenance activities. [40 CFR 63.105(b)(1)]

(ii) Specify the procedures that will be followed to properly manage the wastewater and control organic HAP emissions to the atmosphere; and [40 CFR 63.105(b)(2)]

(iii) Specify the procedures to be followed when clearing materials from process equipment. [40 CFR 63.105(b)(3)]

(4) The Permittee shall modify and update the information required by 40 CFR 63.105(b) as needed following each maintenance procedure based on the actions taken and the wastewaters generated in the preceding maintenance procedure. [40 CFR 63.105(c)]

(5) The Permittee shall implement the procedures described in 40 CFR 63.105(b) and 40 CFR 63.105(c) as part of the start-up, shutdown, and malfunction plan required under 40 CFR 63.6(e)(3). [40 CFR 63.105(d)]

(6) The Permittee of a new or existing source using biological treatment for at least one wastewater stream that is Group 1 for Table 9 compounds shall achieve a required mass removal of at least 95 percent for all Table 9 compounds. The Permittee of a new source using biological treatment for at least one wastewater stream that is Group 1 for Table 8 compounds shall achieve a required mass removal of at least 95 percent for all Table 8 compounds. All Group 1 and Group 2 wastewater streams entering a biological treatment unit that are from chemical manufacturing process units subject to 40 CFR 63 Subpart F shall be included in the demonstration of the 95-percent mass removal. The Permittee shall comply with 40 CFR 63.138(g)(1) through (g)(4). [40 CFR 63.138(g), 40 CFR 63.138(a)(1), 40 CFR 63.138(a)(2), 40 CFR 63.138(b)(2), and 40 CFR 63.138(c)(2)]

(i) Except as provided in 40 CFR 63.138(g)(4), the Permittee shall ensure that all Group 1 and Group 2 wastewater streams from chemical manufacturing process units subject to this rule entering a biological treatment unit are treated to destruct at least 95-percent total mass of all Table 8 and/or Table 9 compounds. [40 CFR 63.138(g)(1)]

(ii) For open biological treatment processes compliance shall be determined using the procedures specified in 40 CFR 63.145(g). For closed aerobic biological treatment processes compliance shall be determined using the procedures specified in 40 CFR 63.145(e) or (g). For closed anaerobic biological treatment processes compliance shall be determined using the procedures in 40 CFR 63.145(e). [40 CFR 63.138(g)(2)]

(iii) For each treatment process or waste management unit that receives, manages, or treats wastewater streams, from the point of determination of each Group 1 or Group 2 wastewater stream to the biological treatment unit, the Permittee shall comply with 40 CFR 63.133 through 40 CFR 63.137 for control of air emissions. When complying with this paragraph, the term Group 1 shall mean both Group 1 and Group 2. [40 CFR 63.138(g)(3)]

(iv) If a wastewater stream is in compliance with the requirements in 40 CFR 63.138(b)(1), (c)(1), (d), (e), (f), or (h) before entering the biological treatment unit, the hazardous air pollutants mass of that wastewater is not required to be included in the total mass flow rate entering the biological

treatment unit for the purpose of demonstrating compliance. [40 CFR 63.138(g)(4)]

(7) For each control device or combination of control devices used to comply with the provisions in 40 CFR 63.133 through 63.138, the Permittee shall operate and maintain the control device or combination of control devices in accordance with the requirements of paragraphs (b) through (f) of 40 CFR 63.139. [40 CFR 63.139(a)]

(i) Whenever organic hazardous air pollutants emissions are vented to a control device which is used to comply with the provisions of subpart F of 40 CFR 63, such control device shall be operating. [40 CFR 63.139(b)]

(6) The carbon adsorption system shall reduce the total organic compound emissions, less methane and ethane, or total organic hazardous air pollutants emissions vented to the control device of 95 percent by weight or greater or achieve an outlet total organic compound concentration, less methane and ethane, or total organic hazardous air pollutants concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 63.139(c)(2)]

(7) For the carbon canister, the design evaluation shall consider the vent stream composition, constituent concentrations, mass or volumetric flow rate, relative humidity, and temperature and shall establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule. [40 CFR 63.139(d)(2)(vi)]

(8) Except as provided in 40 CFR 63.140 of subpart F of 40 CFR 63, if gaps, cracks, tears, or holes are observed in ductwork, piping, or connections to covers and control devices during an inspection, a first effort to repair shall be made as soon as practical but no later than 5 calendar days after identification. Repair shall be completed no later than 15 calendar days after identification or discovery of the defect. [40 CFR 63.139(f)]

(9) Inspections. For each wastewater tank, surface impoundment, container, individual drain system, and oil-water separator that receives, manages, or treats a Group 1 wastewater stream, a residual removed from a Group 1 wastewater stream, a recycled Group 1 wastewater stream, or a recycled residual removed from a Group 1 wastewater stream, the Permittee shall comply with the inspection requirements specified in table 11 of 40 CFR 63, Subpart G. [40 CFR 63.143(a)]

(10) Delay of repair. Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the repair is technically infeasible without a shutdown (as defined in 40 CFR 63.101) or if the Permittee determines that emissions of purged material from immediate repair would be greater than the emissions likely to result from delay of repair. Repair of this equipment shall occur by the end of the next shutdown. [40 CFR 63.140(a)]

(11) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified, is allowed if the equipment is emptied

or is no longer used to treat or manage Group 1 wastewater streams or residuals removed from Group 1 wastewater streams. [40 CFR 63.140(b)]

(12) Delay of repair of equipment for which a control equipment failure or a gap, crack, tear, or hole has been identified is also allowed if additional time is necessary due to the unavailability of parts beyond the control of the Permittee. Repair shall be completed as soon as practical. [40 CFR 63.140(c)]

(b) Testing Requirements

(1) If complying with the 95-percent reduction efficiency requirements, comply with the requirements specified in 40 CFR 63.145(i)(1) through (i)(9). [40 CFR 63.145(i)]

(i) Compare mass destruction efficiency to required efficiency. If complying with the 95 percent reduction efficiency requirement, compliance is demonstrated if the mass destruction efficiency (calculated in Equation WW18) is 95 percent or greater. [40 CFR 63.145(i)(9)]

(2) The Permittee shall submit a request stating the basis for the selected monitoring frequencies and the methods that will be used. [40 CFR 63.143(c), 40 CFR 63.151(f)(1)]

(3) Performance tests for the 95-percent mass removal rate specified in 40 CFR 63.138(g) shall be conducted in accordance with the requirements of 40 CFR 63.145(g)(1), 40 CFR 63.145(e)(3)(ii), 40 CFR 63.145(e)(4)(ii) and 40 CFR 63.145(g)(2). [40 CFR 63.145(g)]

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) The Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request should include a description of the parameter(s) to be monitored to ensure the control technology or pollution prevention measure is operated in conformance with its design and achieves the specified emission limit, percent reduction, or nominal efficiency, and an explanation of the criteria used to select the parameter(s). The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. [40 CFR 63.143(c), 63.151(f)(1)]

(2) Determine whether a wastewater stream is a Group 1 or Group 2 wastewater stream in accordance with 40 CFR 63.144 (b) and (c). [40 CFR 63.144(b) and 40 CFR 63.144(c)]

(3) Performance tests and design evaluations for control devices. The Permittee shall conduct either a design evaluation as specified in 40 CFR 63.139(d), or a performance test as specified in 40 CFR 63.145(i) for control devices other than flares and 40 CFR 63.145(j) for flares. [40 CFR 63.145(a)(2)]

(4) For each biological treatment unit used to comply with 40 CFR 63.138, the Permittee shall comply with the monitoring requirements specified in table 12 of 40 CFR 63, Subpart G. [40 CFR 63.143(b)]

(5) If the Permittee elects to comply with Item 1 in table 12 of 40 CFR 63, Subpart G, the Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(c)]

(6) If the Permittee elects to comply with Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the selected treatment process. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(d)]

(7) The Permittee shall comply with the requirements in 40 CFR 63.139(d) and with the requirements in 40 CFR 63.143(e)(1), 40 CFR 63.143(e)(2), or 40 CFR 63.143(e)(3). [40 CFR 63.143(e)]

(i) The Permittee shall comply with the following monitoring requirements specified in table 13 of subpart G of 40 CFR 63: [40 CFR 63.143(e)(1)]

(A) Monthly inspections of valves sealed closed with car-seal.

(B) Daily (or at intervals no greater than 20% of the design carbon replacement interval, whichever is greater) monitoring of organic compound concentration of adsorber exhaust; or [Table 13 of subpart G of 40 CFR 63]

(C) The Permittee shall use an organic monitoring device installed at the outlet of the control device and equipped with a continuous recorder. Continuous recorder is defined in 40 CFR 63.111; or [40 CFR 63.143(e)(2)]

(D) The Permittee shall request approval to monitor parameters other than those specified in 40 CFR 63.143(e)(1) or 40 CFR 63.143(e)(2). The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(e)(3)]

(8) For each parameter monitored in accordance with 40 CFR 63.143(c), 40 CFR 63.143(d), or 40 CFR 63.143(e), the Permittee shall establish a range that indicates proper operation of the treatment process or control device. In order to establish the range, the Permittee shall comply with the requirements

specified in 40 CFR 63.146(b)(7)(ii)(A) and 40 CFR 63.146(b)(8)(ii). [40 CFR 63.143(f)]

(9) Monitoring equipment shall be installed, calibrated, and maintained according to the manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. [40 CFR 63.143(g)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) The Permittee shall maintain a record of the information required by 40 CFR 63.105(b) and 40 CFR 63.105(c) as part of the start-up, shutdown, and malfunction plan. [40 CFR 63.105(e)]

(2) The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means for the Permittee electing to comply with Item 1 in table 12 of subpart G of 40 CFR 63. [40 CFR 63.143(c)]

(3) The Permittee transferring a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream in accordance with 40 CFR 63.132(g) shall keep a record of the notice sent to the treatment operator stating that the wastewater stream or residual contains organic hazardous air pollutants which are required to be managed and treated. [40 CFR 63.147(a)]

(4) The Permittee shall keep in a readily accessible location the following records: [40 CFR 63.147(b)]

(i) A record that each waste management unit inspection required by 40 CFR 63.133 through 63.137 was performed. [40 CFR 63.147(b)(1)]

(ii) A record that each inspection for control devices required by 40 CFR 63.139 was performed. [40 CFR 63.147(b)(2)]

(iii) A record of the results of each seal gap measurement required by 40 CFR 63.133(d) and 40 CFR 63.137(c). The records shall include the date of the measurement, the raw data obtained in the measurement, and the calculations described in 40 CFR 63.120(b)(2), 40 CFR 63.120(b)(3), and 40 CFR 63.120(b)(4). [40 CFR 63.147(b)(3)]

(iv) For Item 1 and Item 3 of table 12 of 40 CFR 63, subpart G, the Permittee shall keep the records approved by the EPA Administrator and AMS. [40 CFR 63.147(b)(4)]

(v) Continuous records of the monitored parameters specified in Item 2 of table 12 and table 13 of 40 CFR 63, Subpart G, and in 40 CFR 63.143(e)(2). [40 CFR 63.147(b)(5)]

(vi) Documentation of a decision to use an extension, as specified in 40 CFR 63.133(e)(2) or 40 CFR 63.133(h), which shall include a description of the failure, documentation that alternate storage capacity is unavailable, and specification of a schedule of actions that will ensure that the control equipment will be repaired or the vessel will be emptied as soon as practical. [40 CFR 63.147(b)(6)]

(vii) Documentation of a decision to use a delay of repair due to unavailability of parts, as specified in 40 CFR 63.140(c), shall include a description of the failure, the reason additional time was necessary (including a statement of why replacement parts were not kept on site and when the manufacturer promised delivery), and the date when repair was completed. [40 CFR 63.147(b)(7)]

(5) The Permittee shall keep records of the daily average value of each continuously monitored parameter for each operating day, except as provided below: [40 CFR 63.147(d)]

(i) For carbon adsorbers, the Permittee shall keep the records specified below instead of daily averages. [40 CFR 63.147(d)(2)]

(A) Records of the total regeneration stream mass flow for each carbon bed regeneration cycle. [40 CFR 63.147(d)(2)(i)]

(B) Records of the temperature of the carbon bed after each regeneration cycle. [40 CFR 63.147(d)(2)(ii)]

(6) If the Permittee uses process knowledge to determine the annual average concentration of a wastewater stream as specified in 40 CFR 63.144(b)(3) and/or uses process knowledge to determine the annual average flow rate as specified in 40 CFR 63.144(c)(1), and determines that the wastewater stream is not a Group 1 wastewater stream, the Permittee shall keep in a readily accessible location the documentation of how process knowledge was used to determine the annual average concentration and/or the annual average flow rate of the wastewater stream. [40 CFR 63.147(f)]

(e) Reporting Requirements

(1) The Permittee shall request approval to monitor appropriate parameters that demonstrate proper operation of the biological treatment unit. The request shall be submitted according to the procedures specified in 40 CFR 63.151(f), and shall include a description of planned reporting and recordkeeping procedures. The Permittee shall include as part of the submittal the basis for the selected monitoring frequencies and the methods that will be used. The EPA Administrator and AMS will specify appropriate reporting and recordkeeping requirements as part of the review of the permit application or by other appropriate means. [40 CFR 63.143(c)]

(2) For a control device used to comply with 40 CFR 63.138(b)(1), (c)(1), (d), (e), (f), or (g) for which the Permittee seeks to monitor a parameter other than those specified in table 11, table 12, or table 13 of 40 CFR 63, Subpart G, the Permittee shall submit a request for approval to monitor alternative parameters according to the procedures specified in 40 CFR 63.151(f) or (g).

(3) The Permittee shall submit the information specified in 40 CFR 63.146(b)(1) through (b)(9) as part of the Notification of Compliance Status required by 40 CFR 63.152(b). [40 CFR 63.146(b)]

(i) For each new and existing source, the Permittee shall submit the information specified in table 15 of 40 CFR 63, Subpart G for Table 8 and/or Table 9 compounds. [40 CFR 63.146(b)(2)]

(ii) For each treatment process identified in table 15 of 40 CFR 63, subpart G that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit the information specified in table 17 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(4)]

(iii) For each waste management unit identified in table 15 of 40 CFR 63, Subpart G that receives or manages a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit the information specified in table 18 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(5)]

(iv) For each residual removed from a Group 1 wastewater stream, the Permittee shall report the information specified in table 19 of 40 CFR 63, Subpart G. [40 CFR 63.146(b)(6)]

(v) For the nonregenerative carbon adsorber, the Permittee shall report the information specified below. [40 CFR 63.146(b)(7)]

(A) The information on parameter ranges specified in 40 CFR 63.152(b)(2) for the applicable parameters specified in table 13 of 40 CFR 63, Subpart G, unless the parameter range has already been established in the operating permit [40 CFR 63.146(b)(7)(ii)(A)]; and either

(B) The design evaluation specified in 40 CFR 63.139(d)(2) [40 CFR 63.146(b)(7)(ii)(B)]; or

(C) Results of the performance test specified in 40 CFR 63.139(d)(1). Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with 40 CFR 63.143; and applicable supporting calculations. [40 CFR 63.146(b)(7)(ii)(C)]

(4) For each treatment process, the Permittee shall submit the information specified below: [40 CFR 63.146(b)(8)]

(i) For Items 1 and 2 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the information specified below: [40 CFR 63.146(b)(8)(i)]

(A) The information on parameter ranges specified in 40 CFR 63.152(b)(2) for the parameters approved by the EPA Administrator and AMS, unless the parameter range has already been established in the operating permit. [40 CFR 63.146(b)(8)(i)(A)]

(B) Results of the initial measurements of the parameters approved by the EPA Administrator and AMS and any applicable supporting calculations. [40 CFR 63.146(b)(8)(i)(B)]

(ii) For Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the information on parameter ranges specified in 40 CFR 63.152(b)(2), unless the parameter range has already been established in the operating permit. [40 CFR 63.146(b)(8)(ii)]

(5) Except as provided in 40 CFR 63.146(b)(9)(iii), for each waste management unit or treatment process, the Permittee shall submit the information specified in either 40 CFR 63.146(b)(9)(I) or 40 CFR 63.146(b)(9)(ii). [40 CFR 63.146(b)(9)]

(i) The design evaluation and supporting documentation specified in 40 CFR 63.138(j)(1). [40 CFR 63.146(b)(9)(i)]

(ii) Results of the performance test specified in 40 CFR 63.138(j)(2). Performance test results shall include operating ranges of key process and control parameters during the performance test; the value of each parameter being monitored in accordance with 40 CFR 63.143; and applicable supporting calculations. [40 CFR 63.146(b)(9)(ii)]

(iii) If the Permittee elects to use one of the technologies specified in 40 CFR 63.138(h), the Permittee is exempt from the requirements specified in 40 CFR 63.146(b)(9)(I) or 40 CFR 63.146(b)(9)(ii). [40 CFR 63.146(b)(9)(iii)]

(6) For each waste management unit that receives, manages, or treats a Group 1 wastewater stream or residual removed from a Group 1 wastewater stream, the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the results of each inspection required by 40 CFR 63.143(a) in which a control equipment failure was identified. Control equipment failure is defined for each waste management unit in 40 CFR 63.133 through 63.137. Each Periodic Report shall include the date of the inspection, identification of each waste management unit in which a control equipment failure was detected, description of the failure, and description of the nature of and date the repair was made. [40 CFR 63.146(c)]

(7) Except as provided in 40 CFR 63.146(f), for each treatment process used to comply with 40 CFR 63.138(b)(1), (c)(1), or (e), the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the information specified in 40 CFR 63.146(d)(1), 40 CFR 63.146(d)(2), or 40 CFR 63.146(d)(3) for the monitoring required by 40 CFR 63.143(b). [40 CFR 63.146(d)]

(i) For Item 1 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the results of measurements that indicate that the biological treatment unit is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(1)]

(ii) For Item 2 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the monitoring results for each operating day during which the daily average value of a continuously monitored parameter is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(2)]

(iii) For Item 3 in table 12 of 40 CFR 63, Subpart G, the Permittee shall submit the monitoring results for each operating day during which the daily average value of any monitored parameter approved in accordance with 40 CFR 63.151(f) was outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(d)(3)]

(8) Except as provided in 40 CFR 63.146(f), for each control device, the Permittee shall submit as part of the next Periodic Report required by 40 CFR 63.152(c) the information specified in either 40 CFR 63.146(e)(1) or 40 CFR 63.146(e)(2). [40 CFR 63.146(e)]

(i) The information specified in table 20 of 40 CFR 63, Subpart G, or [40 CFR 63.146(e)(1)]

(ii) If the Permittee elects to comply with 40 CFR 63.143(e)(2), i.e., an organic monitoring device installed at the outlet of the control device, the Permittee shall submit the monitoring results for each operating day during which the daily average concentration level or reading is outside the range established in the Notification of Compliance Status or operating permit. [40 CFR 63.146(e)(2)]

(9) Where the Permittee obtains approval to use a treatment process or control device other than one for which monitoring requirements are specified in 40 CFR 63.143, or to monitor parameters other than those specified in table 12 or 13 of 40 CFR 63, Subpart G, the EPA Administrator and AMS will specify appropriate reporting requirements. [40 CFR 63.146(f)]

(10) If an extension is utilized in accordance with 40 CFR 63.133(e)(2) or 40 CFR 63.133(h), the Permittee shall include in the next periodic report the information specified in 40 CFR 63.133(e)(2) or 40 CFR 63.133(h). [40 CFR 63.146(g)]

(f) Non-Applicable Requirements

(1) An open or closed biological treatment process in compliance with 40 CFR 63.138 and using 40 CFR 63.145(g) to demonstrate compliance is not subject to the requirements of 40 CFR 63.133 through 40 CFR 63.137. [40 CFR 63.138(a)(3)]

29. Group 26 – Benzene and Cumene Production

(a) Work Practice Standards

(1) For P181 (Benzene Recovery Unit 1732) the following requirements apply:

(i) Steam use in reboilers UE6, UE12, and UE24 shall not exceed 1.888 million lbs per day on a rolling 365-day basis. [Plan Approval No. 99110 and 99129, paragraph 2, dated December 13, 1999]

(ii) For fugitive leak sources (P112 and P113), see Group 07, Section D.8(a). [Plan Approval No. 99110 and 99129, paragraph 3, dated December 13, 1999]

(iii) For wastewater streams (P114, P115, and P123), see Groups 25A, Section D.27.(a), and 25B, Section D.28.(a). [Plan Approval No. 99110 and 99129, paragraph 4, dated December 13, 1999]

(2) For P180 (Cumene Production Unit 1733) the following requirements apply:

(i) The Cumene production rate from the facility shall be limited to 1.3 billion pounds per year (12,000 barrels per day on a 365-day average basis.) However, the cumene production rate shall not exceed 14,000 barrels on any given day. [Plan Approval No. 99127 and 99092, paragraph 2, dated October 29, 1999.

(3) The Total Resource Effectiveness (TRE) index value of each process vent UV-15, CUV-12, CUV-312 shall be greater than 4.0. [40 CFR 63.113(e), AMR XVI.B.1]

(b) Testing Requirements

(1) Testing requirements are covered by requirements cited for Groups 07, Section D.8.(b), 25A, Section D.27.(b), and 25B, Section D.28.(b).

(c) Monitoring Requirements

[25 PA Code §§127.511 & 139, §§114(a)(3) & 504(b) of Clean Air Act]

The Permittee shall monitor the following:

(1) Monitoring requirements are covered by requirements cited for Groups 07, Section D.8.(c), 25A, Section D.27.(c) and 25B, Section D.28.(c).

(2) Daily steam use in UE6, UE12, and UE24.

(3) Daily cumene production.

(4) Any process change [40 CFR 63.118(c)]

(i) Process change does not include: process upsets, unintentional, temporary process change, and changes that are within the range on which the original TRE calculation was based. [40 CFR 63.115(e)]

(d) Recordkeeping Requirements

[25 PA Code §§127.511, 135.21, 135.5 & 139]

The Permittee shall keep the following records:

(1) Recordkeeping requirements are covered by requirements cited for Groups 07, Section D.8.(d), 25A, Section D.27.(d) and 25B, Section D.28.(d).

(2) Combined steam use in UE6, UE12, and UE24 daily and for a rolling 365-day period.

(3) Cumene production daily and for a 365-day rolling average.

(4) Any process change and any recalculation of the TRE index value in accordance with 40 CFR 63.115(e) [40 CFR 63.118(c)]

(e) Reporting Requirements

(1) Reporting requirements are covered by requirements cited for Groups 07, Section D.8.(e), 25A, Section D.27.(e), and 25B, Section D.28.(e).

(2) Within 180 calendar days, the Permittee shall submit report of process change in accordance with Section 29(c)(4) that causes the process vents UV-15, CUV-12, CUV-312 to become a Group 2 process vent with a TRE less than 4.0. The report may be submitted as part of the next periodic report. The report shall include: [40 CFR 63.118(h)]

(i) A description of the process change,

(ii) The results of the recalculation of the TRE index value required under 40 CFR §63.115(e).

(iii) A statement that the owner or operator will comply with the requirements specified in 40 CFR §63.113(d).

30. Group 27 – Emergency Generators and Fire Pumps

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each emergency generator and pump shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unite may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Emissions from the Fire Pump #4 (FP-010) shall not exceed the following:

(i) Non-methane Hydrocarbon and Nitrogen Oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr). [40 CFR 60.4205(c) and Table 4]

(ii) Carbon Monoxide (CO) emissions shall not exceed 3.5 g/kW-hr (2.6 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(iii) Particulate Matter (PM) emissions shall not exceed 0.20 g/kW-hr (0.15 g/hp-hr); [40 CFR 60.4205(c) and Table 4]

(b) Work Practice

(1) Each emergency generator shall be operated only during emergencies, emergency testing, and engine tuning.

(i) Emergencies are defined as when the primary power source for the facility has been rendered inoperable by an unanticipated incident.

(ii) Testing for each generator is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the generator one time per year and is limited to four hours.

(2) Each emergency generator shall operate less than 500 hours per rolling 12-month period. [25 Pa Code §129.93]

(3) Each emergency generator and fire/mitigation pump shall be installed, maintained, and operated in accordance with manufacturer's specifications. [25 Pa Code §129.93]

(4) The Permittee shall only burn No.2 fuel oil in each Fire/Mitigation Pump. The maximum sulfur content of diesel fuel shall be 0.2 % by weight. [25 Pa Code §123.22(e) & AMR III Sec. I & III]

(i) The Fire Pump #4 (FP-010) shall only burn diesel fuel oil. The diesel fuel used in the fire pump shall meet the following requirements:

(A) The diesel fuel used in the emergency generator shall meet the following: [40 CFR 60.4207(b), 40 CFR 80.510(b)]

(1) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(2) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(5) The fire/mitigation pumps shall be operated only during emergencies, testing, and engine tuning. [AMS Installation Permit 11101 dated 6/24/11, AMS Installation Permit 11346-52 dated 2/23/12]

(i) Emergencies are defined as when there is significant drop in pressure in the fire water system or when an actual or suspected release of HF occurs and the mitigation pumps must be activated.

(ii) Testing for the fire pump is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the fire pump one time per year and is limited to four (4) hours.

(6) The Fire/Mitigation Pump shall operate less than 500 hours per rolling 12-month period.

(7) Sound levels produced by the emergency generator or pumps shall not exceed the following:

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property: or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(8) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(9) No testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps shall be performed on a day for which an Air Quality Forecast has predicted an Air Quality Action Day, or on an Air Quality Action Day [AMS XV, Sec III]

(10) Testing and/or tuning of the Emergency Generators and Fire/Mitigation Pumps during the ozone season, when not otherwise prohibited in Section D.30(b)(9), shall only be performed between the hours of 5:00 PM and 11:00 PM, except as follows: [AMS XV, Sec III]

(i) Facilities that are able to demonstrate compliance with Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) can perform testing and/or tuning between the hours of 5:00 PM and 7:30 AM.

(11) The Emergency Generators and Fire/Mitigation Pumps are exempt from the above condition in Section D.30(b)(9) and (10) during emergencies or emergency repairs regardless of the air quality. [AMS XV, Sec III]

(12) The Fire/Mitigation Pumps may be tested on the seventh day after six consecutive Air Quality Action Days, notwithstanding Section D.30.(b)(9) [AMR XV.Sec III.D]

(13) The Fire/Mitigation pump shall: [40 CFR 63.6602, Table 2c]

(i) Change oil and filter every 500 hours of operation or annually, whichever comes first;

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(14) The Permittee shall install a non-resettable hour meter if one is not already installed on each emergency generator and Fire/Mitigation pump.

(15) The Permittee shall develop a maintenance plan for the Fire/Mitigation Pumps which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

(16) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(17) The Belmont Firehouse Williams Pump (fire pump FP-019) shall operate less than 500 hours per rolling 12 month period. The fire pump shall be operated only during emergencies, testing, tuning, and fire training. [AMS Installation Permit 13170 dated 7/31/13]

(i) Emergencies are defined as the endangerment of lives, of equipment, possessions, and inventories by fire.

(ii) Testing for the Belmont Firehouse Williams Pump (fire pump FP-019) is limited to 30 minutes per week.

(iii) Engine tuning may be performed on the Belmont Firehouse Williams Pump (fire pump FP-019) one time per year and is limited to four hours.

(iv) Fire training is limited to 16 hours per rolling 12 month period.

(18) The Belmont Firehouse Williams Pump (fire pump FP-019) shall be subject to 40 CFR 60 Subpart IIII if the fire pump is stationed at a location or a single site at the facility for a period of 1-year or more. [AMS Installation Permit 13170 dated 7/31/13]

(c) Testing Requirements [25 Pa Code §139]

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(d) Monitoring Requirements

(1) The proper operation of each emergency generator and fire pump in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and sulfur content in fuel oil.

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) The Permittee shall provide verification or calculations to demonstrate compliance with the NOx emission limits in Section D.30 (a)(1) on a monthly basis and rolling 12-month basis. Verification may be based on AP-42, manufacturer's certified emission factors, or other AMS-approved emission factors;

(2) Operating hours for each emergency generator and fire/mitigation pump on a 12-month rolling basis

(3) The Air Quality Index (AQI) number or color code shall be determined and recorded when testing or tuning of an Emergency Generator and Fire/Mitigation Pump is conducted, to demonstrate compliance with Section D.30 (b)(9) and (12) [AMS XV, Sec IV]

(4) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(5) Manufacturer's engine compliance certification to demonstrate compliance with the applicable emission standards in 40 CFR 60.4205(b). [40 CFR 60.4211(c)]

(6) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(7) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.30.(b)(13)

(8) Date and location of the Belmont Firehouse Williams Pump (fire pump FP-019) each time the emergency fire pump is relocated to different site at the facility [AMS Installation Permit 13170 dated 7/31/13]

(f) Reporting Requirements

[25 Pa Code §127.442 & AMR I Sec. II]

(1) Any violation of an emission limitation that does not result from a malfunction requiring reporting under Section C.12 shall be reported (by phone call or facsimile transmission) to AMS within 24 hours of detection and followed by written notification within thirty-one (31) days.

31. Group 28. Internal Combustion Engines

(a) Emission Limitations

(1) Nitrogen Oxides (NOx) emission from each source shall be less than 100 lbs/hr, 1000 lbs/day, 2.75 tons per ozone season (May 1 – September 30), and 6.6 tons per rolling 12-month period

(2) Particulate Matter emissions from each unit may not exceed 0.04 grain per dry standard cubic foot [25 Pa Code 123.13(c)(1)(i)]

(3) Carbon monoxide (CO) emissions from each unit may not exceed 1% by volume of exhaust gases [AMR VIII]

(4) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-002, IC-006, IC-007, IC-008, rIC-006, rIC-007) shall be limit to the following: [40 CFR §63.6602, Table 2c]

(i) Each pump and air compressor 100 ≤ hp ≤ 300 hp shall limit the CO concentration in the exhaust to 230 ppmvd or less at 15% O2

(5) Carbon Monoxide (CO) emissions from pumps and air compressors (IC-008) shall not exceed 2.6 g/bhp/hr [AMS Installation Permit 12098-99, dated 8/6/12]

(b) Work Practice

(1) Each units shall only burn fuel types as stated in Table A-1 Group 28.

(2) Sound levels produced by the fire pump shall not exceed the following: [Philadelphia Code Chapter 10-400 (Noise and Excessive Vibration) §10-403(3)]

(i) 5 decibels above background level measured at the property boundary of the nearest occupied residential property; or

(ii) 10 decibels above background level measured at the property boundary of the nearest occupied non-residential property.

(3) Vibration levels shall not exceed 0.15 inches per second beyond any source property boundary. [Philadelphia Code Title 10 Chapter 10-400]

(4) The maximum hours of operation of each pump and air compressor shall be as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Per rolling 12 month average
rIC-001 ≤ 14 BHP pump	7821 hours
rIC-002 ≤ 55 BHP air compressor	2419 hours
rIC-003 ≤ 55 BHP air compressor	2419 hours
rIC-004 ≤ 55 BHP air compressor	2419 hours
rIC-005 ≤ 101 BHP air compressor	2627 hours
rIC-006 ≤ 101 BHP air compressor	2627 hours
rIC-007 ≤ 144 BHP pump	1984 hours
IC-002 (53P-800C pump)	458 hours
IC-005 (FE-5(2) Flood Control Pump Driver)	2300 hours
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	1150 hours
IC-007 (B-2623 Flood Control Pump Driver)	3050 hours
IC-008 (Engine Set 1290 (northside of	360 hours

8 Sep))	

(5) Each pump and air compressor shall meet the minimum Tier level as follows: [AMS Installation Permit 11345, 11362-74 dated 9/14/12, AMS Installation Permit 12000-03 dated 10/12/12]

Sources	Tier Level*
rIC-001 ≤ 14 BHP pump	No Tier
rIC-002 ≤ 55 BHP air compressor	Tier 4
rIC-003 ≤ 55 BHP air compressor	Tier 4
rIC-004 ≤ 55 BHP air compressor	Tier 4
rIC-005 ≤ 101 BHP air compressor	Tier 4
rIC-006 ≤ 101 BHP air compressor	Tier 4
rIC-007 ≤ 144 BHP pump	Tier 3
IC-002 (53P-800C pump)	No Tier
IC-005 (FE-5(2) Flood Control Pump Driver)	No Tier
IC-006 (Godwin 894572/4 Flood Control Pump Driver)	Tier 1
IC-007 (B-2623 Flood Control Pump Driver)	Tier 3
IC-008 (Engine Set 1290 (northside of 8 Sep))	Tier 2

*Tier level are based on 40 CFR 60 Subpart IIII

(6) Each pump and air compressor shall only burn diesel fuel. The diesel fuel shall meet the following requirements assuring compliance with 40 CFR 63.6604, 40 CFR §60.510(b)

(i) The maximum sulfur content of the diesel fuel shall be 15 part per million (ppm);

(ii) The minimum cetane index shall be 40 or maximum aromatic content of 35 volume percent.

(7) For each pump and air compressor less than 100 hp (IC-005, rIC-001, rIC-002, rIC-003, rIC-004): [40 CFR §63.6602, Table 2c, AMS Installation Permit 12000-03 dated 10/12/12]

(i) Change oil and filter every 1000 hours of operation or annually, whichever comes first;

- PES owned diesel pump shall use an oil analysis program as stated in 40 CFR 63.6625(i)

(ii) Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;

(iii) Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

(8) The Permittee shall maintain the pump and air compressor less than 100 hp according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions [40 CFR 63.6625(e)]

(9) The Permittee shall install a non-resettable hour meter if one is not already installed. [assures compliance with 40 CFR 63.6625(f)]

(10) The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to period needed for appropriate and safe loading of engine, not to exceed 30 minutes. [40 CFR 63.6625(h)]

(c) Testing Requirement

(1) If at any time AMS has cause to believe that air contaminant emissions from any source(s) listed in Section A of this permit may be in excess of the limitations specified in this permit, or established pursuant to, any applicable rule or regulation contained in 25 PA Code Article III, the Permittee shall be required to conduct whatever test are deemed necessary by AMS to determine the actual emission rate(s).

(2) The following performance tests methods shall be used to demonstrate compliance with the emission limitations:

(i) U.S.E.P.A. Reference Methods 5 and 202 shall be used for particulate matter.

(ii) U.S.E.P.A. Reference Method 9 shall be used for opacity. At a minimum, opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals.

(iii) U.S.E.P.A. Reference Method 10 shall be used for carbon monoxide.

(iv) ASTM D1266, D129, D1552, D2622 or D270 shall be used for sulfur in fuel.

(v) Compliance determination shall consist of the arithmetic means of results of three separate runs for each source test using U.S.E.P.A. Reference Methods 5/202 and 10. The source test shall be consistent with U.S.E.P.A. designated test methods and 25 Pa Code §139. The Permittee shall submit a test protocol to AMS for approval at least 30 days before the test date. The test report shall be submitted for approval to AMS at least 60 days prior to the test.

(vi) The Permittee may use alternative test methods to those listed in this section if they are given prior approval by AMS in accordance with 25 Pa Code §139.3.

(3) The Permittee shall demonstrate initial compliance with the CO concentration in Section D.31(a)(4) on each pump or air compressor greater than 100 hp (IC-001, IC-002, IC-003, IC-004, IC-006, IC-007, IC-008, IC-009, rIC-006, rIC-007) [40 CFR §63.6610(a) & 40 CFR §63.6612(a)]

(i) The performance test shall comply with 40 CFR 63 Subpart ZZZZ, Table 4 and 40 CFR §63.6620

(ii) During the initial performance test, the Permittee must establish each operating limitation

(d) Monitoring Requirements

The Permittee shall monitor:

(1) The proper operation of each unit in accordance with manufacturers recommended operations and maintenance, operating hours on a 12-month rolling basis, and fuel usage and sulfur content in fuel oil.

(2) Each maintenance conducted on each pump and air compressor to demonstrate that the engines are operated and maintained in accordance to the maintenance plan. [40 CFR 63.6625(e) & 40 CFR 63.6655(e)]

(e) Recordkeeping Requirements

The Permittee shall keep following records;

(1) NOx emission per rolling 12-month period, calculated monthly to demonstrate compliance with Section D.31.(a)(1). Verification shall be based on AP-42 factors, manufacturer's specification, or other AMS approved emission factors.

(2) Daily operating hours, operating hours per rolling 12-month period calculated monthly to assure compliance with Section D.31.(b)(4)

(3) Monthly fuel type and manifests documenting the sulfur content of diesel fuel.

(4) Manufacturer's engine compliance certification to demonstrate compliance with the Tier level in Section D.31.(b)(5)

(5) Occurrence and duration of each malfunction of operation [40 CFR 63.6655(a)(2)]

(6) Oil and Air filter change, inspection of air cleaner, hoses, and belts to demonstration compliance with Section D.31.(b)(7)

(7) Performance tests

(f) Reporting Requirements

(1) For each pump and air compressor, the Permittee shall report, in accordance with 40 CFR 63.6650, each instant in which there is a deviation in the emission limitation or operating limitation, [40 CFR 63.6640(b)]

(2) The Permittee shall submit Semi-Annual Compliance reports beginning with May 3, 2013. [40 CFR 63.6650]

(i) Each deviation of emission limitation and operating limitation that occurs during the reporting period shall be reported and the reports must contain the following:

(A) The total operating time of each pump and air compressor at which the deviation occurred during the reporting period.

(B) Information on the number, duration, and cause of deviations (including unknown cause if applicable), as applicable and corrective action taken

(ii) If there are no deviations from any emission limitations or operating limitations, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period;

SECTION E. OPEN BURNING VARIANCE FOR TRAINING

The Permittee may conduct controlled open burning for the firefighting and employee training as follows: [AMS Approval Letter January 25, 2011]

(1) The Permittee shall notify AMS – Facility Compliance Section at 215-685-7580 at least 24 hours prior to any controlled open burning.

(2) All controlled open burning shall follow the parameters specified in January 5, 2011 letter.

(a) The Permittee must obtain approval from AMS prior to changing any of th procedures listed in the January 5, 2011 letter.

(b) AMS may modify or revoke the open burning variance approval if it is determined necessary to prevent air pollution problems.

SECTION F. NON APPLICABLE REQUIREMENTS

AMS has determined that the following regulations are not applicable to the facility:

Pennsylvania Regulations:

25 Pa Code §123.12 – Incinerators

25 Pa Code §129.12 – Sulfuric Acid Plants

25 Pa Code §129.52 – Surface Coating Processes

25 Pa Code §129.54 – Seasonal Incineration Equipment

25 Pa Code §129.59 – Bulk Gasoline Terminals

25 Pa Code §129.60 – Bulk Gasoline Plants

25 Pa Code §129.65 – Ethylene Production Plants

25 Pa Code §129.82 – Control of VOC from gasoline dispensing facilities (Stage II)

NSPS Regulations:

40 CFR 60 Subpart D – Fossil fuel steam gen. units

40 CFR 60 Subpart D(a) – Fossil fuel electric utility boilers

40 CFR 60 Subpart D(c) – Small I/C/I steam gen. units

40 CFR 60 Subpart J – Petroleum refineries – FCC SO2 (no FCC has triggered the SO2 portion of this rule)

40 CFR 60 Subpart GG – Stationary gas turbines

40 CFR 60 Subpart UU – Asphalt roofing plants (stg. blowing of non-roofing asph.)

40 CFR 60 Subpart XX – Bulk Gasoline Terminals

MACT Regulations:

40 CFR 63 Subpart R – Gasoline Distribution (no gasoline loading in refinery)

Commented [A29]: Refer to application report text Sections 2 and 3.

40 CFR 63 Subpart Y – Mar. Ves. Ldg. – Gaso/Crude/HAP (facility does not trigger loading volume or HAP emission triggers)

40 CFR 63 Subpart DD – Offsite Waste

The following NESHAP regulations have been streamlined as a result of the applicability of related MACT regulations.

40 CFR 61 Subpart J – Bz VHAP Lks (10%w Bz) – 40 CFR 63 Subpart H has subsumed all previous 61/J applicabilities

40 CFR 61 Subpart V – VHAP Equipment Lks – 61/V is the technical section for Subpart J (see comment above)

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

40 CFR 61 Subpart Y – Bz (product) Storage – 40 CFR 63 Subpart G has subsumed all previous 61/Y applicabilities

SECTION G. ALTERNATIVE MONITORING PROTOCOL FOR FLARES.

Commented [A30]: Superseded by Installation Permit No. IP18-000260, IP18-000263, Please remove.

Summary of Alternative Monitoring Protocol/Plan (AMP)
Sunoco Philadelphia Refinery (Girard Point) 1231/1232 Plant Flare System

Submittal Date: July 5, 2010
Due Date: December 31, 2010
Plan Implementation Date: December 31, 2010

Summary

Under a global settlement document entered by Sunoco in USA v. Sunoco, Inc., Civil Action No. 05-02266 (W.D. Pa) (the "Consent Decree"), the 1231/1232 Plant Flare in Philadelphia must be compliant with NSPS Subparts A and J by December 31, 2010. This Document is the Alternative Monitoring Protocol (AMP) submittal required as an option under Appendix H of that Settlement. This document demonstrates the method that Sunoco will use to continuously demonstrate compliance of the 1231/1232 Plant Flare System with the requirements of 40 C.F.R. Part 60, Subparts A and J.

This document identifies all continuous and intermittent streams into the flare system, and for each continuous and intermittent stream, provides the following:

Section 1. - A description of the stream and piping diagram
Section 2. - A statement confirming no crossover or sour gas entry points
Section 3. - An explanation of conditions that ensure low emission rates
Section 4. - Supporting test results using H2S monitoring
Section 5. - A description of how the sampling is representative of normal operation

Section 6. - Identification of a representative process parameter to be monitored as an indicator of stream sulfur
Section 7. - A suggested parameter limit for each gas stream and a review schedule

Note: Attached to this summary are detailed line by line spread sheets that contain each individual flare connection with identifying information. These spreadsheets are segregated into 28 specific areas, by unit or unit area. The P & I D drawings, that locate those connections, are referenced on the spread sheets. These drawings are currently being updated and will be maintained by Sunoco. Due to the sheer volume of information required to support this AMP, this summary sheet's purpose is to provide an overview of the AMP and the methodology that Sunoco used in its creation. The 1231/1232 Plant Flare system may undergo minor, insignificant changes during the life of this AMP. These changes will not significantly alter the AMP. Examples of these changes are: the addition of a new sample point that vents to the flare, the addition of a new relief valve, and/or the addition of a new seal pot. If any changes to the flare trigger additional requirements (such as NSPS Subpart Ja), then those requirements will be incorporated into the AMP as appropriate. If additional monitoring requirements are triggered due to flare modification, Sunoco will comply with those monitoring requirements as appropriate (which may include submission of a revised AMP approval request in accordance with NSPS requirements). Sunoco's Management-Of-Change system will capture any such changes as they occur and the AMP will be updated on an annual basis, if necessary.

Brief description of the 1231/1232 Plant Flare System

The 1231/1232 Plant Flare system services the entire Girard Point side of the Philadelphia Refinery with one exception. The lone exception includes the 433 unit (Alkylation Unit), which is serviced by its own flare. Although there are two distinct flare stacks (1231 and 1232 stacks), only one flare is designed to be operating at any given time. The Girard Point process units serviced by this flare system include the following:

1232 Unit
531 Unit / 8733 Unit
1732 Unit
1733 Unit
1332 Unit
433 Unit (North Butane tank field only)
137 Unit
231 Unit
331 Unit
431 Unit (Including the 431 tank field)

Both flares are steam assisted and are approximately 185 feet above grade with a 24" diameter flare tip. Both flare headers maintain pressure with refinery fuel gas and also have the ability to burn supplemental natural gas. Regarding the 1231 flare, the ability to burn natural gas is inherent in the operational design of this flare. In order for the 1232 flare to burn natural gas, however, a few minor operational adjustments must first be performed.

Both flares are equipped with an IR camera to monitor the presence of a flame. IR camera data is maintained within the refinery PKS system and a real-time status can be accessed using computer monitors in both the Central Control Room and the 1232 Unit blockhouse. In addition, a video camera monitors the operating flare to verify smokeless operation. A video screen of the operating flare can be viewed within the Central Control Room and the 1232 Unit blockhouse.

Each flare has its own knockout drum and the 1231/1232 flare system is operated such that one flare stack is operated at any given time. During normal operation, both flare knockout drums are used in-series with the 1231 flare stack used as the primary flare. Only in the event that the 1232 Unit is shutdown, or when maintenance work is to be performed on the 1231 flare, will the 1232 flare stack be used. Accordingly, the 1231 flare stack is utilized over 90% of the time.

The 1231/1232 flare system is isolated from the other Philadelphia Refinery flare systems, both on the Girard Point and Point Breeze sides of the refinery.

Brief Description of Units Protected by the 1231/1232 Plant Flare System

Fluidized Catalytic Cracking Unit (1232):

The 1232 Fluidized Catalytic Cracking Unit can be divided into three sections; the "cat" side, the recovery side, and the blower/compressor area. On the "cat" side of the process, fresh feed, after being heated, enters the riser where it is vaporized as it is mixed with hot regenerated catalyst from the regenerator. As the feed progresses up the riser, in contact with the catalyst, it is catalytically cracked as 70-75% of the feedstock is converted to gasoline and lighter materials. At the riser outlet, the mixture of catalyst and hydrocarbon vapor enters cyclones in the reactor, where separation of hydrocarbon and catalyst occurs. The hydrocarbon vapors are routed to the Main Fractionator for primary separation. The carbon laden spent catalyst exits the bottom of the reactor cyclone and settles into the Reactor Stripper where rising steam removes any entrained hydrocarbon from the spent catalyst. The catalyst is then transferred into the Regenerator where air contacts the mixture to attain efficient and effective combustion of the carbon off the catalyst. Flue gas and catalyst fines travel up the regenerator and pass through cyclones to recover the entrained catalyst.

The purpose of the Recovery side of the process is to separate and recover the dry gas, C3's, C4's and gasoline (C5+). The net effect of the processing carried out in the Recovery side (i.e. fractionation, absorption and stripping) is that the wet gas and unstabilized gasoline are separated into the desired products. These products consist of heavy catalytic gasoline, light catalytic gasoline, C3's, C4's and dry gas.

The Main Air Blower consists of a 33,000 horsepower electric motor, a gearbox, and axial air compressor. The lube oil, electrical, cooling water, and inlet air filtration systems are also present in this area.

531 Complex

The 531 complex includes four basic subunits/processes including the 531 Amine Treater, the 8733 Sour Water Stripper, the Girard Point fuel gas system, CO Boiler, Selective Catalytic Reduction (SCR) reactor, Wet Gas Scrubber, and the purge Treatment Unit (PTU).

The purpose of the 531 Amine Unit is to remove hydrogen sulfide from the 1232 absorber off-gas stream. The system consists of an absorber tower, two knockout drums, and a flash drum. Sour gas from the 1232 unit is routed through a Sour Gas Knockout Drum and enters the bottom of the C-2 Absorber. A lean amine solution brought in from the 867 Sulfur Recovery Unit flows through Amine Coolers, and enters the C-2 Absorber. In the absorber, the amine solution flows down the column and selectively absorbs H2S from the fuel gas flowing up the column. The C-2 overhead gas, now H2S free, flows through a knockout drum to the refinery fuel gas system. The H2S rich amine from the bottom of the C-2 Tower, combined with rich amine from the 1232 and 231 Units, flows to the D-3 Flash Drum where the steam and hydrocarbon is gassed-off to the 1232 unit. Rich amine is sent to the 867 Sulfur Recovery Unit for regeneration.

Some of the Philadelphia Refinery units produce process water streams that are rich in sulfides, NH3 and phenol. In order to remove these contaminants, the water is routed through the Unit 8733 Sour Water Stripper. Sour water tanks receive water from various units, which is then pumped through a heat

exchanger. The water is then pumped through additional heat exchangers to the top of Stripper Tower C-201. The stripped water is routed to 137 Crude Unit to be used as wash water in the crude feed desalters, while the overhead gas is routed to the 531 COB to be burned.

Any Girard Point process unit gas streams that are to be used for fuel must first flow to the V-10001 Fuel Gas Mix Drum. V-10001 combines and mixes all of these gas streams in order to provide a uniform fuel gas composition for use throughout the refinery. In the drum, liquids are knocked-out and returned to the F-103 Distillate Drum at 1232 FCCU or to the blowdown system. LPG, natural gas or hydrogen can be supplemented to the fuel gas mix system to maintain adequate fuel gas pressure and composition.

The CO Boiler is a pollution control device used to burn the CO in the flue gas from the 1232 FCCU Regenerator. The CO Boiler operates using a combination of refinery fuel gas, sour gas from the 8733 Sour Water Stripper and 1232 unit flue gas CO. This exothermic reaction produces steam for use in the refinery.

UDEX/Benzene Unit (1732)

The primary purpose of the UDEX unit is to recover benzene, which is used to feed the cumene unit (1733). In addition to the end product of benzene, two byproducts are recovered; a toluene mixture and raffinate. Both byproducts are used as gasoline blending components.

The benzene unit is fed by the Depentanizer side draws and bottoms from the catalytic reforming units at the Philadelphia Refinery. The UDEX charge is a combination of benzene, toluene and raffinate. The UDEX unit is essentially split into two sections - the extraction section and the fractionation section. The primary purpose of the extraction section is to separate aromatics from non-aromatics. The fractionation section then separates different aromatics.

In the extraction section, the UDEX charge enters the Extractor Tower where it contacts glycol solvent. The solvent extracts the aromatics, thus separating them from the non-aromatics. The raffinate exits the top of the Extractor Tower, then proceeds through various processes including cooling, coalescing and settling. The aromatic rich solvent exits the bottom of the Extractor Tower and is directed to a Stripper Tower, where steam removes all hydrocarbons from the solvent. The aromatic vapors (called extract) are taken from a side draw and condensed before flowing to an Extractor Receiver, where the extract is separated from wet solvent. The extract is then washed in the extract settler before it is sent to the North Clay Tower Charge Tank. The stripper tower overhead vapors are condensed prior to flowing to the Stripper Receiver.

The fractionation section is fed through Clay Towers from the Clay Tower Charge Tank, in order to remove trace quantities of contaminants. The Clay Tower outlet stream is split between two Benzene Towers, where benzene and toluene are fractionated (separated).

Cumene Unit (1733)

The cumene unit converts propylene and benzene into cumene using catalytic alkylation and trans-alkylation reactions. The unit contains two alkylation reactors which operate in series and one trans-alkylation reactor. The feedstocks (propanes/propylenes and benzene) are first purified because the Zeolite catalyst used in the downstream process is highly susceptible to poisons. Propanes/propylenes (PP) are first treated to remove sodium and light nitrogen compounds, then sent to the Deethanizer to remove light impurities such as ethane, ethylene and water. Downstream purification processes also include the removal of nitrogen, oxygenate and select sulfur compounds, bypassing the PP feed through Arsine Treaters and activated alumina. Benzene feed pretreatment includes pumping the raw material through Clay Treaters, which remove basic nitrogen compounds and water.

In the alkylation reaction, benzene is alkylated with propylene in the liquid phase over a proprietary Zeolite-type catalyst. The alkylation reactor section consists of two reactors with four catalyst beds each. The reactor effluent enters the unit Flash Tower, then continues to the unit Depropanizer, where propane is recovered. Other unit processes include benzene recovery, cumene recovery and DIPB (di-iso-propyl benzene) recovery.

The trans-alkylation reactor converts benzene and a DIPB stream over a proprietary Zeolite-type catalyst to produce cumene. The product stream from this reaction contains cumene and unreacted benzene. The stream is fed to the Recycle Column to separate the benzene and cumene.

Catalytic Reformer Unit (1332)

Light and heavy naphtha, together with stripper overhead gasoline from the 231 Unit, are fed to the Reformer Feed/Effluent Exchangers and then to the Prefractionator. This column separates the lighter components and the heavy ends from the naphtha. The Prefractionator bottoms are sent to the 231 Unit as feed. The Prefractionator off-gasses are sent to the unit 1232 FCCU Low Pressure Distillate Drum (F-103) for recovery. The Prefractionator overhead liquid is caustic treated, then sent to the 431 DIB or used as a gasoline blending stock. The middle cut off the Prefractionator is whole naphtha. A hydrogen stream from the reformer section is mixed with this naphtha before it enters the Hydrobon Feed/Effluent Exchangers. This combined stream then enters a heater and is fed to the reactor. In the reactor, hydrogen reacts with the sulfur and nitrogen compounds in the naphtha to form H2S and NH3, thereby reducing the sulfur and nitrogen in the naphtha to the required low levels specified by the catalyst manufacturer. The reactor effluent enters a series of exchangers before entering the Hydrobon Separator. Hydrogen is removed at this separator and is sent to the hydrogen system. The liquid is sent to the Hydrobon Stripper, where H2S, NH3 and light components are removed and sent to C-703 compressor where it is compressed and sent to 862 Light Ends Unit to recover the hydrocarbon. The stripper bottoms are sent to the reformer section as feed.

The purpose of the Reformer is to increase the octane of treated naphtha. Treated naphtha from the Hydrobon is mixed with a recycled hydrogen stream. The reaction mix is heated in exchangers before entering the first charge heater. The heater reactor feed then enters Reactor #1. Because the reaction is endothermic, the mix leaving Reactor #1 is heated in the 2nd charge heater before entering Reactor #2. The mix leaving the second reactor is once again heated in the 3rd charge heater and then enters Reactor #3. The mix leaving Reactor #3 is sent directly to Reactor #4 without any additional preheating. Reactor catalyst consists of an alumina base with platinum and rhenium metals. A chloride chemical is injected into the feed before the reactors, to promote the catalyst activity. The reforming reaction causes a rearrangement of the naphtha molecules, resulting in an octane boost of the naphtha and the formation of benzene, toluene, and hydrogen. The reactor effluent leaves Reactor #4 and, after heat exchange transfer, enters the Product Separator Drum. In this drum, the hydrogen is separated from the reaction mix. The liquid leaving the Product Separator enters the unit Depropanizer, where propane and lighter materials are separated and sent to the 862 unit for propane recovery. The Depropanizer bottoms are sent to the unit Debutanizer. The Debutanizer produces an overhead butane/pentane liquid which is sent to the 431 DIB to recover isobutane. The bottoms from the Debutanizer is called Reformate, which is fed to the Depentanizer, where all of the benzene and some toluene is separated and sent to the 1732 UDEX plant as feed. The Depentanizer bottoms are sent to gasoline blending.

433 Complex Butane Storage Tankfield

The 433 Unit Complex Butane Storage Tankfield is a system of piping manifolds, pumps and storage spheres designed to receive, store, and transfer butanes in the Philadelphia Refinery. The system is capable of receiving butane directly from several Girard Point process units, then manifolding the transfer a multitude of ways to any of the six storage spheres. The spheres also serve as supplemental feed tanks to three process units in the Girard Point complex. In addition, butanes may be received for storage or transferred from/to Point Breeze and the Schuykill River Tank Farm.

Crude Unit (137)

Raw crude is pumped to this unit and split into two parallel trains. It is then mixed with water and pumped to two spherical Desalters via exchangers. The crude is then fed to a surge drum, where the remaining water and light components of the crude is flashed. The crude is next pumped through an elaborate feed/product heat exchanger train to the Flash Drum, where approximately ¼ of the heated crude is vaporized and sent

directly to the Atmospheric Tower. The remaining liquid crude is heated in the F-1 Atmospheric Furnace before being sent to the Atmospheric Tower. The light ends from the Atmospheric Tower are compressed and mixed with light naphtha in the Recontact Drum to remove light products. The light gas from the Recontact Drum is sent to the FCCU for further recovery. The light naphtha is pumped to the Debutanizer Tower, where additional light ends are removed.

The bottoms from the Atmospheric Tower are heated in the F-2 and F-3 Vacuum Furnaces and then sent to the Vacuum Tower. The non-condensable gases from the Vacuum Tower are currently sent to the F-1 Atmospheric Furnace as an additional fuel source (Note: In the future, these gases will be sent to the 1232 Unit CO Boiler). The condensable gases are sent to crude suction or the heavy furnace oil line.

Gulfiner Unit (231)

The purpose of the 231 Gulfiner is to remove sulfur from distillate utilizing hydrogen in the presence of a catalyst. The Gulfiner is capable of treating virgin distillate from the 137 Crude Unit, as well as Light Cycle Oil from the 1232 FCCU.

Distillate feed is pumped through a series of preheat exchangers in order to recover heat and prepare the feed for treating. The feed, as well as a stream of hydrogen from 1332 Reformer and recycled hydrogen from 231, is heated in the charge heater. The hydrogen and distillate combine and enter two parallel reactors where the sulfur in the distillate is converted to H2S. The reactor effluent is cooled and sent through two separators which separate the distillate from the gas stream containing hydrogen and H2S. The gas stream leaves the separators and enters the Recycle Gas Amine Absorber where H2S is removed using Amine. The hydrogen is recycled through the system.

The liquid from both separators is pumped to the Stripper where both H2S and water are removed, and the flash point is controlled. Under normal operation, the product stream is mixed with 859 Hydrotreater USLD product, treated for pour and rust, and pumped to a Tank Farm.

Gasoline and overhead vapors are products taken off the Stripper overhead. The Stripper overhead gas is treated with Amine in the Fuel Gas Amine Absorber to remove H2S before being sent to the J-405 fuel gas compressor and eventually to C-703 recovery compressor. The gasoline is sent to a 1332 Reformer charge tank.

Fresh (lean) Amine to GFU 231 is supplied by Point Breeze 867 Unit. Two rich Amine streams from the Fuel Gas Absorber and the Recycle Gas Absorber are sent back to 867 where they are treated to remove H2S.

ISOM Unit (331)

The unit uses a Platinum Hydroisomerization Catalyst, under a hydrogen atmosphere in a fixed bed reactor, to complete the conversion of normal butane to isobutane. The butane feed for this unit comes from the sidedraw stream off the 431 Deisobutanizer Tower, and the defluorinated butane stream from the 433 Unit. As the ISOM feedstock must be essentially free of contaminants, butane dryers are used to remove residual moisture and sulfur from the feed stream.

The hydrogen/butane feed stream is injected with a small amount of chloride catalyst promoter and fed though a reactor preheat train, where it exchanges heat with the reactor effluent. After the reactor effluent passes through the preheat exchangers, it is fed to the stabilizer tower, where the isomerate product is separated from the hydrogen and light hydrocarbons. The hot isomerate is usually routed directly to the 431 DIB Tower, however it can be cooled and stored in the North Butane Tank Field. The stabilizer off-gas is routed to a scrubber, where circulating caustic neutralizes the hydrochloric acid generated in the reaction.

Light Ends Unit (431)

Butane feed enters a Deisobutanizer Tower (DIB), which fractionates the feed into isobutane, normal butane, and a bottoms stream containing pentanes and heavier hydrocarbons. The DIB tower contains four beds of packing material and no trays. Pumps transfer material from the DIB Feed Tank to the Feed/Bottoms Exchangers before entering the DIB tower. Once the feed leaves the tubeside of an exchanger, it enters the tower between the third and fourth beds. Raw material fed directly from the 331 ISOM stabilizer bypasses the preheaters and is injected below the top bed. DIB bottoms are cooled and normally sent to the Schuykill River Tank Farm for use in gasoline blending. The DIB sidedraw stream is pressured out of the tower through condensers, which is eventually transferred to the 331 ISOM Feed Tank. Overhead material from the DIB is condensed and then routed to the Reflux Drum. A chromatograph is provided to monitor the composition of all product streams.

Section 1. - A description of the stream and piping diagrams (actual flare connections are attached).

Below is a description of the scope in identifying flare connections.

Flare headers were walked down in the field and matched up with the Process and Instrument Diagrams (P& ID's). All connections to the flare headers were analyzed and logged into spread sheets for that flare. Connections that were found and deemed unnecessary were either physically divorced from the flare by a blind, or the valve at the flare header was closed and a car seal was placed on that valve. The AMP for the 1231/1232 Unit Plant Flare system includes approximately 455 valves with car seals. In general, car-sealed valves will only be opened for special maintenance activities such as a shutdown. These car-sealed valves will be monitored monthly to verify that the valves have not been opened and that the seals are still intact. Valves that are found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car seals broken to support maintenance activities (such as preparing an exchanger for maintenance) will not be reported in the semiannual report. Those car seals will be replaced when the maintenance activity is completed.

The attached spread sheets have a line by line analysis of the flare connection on the 1231/1232 Unit Flare system.

Section 2. - A statement confirming no crossover or sour gas entry points.

There are no crossovers or entry points where H2S can be introduced into the 1231/1232 Plant Flare System.

As noted previously, with the exception of the 433 Unit, the 1231/1232 Plant Flare System services the entire Girard Point side of the Philadelphia Refinery and this flare system is isolated from both the 433 Unit Flare and all other Point Breeze flare systems.

There are a total of 19 sample points where a minimal volume of H2S is vented back to the flare as part of the sampling process (calculations of SO2 from these sample points, required under Appendix H of the Consent Decree, are included as a separate spread sheet). Each of these connections are individually listed in Section 3 and Section 4, and all sample results are included with this summary document.

Section 3. - An explanation of conditions that ensure low emission rates. On the attached spread sheets there are line by line listings of the flare connections. A summary of the connections is below.

Fluidized Catalytic Cracking Unit (1232) Steamdown Header to the Flare

Refer to the spread sheet for the line by line analysis. For the Unit 1232 Steamdown Header portion of the 1231/1232 Plant Flare system, there are 107 connections. Of the 107 connections, 105 have been car-sealed closed. Of the remaining 2 components, both are fuel gas connections.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2-106 are car-sealed closed. In certain circumstances, where operationally appropriate, a group of maintenance vents were isolated by using a single car-seal.
- Item #'s 1 and 107 are fuel gas connections that originate from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Fluidized Catalytic Cracking Unit (1232) "Cat" Recovery Side Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 "Cat" Recovery Side Flare Header portion of the 1231/1232 Plant Flare system, there are 70 connections. Of the 70 connections; 33 are either car-sealed closed or have been taken out-of-service (OOS) and blinded/capped, 16 are pressure relief valves, 11 are seal pot connections and 1 involves an exempt (steam) source. Of the remaining 9 connections: 2 represent analyzer vents containing H2S streams of <20 ppm each, 2 are bypass valves containing H2S streams of <20 ppm each, 2 are pressure control valves, 2 are analyzer vents containing H2S streams of >162 ppm each, and 1 is an analyzer vent containing an H2S stream between 20-100 ppm..

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 7, 9, 11, 13, 17, 20, 21, 23, 27, 28, 31-34, 36-41, 59-66, 68 and 69 are car-sealed closed. Item #'s 2, 35, and 52 have been taken OOS and capped/blinded.
- Item #'s 6, 8, 10, 12, 16, 18, 19, 22, 24, 29, 51, 53, 55-57, and 67 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 3, 4, 5, 14, 15, 25, 26, and 42-45 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

- Item # 70 is a steam valve which is exempt from monitoring.

- Item #'s 48 and 50 represent analyzer vents each containing H2S streams less than 20 ppm. Relative to the E-304 Bottoms BB Analyzer Vent (#48), the average of 14 samples was 2.9 ppm H2S. The average of 14 samples concerning the Deethanizer Bottoms PP analyzer Vent (#50) was <1 ppm H2S. All sample results are included.

- Item #'s 30 and 54 are bypass valves each containing H2S streams less than 20 ppm. Sample results (included) for these stream were both <3 ppm H2S.

- Item #'s 1 and 58 are pressure control valves that may relieve pressure to the flare during a malfunction. Both pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. Pressure controllers are utilized in the same fashion as emergency relief valves, however provide the added benefit of a more stable overpressure relief with the ability to avoid any potential reseating problems that can arise with emergency relief valves. Both streams contain greater than 162 ppm H2S. Item #1 is the F-103 pressure controller and item #58 is the pressure controller for the E-201 Absorber. Both control valves are fully instrumented and the data collection system will flag when a malfunction causes these valves to open to the flare. When either of these valves open up to the flare, Sunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree.

- Item #'s 46 and 47 represent analyzer vents each containing H2S streams > 162 ppm. However, the contribution of SO2 from these sources are minimal and the total SO2 emissions estimated from purging each sample point to the flare are well under the 100 lbs/day allowed under Appendix H of the Consent Decree.

- Item #49 is an analyzer vent containing an H2S stream between 20-100 ppm H2S. This is the T-9 Bottoms BB vent and the contribution of SO2 from this source is minimal with the total SO2 emissions estimated from purging each sample point to the flare is well under the 100 lbs/day allowed under Appendix H of the Consent Decree.

Fluidized Catalytic Cracking Unit (1232) CO Boiler Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 CO Boiler Flare Header portion of the 1231/1232 Plant Flare system, there are 7 connections. Of the 7 connections, 1 has been car-sealed closed, 1 is a pressure relief valve and the 5 others represent flare vent latch valves.

The item numbers below can be used to locate the item on the spread sheet.

- Item # 2 is car sealed closed.

- Item # 1 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 3-7 are flare vent latch valves associated with the 1232 CO Boiler. Of the five valves only one (#5) is associated with H2S in excess of 162 ppm; for the other four latch valves, sour gas concentrations typically range from 20-100 ppm H2S. Latch valves are a type of pressure control valve that may relieve pressure to the flare during a malfunction. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. The item #5 control valve is instrumented and the refinery data collection system will flag when a malfunction causes this valve to open to the flare. When this valve opens up to the flare, Sunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree. Regarding the other four latch valves, operators are currently able to determine when these valves trip using various other means (e.g. alarms, flow monitors etc.).

Fluidized Catalytic Cracking Unit (1232) T-9 Area / E-209 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 T-9 Area / E-209 Flare Header portion of the 1231/1232 Plant Flare system, there are 9 connections. Of the 9 connections, 5 have been car-sealed closed, 1 is a pressure relief valve and the remaining three are associated with the Debutanizer Overhead Condenser Vent (2) and the Debutanizer Drum Vent (1).

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 1-4 and 9 are car-sealed closed.

- Item # 5 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 6 and 7 are vent valves associated with the Debutanizer Overhead Condenser Vent and item #8 is associated with the Debutanizer Drum Vent. Sample results (included) for these three connections are all less than 1 ppm H2S.

Fluidized Catalytic Cracking Unit (1232) Deethanizer Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1232 Deethanizer Flare Header portion of the 1231/1232 Plant Flare system, there are 12 connections. Of the 12 connections, 5 are car-sealed closed, 4 are seal pot connections, 2 are associated with drum flare vents and 1 is a pressure relief valve.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 4, 5, 7 and 9 are car-sealed closed.
- Item #'s 1, 3, 6, and 8 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.
- Item #'s 10 and 11 are drum flare vent valves. Item #10 is associated with the Deethanizer Reflux Drum and Item #11 is associated with the Feed Surge Drum. In all stream samples collected for these two connections, H2S was never detected (0 ppm).
- Item # 12 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

Unit 8733 Flare Header to the 1232 Flare

Refer to the spread sheet for the line by line analysis. For the Unit 8733 Flare Header portion of the 1231/1232 Plant Flare system, there are 5 connections. Of the 5 connections, 4 have been either car-sealed closed or taken out-of-service and capped/blinded, and the other is a pressure control valve associated with the Reflux Accumulator Pressure Control Vent.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 3 and 5 are car-sealed closed and Item # 4 has been taken out-of-service and capped/blinded.
- Item # 1, associated with the Reflux Accumulator Pressure Control Vent valve, is a pressure control valve that may relieve pressure to the flare during a malfunction. This connection is associated with a sour gas stream. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. This control valve is instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. When this valve opens up to the flare, Sunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports

will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree.

Unit 531 V-10001 Mix Drum Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 531 V-10001 Mix Drum Flare Header portion of the 1231/1232 Plant Flare system, there are 11 connections. Of the 11 connections, 6 are pressure relief valves, 4 are either car-sealed closed or have been taken out-of-service and blinded/capped, and 1 is a fuel gas connection.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 1, 2, 3, 6, 7, and 9 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 4, 8 and 11 are car-sealed closed. Item # 5 has been taken out-of-service and capped/blinded.

- Item # 10 is a fuel gas connection that originates from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Unit 531 V-10001 Mix Drum Blow-down Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 531 V-10001 Mix Drum Blow-down Flare Header portion of the 1231/1232 Plant Flare system, there are 2 connections. Of the 2 connections, 1 is car-sealed closed and the other represents an exempt liquid stream.

The item numbers below can be used to locate the item on the spread sheet.

- Item #2 is car sealed closed.

- Item #1 represents the liquid level control valve to the blow-down to Drum UV-1010 and is exempt because it is a liquid stream.

Unit 531 Flare Header to the 1232 Flare Continuous / Intermittent Relief Systems

Refer to the spread sheet for the line by line analysis. For the Unit 531 Flare Header Continuous / Intermittent Relief Systems portion of the 1231/1232 Plant Flare system, there are 4 connections. Of the 4 connections, 2 are car-sealed closed, 1 is a pressure relief valve and the other is involved with an exempt stream (steam).

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2 and 4 are car-sealed closed.
- Item # 3 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).
- Item #1 is a steam line connection, thus exempt from monitoring.

Unit 531 Sweet Gas PV-795 Control Valve to the 1232 Flare

Refer to the spread sheet for the line by line analysis. For the Unit 531 Sweet Gas PV-795 Control Valve portion of the 1231/1232 Plant Flare system, there are 2 connections. Of the 2 connections, 1 is car-sealed closed and the other is a pressure control valve associated with the C-2 Absorber.

The item numbers below can be used to locate the item on the spread sheet.

- Item # 2 is car-sealed closed.
- Item #1 is a pressure control valve associated with the C-2 Absorber which is intermittently activated (estimated 100 times per year). Samples of the associated gas stream (included) averaged less than 20 ppm H2S thus are exempt. In addition, this control valve is fully instrumented and the refinery data collection system records the valve position.

Discussion of H2S Levels in the 1732 / 1733 Units

The following 8 sections contain the Unit 1732/1733 contributions to the 1231/1232 flare system. Overall, the nature of the upstream processes dictate that sulfur not be present in their feed streams. Units 1732 and 1733 are ultimately fed by the Unit 1332 and 860 Reformers. Feed to 1332 and 860 Reformers are hydrotreated to convert all the organic sulfur molecules to H2S and then the feed is stripped to remove the H2S prior to feeding the reformers. Accordingly, the feed naphtha to 1332 and 860 is, on average, less than 0.1 ppmw sulfur. This low level of sulfur in the feed translates into low levels of sulfur both in the 1732 benzene rich feed stream and the 1732 benzene product feeding the 1733 Cumene Unit.

Regarding Unit 1732, the feed streams from the reforming units contain less than 0.1 ppm H2S. This unit employs a liquid/liquid extraction process using tetraethylene glycol with no catalyst reactions occurring. Regarding Unit 1733, the PP feed stream from the Catalyst Cracking Unit (1232) is amine and caustic treated to remove 99% of the sulfur

species. The PP feed stream is then fed to this unit where it is treated through a copper oxide / zinc oxide catalyst bed that adsorbs any remaining sulfur. Hence, negligible amounts of H2S are present when the PP feed enters the cumene unit reactors and towers. Samples are routinely collected of the PP feed stream entering the unit with the average sulfur content less than 1 ppmw.

As described above, the feed streams to these units contain negligible amounts of H2S. Downstream processes in both units do not involve the generation of H2S. Finally, samples have historically and continue to show negligible H2S concentrations throughout these units (< 5 ppm).

Unit 1732 Steamdown Flare Header to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1732 Steamdown Flare Header to UV-698 portion of the 1231/1232 Plant Flare system, there are 48 connections. Of the 48 connections, 46 are car-sealed closed or have been taken out-of-service and blinded/capped, 1 is involved with an exempt stream (liquid), and the other is associated with the UV-16 Solvent Regenerator Ejector vent.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 3, 6, 7, 10, 15, 16, 19, 21, 27, 29, 30, and 36-39, are car-sealed closed. Item #'s 1, 2, 4, 5, 8, 9, 11-14, 17, 18, 20, 22-26, 28, 31-34, 40, 41, and 43-48 have been taken out-of-service and capped/blinded.

- Item #42 is a liquid stream connection, thus exempt from monitoring.

- Item #35 is a valve associated with the UV-16 Solvent Regenerator vent and, based upon engineering judgment, would contain negligible amounts (<5 ppm) of H2S.

Unit 1732 UV-8 Flare Header to UV-1010

Refer to the spread sheet for the line by line analysis. For the Unit 1732 UV-8 Flare Header to UV-1010 portion of the 1231/1232 Plant Flare system, there are 43 connections. Of the 43 connections, 15 are pressure relief valves, 13 are car-sealed closed or have been taken out-of-service and blinded/capped, 9 represent sampling stations, 5 are associated with receiver vents, and 1 is associated with an aromatics receiver pump.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 5, 11, 12, 14, 16, 17, 18, 22, 26 and 38-42 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 3, 4, 6, 9, 13, 15, 19, 20, 23, and 24 are car-sealed closed. Item #'s 1, 8, and 21 have been taken out-of-service and capped/blinded.

- Item #'s 25, and 27-34 are sampling stations in which all samples (included), are less than 5 ppm H2S.

- Item #'s 7, 10, and 35-37 are all associated with receiver vents in which all sample results (included) are less than 5 ppm H2S.

- Item # 43 is associated with the unit Aromatics Recovery Pump in which all samples (included) are less than 5 ppm H2S.

Unit 1732/1733 Miscellaneous Connections to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1732/1733 Miscellaneous Connections to UV-698 portion of the 1231/1232 Plant Flare system, there are 2 connections. Of the 2 connections, 1 is car-sealed closed and the other is associated with an exempt (liquid) stream.

The item numbers below can be used to locate the item on the spread sheet.

- Item # 1 is car-sealed closed.

- Item #2 is a liquid stream connection, thus exempt from monitoring.

Unit 1733 CU-V18 Flare Header to UV-1010

Refer to the spread sheet for the line by line analysis. For the Unit 1733 CU-V18 Flare Header to UV-1010 portion of the 1231/1232 Plant Flare system, there are 94 connections. Of the 94 connections, 41 are car-sealed closed or have been taken out-of-service and blinded/capped, 36 are pressure relief valves, 11 represent sampling stations, 3 are related to pressure control valves, 2 related to miscellaneous vents and 1 is a seal pot.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 1, 3, 5, 7, 9, 11, 15, 18, 22, 24, 26, 29, 30, 32, 34, 38, 40, 42, 44, 46, 48, 50, 52-54, 57, 59, 63, 65, 68, 71, 77, 79, 80, 84 and 87-90 are car-sealed closed. Item #'s 16 and 55 have been taken out-of-service and capped/blinded.

- Item #'s 2, 4, 6, 8, 10, 14, 17, 21, 23, 25, 31, 33, 37, 39, 41, 43, 45, 47, 49, 51, 56, 58, 62, 64, 67, 70, 73-76, 78, 81-83, 91 and 92 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result

of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 12, 13, 19, 20, 27, 28, 66, 69, 72, 93 and 94 are sampling stations / sampling vents in which all samples (included) are less than 5 ppm H2S.
- Item #'s 36, 85 and 86 are pressure control valves in which H2S samples (included), revealed no or negligible (< 1.0 ppm) H2S streams.
- Item #'s 60 and 61 represent miscellaneous vents in which H2S samples (included), revealed no or negligible (< 1.0 ppm) H2S streams.
- Item #35 is a seal pot.

Unit 1733 Steamdown Flare Header to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1733 Steamdown Flare Header to UV-698 portion of the 1231/1232 Plant Flare system, there are 64 connections. Of the 64 connections, 61 are car-sealed closed or have been taken out-of-service and blinded/capped, and the other 3 represent miscellaneous connections further described below.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 6, 13-15, 18-21, 24-26, 32, 33, 35, 40, 43-46, and 49-56 are car-sealed closed. Item #'s 1-5, 7-12, 16, 17, 22, 23, 27-30, 36-38, 41, 42, 47, 48, and 57-64 have been taken out-of-service and capped/blinded.
- Item #'s 31, 34 and 39 represent miscellaneous connections in which all sample results (included) revealed no or negligible levels of H2S. Item # 31 is a PP Feed Sample Station. Item # 34 is a Cumene Receiver vent and Item # 39 is a valve associated with the Degassing Drum.

Unit 1733 Seal Pot Vents

Refer to the spread sheet for the line by line analysis. For the Unit 1733 Seal Pot Vents portion of the 1231/1232 Plant Flare system, there are 34 connections. Of the 34 connections, 31 are seal pots and the other 3 are sampling stations.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 1-11, and 15-34 are all seal pots. As previously discussed, seal pots are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

- Item #'s 12-14 are sampling stations in which all samples (included) averaged < 5 ppm H2S in the streams.

Unit 1733 PP Bullets Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1733 PP Bullets Flare Header portion of the 1231/1232 Plant Flare system, there are 8 connections. Of the 8 connections, 4 are car-sealed closed, 2 are pressure relief valves and 2 are associated with the truck unloading station vents.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 1 and 6-8 are car-sealed closed.

- Item #'s 2 and 3 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 4 and 5 are vents associated with the unit truck unloading station in which all samples (included) revealed no or negligible (< 1 ppm) levels of H2S.

Unit 1733 CU-V8 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 1733 CU-V8 Flare Header portion of the 1231/1232 Plant Flare system, there is 1 connection which is a pressure control valve.

The item numbers below can be used to locate the item on the spread sheet.

- Item # 1 is a pressure control valve associated with the Depropanizer Overhead Receiver in which all samples (results included) revealed 0 ppm of H2S in this stream.

Unit 1332 Blowdown Header to UV-1010

Refer to the spread sheet for the line by line analysis. For the Unit 1332 Blowdown Header portion of the 1231/1232 Plant Flare system, there are 71 connections. Of the 71 connections, 65 are either car-sealed closed or have been taken out-of-service and blinded/capped, 5 are pressure relief valves and 1 is a fuel gas connection.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 5-7, 9-16, 18-23, 25-35, 37-42, 46, 47, 51, 53-61, and 63-71 are car-sealed closed. Item #'s 1, 3, 4, 36, 43-45, 50 and 52 have been taken out-of-service and capped/blinded.

- Item #'s 8, 17, 24, 48 and 49 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 104(a)(1).

- Item # 62 is a fuel gas connection with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

Unit 1332 Flare Header HP-27-G

Refer to the spread sheet for the line by line analysis. For the Unit 1332 Flare Header HP-27-G portion of the 1231/1232 Plant Flare system, there are 64 connections. Of the 64 connections, 28 are either car-sealed closed or have been taken out-of-service and blinded/capped, 6 are pressure relief valves, 5 are associated with exempt streams, 3 are seal pots, 2 are fuel gas connections and 1 is associated with an analyzer building calibration gas vent. Of the remaining 19 components: 10 are vent valves associated with unit compressors; 4 are manual valves associated with reactor catalyst sample chamber vents; 3 are Dopak sample station manual valves associated with vessel 603; one is a Dopak sampling station manual valve associated with the P-3 Hydrobon Charge vent; and 1 is a manual valve on the FRC-708 sampling station.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 4, 6, 8-11, 13, 14, 28, 37-39, 43, 44, 46, 58, and 59 are car-sealed closed. Item #'s 25, 45, 47-50, and 54-57 have been taken out-of-service and capped/blinded.

- Item #'s 1, 3, 24, 26, 27, and 51 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 5, 7, 12, 36 and 64 contain an exempt stream (e.g. liquid, steam etc.).

- Item #'s 60 through 62 are seal pots.

- Item #'s 52 and 53 are fuel gas connections with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

- Item # 33 is an analyzer building calibration gas vent associated with AH-739. Manufacturer specification sheets revealed no/negligible levels of H2S in the stream.

- Item #'s 15-22 are 38C-703 Compressor seal vent connections, which are all crank or packing vents under a nitrogen purge on the flare header side of the packing. During normal operation, tight seals prevent process gas leaks through these connections to the 1231/1232 flare system. Engineering calculations reveal that the contribution of SO2 from these sources at a common, downstream sampling point during normal operation is minimal. However, in order to model worst case conditions, Sunoco assumed a total packing failure of the connection with the highest H2S concentration at the maximum flow rate. Assuming these worst case conditions, the total contribution of SO2 would never exceed 20.26 lbs/day. Accordingly, these connections were placed onto the *de minimus* source list (spreadsheet of all sources attached) and the total of all *de minimus* sources is well below the 100 lbs/day allowed under Appendix H of the Consent Decree.

- Item #'s 34 and 35 are manual vent valves associated with the C-400 compressors located within the reformer side of the unit. Sampling has historically shown and continue to show < 2 ppm H2S in the reformer side of the 1332 unit.

- Item #'s 29-32 are manual valves associated with the V-400 through V-403 reactor catalyst sample chamber vents. These valves, as described in the "bullet" above, are located within the reformer side of the unit and H2S levels do not exceed 2 ppm.

- Item #'s 40-42 are Dopak sample station manual valves associated with vessel 603. These connections are also located within the reformer side of the unit and H2S concentrations do not exceed 2 ppm.

- Item # 63 is a Dopak sampling station manual valve associated with the P-3 Hydrobon Charge vent. At this point within the unit, the H2S has already been stripped-off and only low levels of mercaptan sulfur would be present here.

- Item # 23 is a manual valve on the FRC-708 sampling station. Catalyst sampling has shown < 1 ppm H2S associated with this connection.

Unit 1332 Steamdown Header to UV-698

Refer to the spread sheet for the line by line analysis. For the Unit 1332 Steamdown Header to UV-698 portion of the 1231/1232 Plant Flare system, there are 33 connections. Of the 33 connections, 27 are either car-sealed closed or have been taken out-of-service and blinded/capped, 4 are associated with unconnected lines, 1 is a manual valve associated with a depropanizer overhead sampling station and 1 is a specific gravity analyzer.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 22-26 and 30-33 are car-sealed closed. Item #'s 2-7, 9-18, 27 and 29 have been taken out-of-service and capped/blinded.

- Item #'s 1 and 19-21 are associated with lines that are not connected. .

- Item #8 is a manual valve associated with the V-601 depropanizer overhead sampling station. H2S levels during normal operation would not exceed 2 ppm.

- Item # 28 is a specific gravity analyzer that is located within the reformer section of the unit. As discussed in the previous section, H2S levels in this area do not exceed 2 ppm.

Unit 433 North Butane Field Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 433 North Butane Field Flare Header portion of the 1231/1232 Plant Flare system, there are 41 connections. Of the 41 connections, 21 are either car-sealed closed or have been taken out-of-service and blinded/capped, 2 are seal pots, and 16 are associated with sphere pressure control valves or associated alarm testing vent lines and/or associated by-pass lines. There is also 1 pressure relief valve and 1 pressure control valve associated with V-53 (Fresh Additive Drum PCV).

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 1-6, 17-23, 39 and 41 are car-sealed closed. Item #'s 7, 10-13, and 16 have been taken out-of-service and capped/blinded.

- Item #'s 14 and 15 are seal pots.

- Item #'s 8, 9, 24-37 are all associated with butane spheres. These connections are either butane sphere pressure control valves, by-pass line valves or alarm testing vent lines. All sample results (included) averaged less than 20 ppm H2S for each sphere. In most cases, the sample result showed 0 ppm H2S.

- Item # 38 is a pressure relief valve. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item # 40 is a pressure control valve associated with the V-53 Fresh Additive Drum. There is no H2S associated with this stream.

Unit 137 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 137 Flare Header portion of the 1231/1232 Plant Flare system, there are 41 connections. Of the 41

connections, 26 are either car-sealed closed or have been taken out-of-service and blinded/capped, 11 are pressure relief valves, 2 are seal pots, 1 is associated with an exempt stream (steam) and 1 is a pressure control valve.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2-8, 11, 12, 16, 18, 20, 23-27, 33 and 41 are car-sealed closed. Item #'s 15, 31, 32, 34, 35, 36, and 39 have been taken out-of-service and capped/blinded.
- Item #'s 1, 9, 10, 13, 14, 17, 19, 30, 37, 38 and 40 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).
- Item #'s 28 and 29 are seal pots.
- Item # 21 is associated with an exempt source (steam).
- Item # 22 is a pressure control valve that may relieve pressure to the flare during a malfunction. This connection is associated with a sour gas stream. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. This control valve is instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. When this valve opens up to the flare, Sunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree. .

Unit 231 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 231 Flare Header portion of the 1231/1232 Plant Flare system, there are 15 connections. Of the 15 connections, 8 are either car-sealed closed or have been taken out-of-service and blinded/capped, 2 are pressure relief valves, 2 are associated with compressor vents, 1 is a fuel gas knockout drum condensate vent, 1 is associated with an exempt stream (steam) and 1 is a pressure control valve.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 5, 6, 7, 9, and 11 are car-sealed closed. Item #'s 13 and 14 have been taken out-of-service and capped/blinded.
- Item #'s 1 and 10 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage

or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 3 and 4 are compressor seal oil trap vents in which all samples collected (included) were not detected for H2S.

- Item # 15 is a fuel gas knockout drum condensate vent where an average of H2S samples collected (included) was 9 ppm.

- Item # 12 is associated with an exempt source (steam).

- Item # 8 is a pressure control valve which may relieve pressure to the flare during a malfunction. According to engineering judgment, the associated stream through this valve would contain between 20-100 ppm H2S. Pressure controllers are designed and set to relieve overpressure from a malfunction prior to the emergency relief valves opening to the flare. This control valve is instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. When this valve opens up to the flare, Sunoco will make a determination using material balances and engineering judgment to determine if the 500 lbs of SO2 standard was exceeded. In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree

Unit 231 Blowdown and Pumpout Systems

Refer to the spread sheet for the line by line analysis. For the Unit 231 Blowdown and Pumpout Systems portion of the 1231/1232 Plant Flare system, there are 14 connections. Of the 14 connections, all are either car-sealed closed or have been taken out-of-service and blinded/capped.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 3-13 are car-sealed closed. Item #'s 1, 2, and 14 have been taken out-of-service and capped/blinded.

Unit 331 ISOM Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 331 ISOM Flare Header portion of the 1231/1232 Plant Flare system, there are 99 connections. Of the 99 connections, 65 are either car-sealed closed or have been taken out-of-service and blinded/capped, 18 are pressure relief valves, 8 are valves associated with analyzer vents and sampling stations, 4 are valves associated with compressor vents/reliefs, 3 are seal pots and 1 is a valve associated with the hydrogen sweep of the flare header.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 6, 9, 13, 14, 16, 17, 19, 22, 24, 26, 28, 37-43, 45, 47, 49-65, 67-76, 79, 80, 83-87, 91 and 95 are car-sealed closed. Item #'s 7, 10, 21, 31, 89, 90, 92, 97 and 98 have been taken out-of-service and capped/blinded.

- Item #'s 5, 8, 11, 15, 18, 23, 25, 27, 32, 33, 44, 46, 48, 77, 78, 88, 93 and 96 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 2, 29, 30, 35, 36, 66, 94 and 99 are valves associated with analyzer vents or sampling stations in which all samples collected (included) were 0 ppm H2S.

- Item #'s 3, 4, 12, and 20 are valves associated with compressor vents and reliefs in which all samples collected (included) were 0 ppm H2S.

- Item # 34, 81 and 82 are seal pots.

- Item # 1 is a valve associated with the hydrogen sweep of the flare header in which all samples collected (included) were 0 ppm H2S.

Unit 431 Flare Header

Refer to the spread sheet for the line by line analysis. For the Unit 431 Flare Header portion of the 1231/1232 Plant Flare system, there are 24 connections. Of the 24 connections, 22 are either car-sealed closed or have been taken out-of-service and blinded/capped and the remaining two are valves associated with sampling stations.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 6-13, 15, 16, 18 and 19 are car-sealed closed. Item #'s 1-5, and 20-24 have been taken out-of-service and capped/blinded.

- Item #'s 14 and 17 are valves associated with sampling stations in which all samples collected (included) were 1 ppm H2S or less.

#3 Boiler House Blowdown Flare Header

Refer to the spread sheet for the line by line analysis. For the #3 Boiler House Blowdown Flare Header portion of the 1231/1232 Plant Flare system, there are 5 connections. Of the 5 connections, 4 are either car-sealed closed or have been taken out-of-service and blinded/capped, and the remaining item is a fuel gas connection.

The item numbers below can be used to locate the item on the spread sheet.

- Item # 2 is car-sealed closed. Item #'s 3-5 have been taken out-of-service and capped/blinded.

- Item 1 is a fuel gas connection with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method. .

Section 4. - Supporting test results using H_2S monitoring

All connections, segregated within the 28 spreadsheets, are further identified below regarding one-time sampling and an indication if further sampling or other evaluative measures are proposed as part of this plan. Regarding one-time sampling, the arithmetic mean of the 7 or 14 samples collected are reported. Where connections are exempt from any future sampling activities, Sunoco has offered a specific explanation. These connections "exempt" from future sampling are summarized, by group, below:

- Car-sealed closed connections. These connections will be inspected monthly to verify that the valves have not been opened and that the seals are still in tact. Valves that are found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car-seals broken to support maintenance activities will not be reported. Those car-seals will be replaced when the maintenance activity is completed.
- Pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).
- Out-of-service lines that are capped/plugged or were removed.
- Seal pots. These are safety systems with instrumentation that sense barrier fluid pressure. They are designed for no flow and are treated like relief valves.
- Exempt streams (e.g. steam and liquid connections, etc.)
- Connections in which one time sampling resulted in an average of less than 20 ppm H2S. As you will note, almost all of the connections in this category averaged less than 5 ppm H2S. Sunoco believes that all samples collected were representative of typical refinery operations. It should be mentioned that in all but a few isolated cases, sampling was performed to obtain an average H2S level in accordance with Appendix H. There were a few instances (each described below) where engineering knowledge of the process was used to determine the H2S level of the gaseous stream.

Connections meeting one of the above criteria will not be further addressed relative to any future sampling activities as a result of this monitoring plan. Those connections not exempt, as described above, are further identified in one of two Tables in Section 6/7. Table I lists pressure control valves that do not meet one of the above exemptions. Table II lists all other components that do not meet one of the above exemptions and are not pressure control valves.

Fluidized Catalytic Cracking Unit (1232) Steamdown Header to the Flare

No supporting test results are required for the Fluidized Catalytic Cracking Unit Steamdown Header connections as there are no streams that will use the one time sampling provisions under Appendix H. All but 2 connections from this area of the 1232 unit are car-sealed closed. Accordingly, no further sampling activities are proposed for these connections.

The remaining two connections (#'s 1 and 107 on the attached spreadsheet) originate from a refinery fuel gas mix drum that has an AMS certified CEMS that monitors H2S. These connections are further addressed in Table II of Section 6/7 as Item #'s 1 and 2.

Fluidized Catalytic Cracking Unit (1232) "Cat" Recovery Side Flare Header

Supporting test results are included for the following:

- E-304 Bottoms BB Analyzer Vent (average of 14 samples was 2.9 ppm H2S);
- Deethanizer Bottoms PP Analyzer Vent (average of 14 samples was < 1 ppm H2S);
- F-210 Caustic Accumulator Drum Vent (average of 14 samples was < 1 ppm H2S);
- 12AT667 Absorber Off-gas Analyzer Vent (average of 14 samples was < 1 ppm H2S);
- T-9 Bottoms BB Analyzer Vent (average of 14 samples was 83.15 ppm H2S); and
- F-208 Refrigeration Propane Receiver Vent (all 7 samples were 0 ppm H2S).
- F-210 Caustic Accumulator Drum Vent (average of 14 samples was < 1 ppm H2S).

Six of the above seven sampling events indicated not only less than 20 ppm H2S, but none exceeded 3 ppm H2S. Accordingly, no further sampling activities are proposed for these connections. The one connection with a sampling average greater than 20 ppm (T-9 bottoms – # 49 on the attached spreadsheet) is identified in Table II of Section 6/7 as Item # 3. There are also two other connections (#'s 46 and 47 on the attached spreadsheet) in which the H2S streams exceed 162 ppm. These connections are identified in Table II of Section 6/7 as Item #'s 4 and 5. However, the contribution of SO2 from these sources are minimal and the total SO2 emissions estimated from purging each sample point to the flare are well under the 100 lbs/day allowed under Appendix H of the Consent Decree.

There are two pressure control valves (#'s 1 and 58 on the attached spreadsheet) that contain streams greater than 162 ppm H2S. These valves are described in Section 3 and identified in Table I of Section 6/7 as Item #'s 1 and 2.

All other connections to the FCCU "Cat" Side Recovery portion of this unit are either car-sealed closed, pressure relief valves, taken OOS and capped/blinded, seal pots, or an exempt (steam) valve.

Fluidized Catalytic Cracking Unit (1232) CO Boiler Flare Header

No supporting test results are required for the FCCU CO Boiler Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. One connection is car-sealed closed and one connection is a pressure relief valve. The other 5 connections are latch valves, which are a type of pressure control valve that may relieve to the flare in the event of a malfunction. All 5 latch valves are included in Table 1 of Section 6/7 as Item #'s 3 through 7.

Fluidized Catalytic Cracking Unit (1232) T-9 Area / E-209 Flare Header

Supporting test results are included for the C-235A/C Condensers and F-214 Debutanizer Drum Vent in which an average of 14 samples revealed 0.25 ppm H2S. Both of the above two sampling events indicated not only less than 20 ppm H2S, but did not exceed 1 ppm H2S. Accordingly, no further sampling activities are proposed for these connections.

All other connections from this area of the 1232 unit are either car-sealed closed or are pressure relief valves.

Fluidized Catalytic Cracking Unit (1232) Deethanizer Flare Header

Supporting test results are included for the following:

- V-2 Feed Surge Drum Vent (all 7 samples were 0 ppm H2S); and
- V-3 Deethanizer Reflux Drum Vent (all 14 samples were 0 ppm H2S).

Both of the above two sampling events indicated not only less than 20 ppm H2S, but none were detected at any level. Accordingly, no further sampling activities are proposed for these connections.

All other connections to the FCCU Deethanizer Flare Header portion of this unit are either car-sealed closed, are pressure relief valves or are seal pots.

Unit 8733 Flare Header

No supporting test results are required for the Unit 8733 Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the unit are either car-sealed closed or taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

The one connection (#1 on the attached spreadsheet) is a pressure control valve associated with a sour gas stream that only opens in the event of a malfunction. This valve is included in Table I of Section 6/7 as Item # 8.

Unit 531 V-10001 Mix Drum Flare Header

No supporting test results are required for the Unit 531 V-10001 Mix Drum Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. All but 1 of these connections are either car-sealed closed, been taken OOS and blinded/capped, or are pressure relief valves. Accordingly, no further sampling activities are proposed for these connections.

The one connection (#10 on the attached spreadsheet) is a fuel gas connection that originates from a common mix drum with an Air Management Services certified CEM that monitors H2S. This connection is listed in Table II of Section 6/7 as Item #6.

Unit 531 V-10001 Mix Drum Blow-down

No supporting test results are required for the Unit 531 V-10001 Mix Drum Blow-down connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the 531 unit are either car-sealed closed or are exempt (liquid stream). Accordingly, no further sampling activities are proposed for these connections.

Unit 531 Flare Header to the 1232 Flare Continuous / Intermittent Relief Systems

No supporting test results are required for the Unit 531 Flare Header as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the 531 unit are either car-sealed closed, are pressure relief valves or are exempt (steam valve). Accordingly, no further sampling activities are proposed for these connections.

Unit 531 Sweet Gas PV-795 Control Valve

Supporting test results are included for the 531 Sweet Gas PC-795 Control Valve which averaged 15.1 ppm H2S over 14 samples and is subject to the <20 ppm H2S exemption. This control valve is intermittently activated (estimated 100 times per year) and is fully instrumented via the refinery data collection system. There is no further sampling activities proposed for this connection.

Unit 1732 Steamdown Flare Header to UV-698

No supporting test results are required for the Unit 1732 Steamdown Flare Header to UV-698 connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from this area of the 1732 Unit are either car-sealed closed, have been taken OOS and blinded/capped, or are exempt (liquid stream). One valve (#35 on the attached spreadsheet), associated with the UV-16 Solvent Regenerator vent, was not sampled. Based upon engineering knowledge, the gaseous stream through this connection would contain negligible (<5 ppm) of H2S. Accordingly, no further sampling activities are proposed for these connections.

Unit 1732 UV-8 Flare Header to UV-1010

Supporting test results are included for the following:

- 1732 Lean Solvent Dopak Sample (average of 7 samples was 1.1 ppm H2S);
- "A" Tower Benzene Bottoms Dopak Sample (average of 7 samples was < 1 ppm H2S);
- "B" Tower Benzene Bottoms Dopak Sample (average of 7 samples was < 1 ppm H2S);
- "A" Tower Benzene Product Dopak Sample (average of 7 samples was < 1 ppm);
- "B" Tower Benzene Product Dopak Sample (average of 6 samples was < 1 ppm H2S);
- 1732 Extractor Recycle Dopak Sample (average of 7 samples was 1.1 ppm H2S);
- P-40 Aromatics Pump Nitrogen Control/Pressure Sweep (all samples were 0 ppm H2S);
- UV-3 (Stripper Receiver), UV-4 (Extract Overhead) and UV-5 (water Receiver) (all samples were 0 ppm H2S); and
- UV-8 Knockout Drum (all samples were 0 ppm H2S).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 5 ppm. In addition, all other connections to the 1732 UV-8 Flare Header to UV-1010 are either car-sealed closed, are pressure relief valves, or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

Unit 1732/1733 Miscellaneous Connections to UV-698

No supporting test results are required for the Unit 1732/1733 Miscellaneous Connections to UV-698 as there are no streams that will use the one time sampling provisions under Appendix H. The connections from these miscellaneous areas of 1732/1733 are either car-sealed closed or are exempt (liquid stream). Accordingly, no further sampling activities are proposed for these connections.

Unit 1733 CU-V18 Flare Header to UV-1010

Supporting test results are included for the following:

- 1733 Depropanizer Overhead Dopak Sample (all 7 samples were 0 ppm H2S)
- CU-V18 Knockout Drum (all 14 samples were 0 ppm H2S);
- Deethanizer Dopak Sample Station (all 14 samples were 0 ppm H2S);
- Arsine Dopak Sample Vent (all 14 samples were 0 ppm H2S);
- Nitrogen Removal Skid Dopak Sample Vent (all 14 samples were 0 ppm H2S);
- Deethanizer Vent Gas Dopak Sample Station (all 14 samples were 0 ppm H2S);
- Benzene Feed Dopak Sample Station (average of 14 samples was 0.37 ppm H2S);
- V-23 Reactor Inlet Dopak Sample (average of 7 samples was 0.44 ppm H2S); and
- DIPB Reflux Dopak Sample (average of 7 samples was 0.62).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 1 ppm. In addition, all but three connections to the 1732 CU-V18 Flare Header to UV-1010 are either car-sealed closed, are pressure relief valves, have been taken OOS and capped/blinded or is a seal pot. Accordingly, no further sampling activities are proposed for these connections.

The remaining 3 connections are all pressure control valves (#'s 36, 85 and 86 on the attached spreadsheet) which continuously vent to the flare. Based upon engineering knowledge, the vented gaseous material would not contain H2S. Accordingly, all three connections meet the <20 ppm H2S exemption and no further sampling activities are proposed.

Unit 1733 Steamdown Flare Header to UV-698

Supporting test results are included for the following:

- CU-514 Degassing Drum (all 14 samples were 0 ppm H2S); and
- CU-V312 Cumene Column "C" Vent (all 14 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 1 ppm. In addition, all other connections to the 1733 Steamdown Flare Header to UV-698 are either car-sealed closed or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

Unit 1733 Seal Pot Vents

Supporting test results are included for the following:

- DIPB Bottoms Dopak Sample (average of 7 samples was 4.59 ppm H2S);
- Cumene Bottoms Dopak Sample (average of 7 samples was 0.52 ppm H2S); and
- DIPB Recycle Dopak Sample (average of 6 samples was 0.41 ppm H2S).

All of the sampling performed on this part of the unit indicated not only less than 20 ppm H2S, but all values fell below 5 ppm. In addition, all other connections to the 1733 Seal Pot Vents part of the unit are seal pots. Accordingly, no further sampling activities are proposed for these connections.

Unit 1733 PP Bullets Flare Header

Supporting test results are included for the Truck Unloading Station Vent in which an average of 14 samples revealed < 1 ppm H2S. All other connections to the Unit 1733 PP Bullets Flare Header portion of this unit are either car-sealed closed or are pressure relief valves. Accordingly, no further sampling activities are proposed for these connections

Unit 1733 CU-V8 Flare Header

Supporting test results are included for the HV-008 Pressure Control Valve for the CU-V8 Depropanizer Overhead receiver, in which all 7 samples were 0 ppm H2S. Accordingly, as this connection meets the <20 ppm H2S exemption, no further sampling activities are proposed. There are no other connections associated with this spreadsheet.

Unit 1332 Blowdown Header to UV-1010

No supporting test results are required for the Unit 1332 Blowdown Header to UV-1010 connections as there are no streams that will use the one time sampling provisions under Appendix H. All but one of the connections from this area of the 1332 unit are either car-sealed closed, have been taken OOS and are either blinded / capped, or are pressure relief valves. Accordingly, no further sampling activities are proposed for these connections

There is one connection (# 62 on the attached spreadsheet) that is a fuel gas connection with an AMS certified CEMS that monitors H2S. This connection is listed in Table II of Section 6/7 as Item # 7.

Unit 1332 Flare Header HP-27-G

All but 10 of the connections from this area of the 1332 unit are either car-sealed closed, have been taken OOS and blinded/capped, are pressure relief valves, contain exempt streams or are seal pots. There are also 12 connections for this area, as described in Section 3, that are associated with no/negligible H2S levels. In some cases engineering judgment was used and previously collected samples were used for others. Accordingly, regarding all of the above connections, no further sampling activities are proposed.

The 10 other connections include two (#'s 52 and 53 on the attached spreadsheet) that are fuel gas connections with an AMS certified CEM that monitors H2S. These connections

are listed in Table II of Section 6/7 as Item #'s 8 and 9. The remaining 8 connections (#'s 15-22 on the attached spreadsheet) are associated with unit compressor vent valves (38C-703). The stream through all 8 connections would typically exceed 162 ppm H2S only in the event of a seal leak. These 8 connections are listed in Table II of Section 6/7 as Item #'s 10-17 and a description of their specific monitoring plan is detailed in the following paragraph.

For the eight 38C-703 Compressor seal vent connections, which are all crank or packing vents under a nitrogen purge on the flare header side of the packing. During normal operation, tight seals prevent process gas leaks through these connections to the 1231/1232 flare system. Engineering calculations revealed that the contribution of SO2 from these sources at the common, downstream sampling point during normal operation is minimal. However, in order to model worst case conditions, Sunoco assumed a total packing failure of the connection with the highest H2S concentration at the maximum flow rate. Assuming these worst case conditions, the total contribution of SO2 would never exceed 20.26 lbs/day. Accordingly, these connections were placed onto the *de minimus* source list (spreadsheet of all sources attached) and the total of all *de minimus* sources is well below the 100 lbs/day allowed under Appendix H of the Consent Decree.

Unit 1332 Steamdown Header to UV-698

All but 2 of the connections from this area of the 1332 unit are either car-sealed closed, have been taken OOS and blinded/capped, or are associated with lines that are no longer connected. There is also 1 connection (# 28 on the attached spreadsheet) that is a specific gravity analyzer. Using engineering judgment, H2S levels associated with this stream would not exceed 2 ppm.

The other connection (# 8 on the attached spreadsheet) is associated with the V-601 depropanizer overhead sampling station. According to engineering judgment, typical stream concentrations would not exceed 2 ppm. Accordingly, regarding all of the above connections, no further sampling activities are proposed.

Unit 433 North Butane Field Flare Header

Supporting test results are included for the following:

- 1069 Sphere at the 433 North Butane Tank Field (average of 7 samples was 4.0 ppm H2S)
- 1067 Sphere at the 433 North Butane Tank Field (average of 7 samples was 8.57 ppm H2S);
- 1068 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S);
- 1066 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S);
- 1065 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S); and
- 1064 Sphere at the 433 North Butane Tank Field (all 7 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. In addition, all but one connection to the 433 North Butane Field Flare Header are either car-sealed closed, have been taken OOS and capped/blinded, are pressure relief valves, or are seal pots. Accordingly, no further sampling activities are proposed for these connections

The one connection (# 40 on the attached spreadsheet) is a pressure control valve associated with the V-53 Fresh Additive Drum and, based upon engineering judgment, would not contain any H2S in the stream. Accordingly, no further sampling activities are proposed for this connection.

Unit 137 Flare Header

No supporting test results are required for the Unit 137 Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. Other than one connection, all other connections from this unit are either car-sealed closed, taken OOS and capped/blinded, are pressure relief valves, is a seal pot, or is associated with an exempt stream (steam). Accordingly, no further sampling activities are proposed for these connections

The one connection (# 22 on the attached spreadsheet) is a pressure control valve that is associated with a sour gas stream. This valve would only open in the event of a unit malfunction and is included in Table I of Section 6/7 as Item #9.

Unit 231 Flare Header

Supporting test results are included for the following:

- F-501 Fuel Gas Knockout Drum (average of 14 samples was 8.79 ppm H2S); and
- J-102 Compressor Oil Trap Sweep (all 14 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. Other than one connection, all other connections to the Unit 231 Flare Header portion of this unit are either car-sealed closed, have been taken OOS and capped/blinded, are pressure relief valves, or is associated with an exempt source (steam). Accordingly, no further sampling activities are proposed for these connections

The one other connection (#8 on the attached spreadsheet) is a pressure control valve with an estimated concentration of 20-100 ppm H2S in the stream. This valve would only open in the event of a unit malfunction and is included in Table I of Section 6/7 as Item #10.

Unit 231 Blowdown and Pumpout Systems

No supporting test results are required for the Unit 231 Blowdown and Pumpout Systems connections as there are no streams that will use the one time sampling provisions under Appendix H. The connections from these miscellaneous areas of Unit 231 are either car-sealed closed or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

Unit 331 ISOM Flare Header

Supporting test results are included for the following:

- ISOM V-12 Knockout Drum (all 14 samples were 0 ppm H2S);
- Stabilizer Bottoms Dopak Sample (all 7 samples were 0 ppm H2S); and
- C-4 Drier Effluent Dopak Sample (all 14 samples were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. All other connections to the Unit 331 ISOM Flare Header are either car-sealed closed, have been taken OOS and capped/blinded, are pressure relief valves or are seal pots. Accordingly, no further sampling activities are proposed for these connections.

Unit 431 Flare Header

Supporting test results are included for the following:

- DIB Bottoms Dopak Sample (all 14 samples were 0 ppm H2S); and
- Mixed Butane Feed Dopak Sample (all 14 samples, except one which was 1 ppm, were 0 ppm H2S).

All of the sampling performed on this part of the unit were less than 20 ppm H2S. All other connections to the Unit 431 Flare Header portion of this unit are either car-sealed closed or have been taken OOS and capped/blinded. Accordingly, no further sampling activities are proposed for these connections.

#3 Boiler House Blowdown Flare header

No supporting test results are required for the #3 Boiler House Blowdown Flare Header connections as there are no streams that will use the one time sampling provisions under Appendix H. Other than one connection, all other connections from this area are either car-sealed closed or have been taken OOS and blinded / capped. Accordingly, no further sampling activities are proposed for these connections.

The one other connection (#1 on the attached spreadsheet) is a fuel gas connection with an AMS certified CEM that monitors H2S. This connection is included in Table II of Section 6/7 as Item # 18.

Section 5. - A description of how the sampling is representative of normal operation

One time sampling was performed, per Appendix H, for 89 connections. Each of these sampling events has been previously described in Sections 3 and 4. A grouped summary for all 89 connections follow:

- 38 analyzer vent and sample station connection sampling was conducted in which all values fell below 20 ppm H2S. Further, all of these connections were < 5 ppm H2S.
- 26 valves associated with miscellaneous process equipment and vent sampling was conducted in which all values fell below 20 ppm H2S. Further, all of these connections were < 5 ppm H2S.
- 16 valves/bypass sampling was performed on the butane sphere system in which all samples were less than 20 ppm H2S. In all but one case, all values were 0 ppm H2S.
- 5 pressure control valves were sampled which either continuously or intermittently open, in which all samples were less than 20 ppm H2S.
- 2 analyzer vents were sampled in which the H2S concentrations were greater than 20 ppm. In one of those vents, the H2S value fell within the 20-100 ppm range. For the other vent, the H2S value was greater than 162 ppm.
- 1 fuel gas knockout drum vent was sampled in which the average of those samples were 9 ppm H2S.
- 1 sample was collected covering eight 38C-703 Compressor seal vent connections.

Prior to any and all of the above sampling efforts, an analysis of unit operational conditions was assessed to determine if the sample to be collected would be representative of normal operation. In all cases, it was determined that all samples collected were representative of normal operation.

Section 6 and 7 - Identification of a representative process parameter to be monitored as an indicator of stream sulfur and A suggested parameter limit for each gas stream and a review schedule

In summary, a total of 930 connections were evaluated which are contained within 28 segregated spreadsheets. Of the 930 components there are 902, as grouped below, in which no further sampling activities are proposed.

- 455 connections were determined to be car-sealed closed. Car-sealed valves will not be operated during normal operating conditions, and will only be opened under special circumstances such as maintenance activities during a shutdown. These car-sealed valves will be monitored monthly to verify that the valves have not been opened and that the seals are still in tact. Valves that are found to have broken seals will be reported in our semiannual flare report

required by the Consent Decree. Valves that have car seals broken to support maintenance activities (such as preparing an exchanger for maintenance) will not be reported in the semiannual report. Those car seals will be replaced when the maintenance activity is completed. Accordingly, there are no further sampling activities proposed for these 455 connections.

- 156 connections were determined to be out-of-service and capped/blinded or were discovered to be not connected during field investigatory activities. Accordingly, there is no further sampling activities proposed for these 156 connections.
- 122 connections were identified as pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1). There is no further sampling activities proposed for these connections.
- 57 connections were seal pots which are safety systems with instruments that sense barrier fluid pressure. These vents are designed for no flow and are treated like relief valves. Accordingly, no further sampling activities are proposed for these connections.
- 12 connections were associated with exempt streams (e.g. steam, nitrogen, liquids, etc.) and no further sampling activities are proposed for these connections. .
- 100 connections were connections (valves, vents, etc.) associated with H2S streams less than 20 ppm. In most cases, sample results were less than 5 ppm H2S. In a few isolated instances, as described in Section 4, engineering judgment was used to determine H2S levels.

That leaves 28 components that warrant further discussion and/or evaluation. Included below are two tables in which each of these 28 components are individually listed. Table I includes the pressure control valves and Table II lists all other components.

Table I – Pressure Control Valve Monitoring Plan

Item #	Spreadsheet Name	ID#	Equip # / Location	Routing Method	Freq	H2S Conc	Monitoring Parameter
1	FCCU Cat Recovery	1	F-103 PCV	Control Valve	Malf only	> 162	Note #1
2	FCCU Cat Recovery	58	E-201 PV-201B	Control Valve	Malf only	> 162	Note #1
3	FCCU CO Boiler	3	HV-347 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
4	FCCU CO Boiler	4	HV-350 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
5	FCCU CO Boiler	5	HV-362 Latch Valve	Control Valve	Malf only	> 162	Note #1

6	FCCU CO Boiler	6	HV-374 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
7	FCCU CO Boiler	7	HV-377 Latch Valve	Control Valve	Malf only	20 - 100	Note #1
8	8733 Flare Header	1	D-201B PV-200B	Control Valve	Malf only	> 162	Note # 1
9	Unit 137 Flare	22	25D-12 PRC580	Control Valve	Malf only	> 162	Note #1
10	Unit 231 Flare header	8	F-401 HVC-533B	Control Valve	Malf only	20 - 100	Note #1

Table 1 Notes:

Note #1 – These are PCV's that only relieve to the flare in the event of a malfunction and are basically used in the same fashion as emergency relief valves. These PCV's are fully instrumented and the refinery data collection system will flag when a malfunction causes these valves to open to the flare. If this occurs, Sunoco will make a determination using material balances and engineering knowledge to determine whether a hydrocarbon flaring incident has occurred within the meaning of the Consent Decree (i.e. 500 lbs or more SO2 in a 24-hour period). In the event that standard is exceeded, all required reports will be submitted, and the event will be treated as a hydrocarbon flaring incident that requires a root cause analysis under the Consent Decree.

Table II – Other Connection Monitoring Plan

Item #	Spreadsheet Name	ID#	Equip # / Location	Routing Method	Freq	H2S Conc	Monitoring Parameter	Monitoring Limit
1	FCCU Steamdown	1	V-10001 HVC-761	Control Valve	Intermittent	< 20	Note #1	162 ppm
2	FCCU Steamdown	107	749 FG KO Drum Vent	Manual Valve	Intermittent	< 20	Note #1	162 ppm
3	FCCU Cat Recovery	49	T-9 Bottoms Analyzer Vent	-	Continuous	20 - 100	< 100 lbs SO2/ Day calculation	Not Applicable
4	FCCU Cat Recovery	46	E-201 Analyzer Vent	-	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
5	FCCU Cat Recovery	47	E-204 Analyzer Vent	-	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
6	Unit 531 V-10001 Mix Drum	10	V-10001 PV-796	Control Valve	Intermittent	< 20	Note #1	162 ppm
7	Unit 1332 Blowdown Header	62	V-606 Manual Valve	Manual Valve	Intermittent	< 20	Note #1	162 ppm
8	Unit 1332 at HP-27-G	52	H-2 AE-001	Manual Valve	Continuous	20 - 100	Note #1	162 ppm
9	Unit 1332 at HP	53	H-2 AE-002	Manual Valve	Continuous	20 - 100	Note #1	162 ppm

10	Unit 1332 at HP	15	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
11	Unit 1332 at HP	16	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
12	Unit 1332 at HP	17	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
13	Unit 1332 at HP	18	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
14	Unit 1332 at HP	19	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
15	Unit 1332 at HP	20	38C-703 Crank Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
16	Unit 1332 at HP	21	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
17	Unit 1332 at HP	22	38C-703 Packing Vent	Manual Valve	Continuous	> 162	< 100 lbs SO2/ Day calculation	Not Applicable
18	#3 Boiler House	2	LCV-1001	Control Valve	Intermittent	< 20	Note #1	162 ppm

Table II Notes:

Note #1 - These are fuel gas connections with an Air Management Services CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method. No further sampling actions are warranted.

Sunoco will implement a specific procedure written to ensure that Sunoco will adhere to all of the provisions contained within this monitoring plan. The procedure addresses the specific process from the discovery of a potential regulatory condition (i.e. car seal valve broken and valve discovered open, PCV opened, etc.) to what internal actions must occur, to ultimate reporting (if necessary).

Summary of Alternative Monitoring Protocol/Plan (AMP)
Sunoco Philadelphia Refinery (Girard Point) 433 Unit Plant Flare

Submittal Date: July 5, 2010
Due Date: December 31, 2010
Plan Implementation Date: December 31, 2010

Summary

Under a global settlement document entered by Sunoco in USA v. Sunoco, Inc., Civil Action No. 05-02266 (W.D. Pa) (the "Consent Decree"), the 433 Unit Plant Flare in Philadelphia must be compliant with NSPS Subparts A and J by December 31, 2010. This Document is the Alternative Monitoring Protocol (AMP) submittal required as an option under Appendix H of that Settlement. This document demonstrates the method that Sunoco will use to continuously demonstrate compliance of the 433 Unit Plant Flare with the requirements of 40 C.F.R. Part 60, Subparts A and J.

This document identifies all continuous and intermittent streams into the flare system, and for each continuous and intermittent stream, provides the following:

1) A description of the stream and piping diagram
2) A statement confirming no crossover or sour gas entry points
3) An explanation of conditions that ensure low emission rates
4) Supporting test results using H2S monitoring
5) A description of how the sampling is representative of normal operation
6) Identification of a representative process parameter to be monitored as an indicator of stream sulfur
7) A suggested parameter limit for each gas stream and a review schedule

Note: Attached to this summary are detailed line by line spread sheets that contain each individual flare connection with identifying information. The P & I D drawings, that locate these connections, are referenced on the spread sheets. These drawings are currently being updated and will be maintained by Sunoco. Due to the sheer volume of information required to support this AMP, this summary sheet's purpose is to provide an overview of the AMP and the methodology that Sunoco used in its creation. The 433 Unit Plant Flare system may undergo minor, insignificant changes during the life of this AMP. These changes will not significantly alter the Alternate Monitoring Protocol. Examples of these changes are: the addition of a new sample point that vents to the flare, the addition of a new relief valve, and/or the addition of a new seal pot. If any changes to the flare trigger additional requirements (such as NSPS Subpart Ja), then those requirements will be incorporated into the AMP as appropriate. If additional monitoring requirements are triggered due to flare modification, Sunoco will comply with those monitoring requirements as appropriate (which may include submission of a revised AMP approval request in accordance with NSPS requirements). Sunoco's Management-Of-Change system will capture any such changes as they occur and the AMP will be updated on an annual basis, if necessary.

A Brief description of the 433 Unit Plant Flare System

The 433 Unit Plant Flare system services the Hydrofluoric Acid Alkylation Unit (Girard Point "Alky" Unit, also called 433 Unit). The flare is steam assisted and is 250 feet above grade with a 36" diameter flare header. The flare headers maintain pressure with refinery fuel gas. The flare is monitored via a TV camera with monitors located in both the Central Control Room and the 433 Unit blockhouse. The flame is also monitored with an infrared flame monitor that has an output to the refinery PKS data acquisition system.

There are two flare headers servicing the 433 unit, the Acid Flare Header and Non-Acid Flare Header. Discharges to the Acid Flare Header include the Reactor/Settler, Rerun Tower and all associated equipment. These systems discharge to the T-3 Acid Relief Neutralizer (ARN) prior to discharge to the V-23 Flare Knockout Drum. Systems discharging to the Non-Acid Flare Header include the Caustic Treater, Deethanizer, Feed Treater and Isobutane systems and associated equipment. These systems bypass the ARN and are discharged downstream of this neutralizer, which then proceeds to the V-23 Flare Knockout Drum. Accordingly, all discharges to the flare go through Flare Knockout Drum V-23. Liquid from V-23 is pumped to a recovered oil tank.

The 433 Unit Plant Flare system services only the 433 Unit and is isolated from the other flare systems located within the Philadelphia Refinery. There are no interconnections with other refinery process units or processes.

Unit Protected by the 433 Unit Flare

Hydrofluoric Acid Alkylation Unit (433 Unit):

The hydrofluoric acid alkylation process involves a catalytic reaction that combines isobutane with olefins to form alkylate, which is a gasoline boiling range material used as a gasoline blending component. The olefins are propylene, butylene and amylenes (pentenes) with hydrofluoric acid acting as the catalyst. Philadelphia Refinery catalytic cracking units provide most of the feed material (olefins) which is first pretreated to remove impurities. The treated feed is injected into the reactor risers where the feed contacts recirculating HF acid, resulting in an alkylation reaction. Downstream fractionation and product treating refine the reacted products. Acid regeneration is necessary because the process lowers the acid concentration, thereby affecting reaction yields. The circulating HF acid is regenerated in the T-11 rerun column to remove impurities. Fresh acid must be added to the system, as needed, from the acid storage drum (V-19).

1. A description of the stream and piping diagrams (actual flare connections are attached).

Below is a description of the scope in identifying flare connections.

Flare headers were walked down in the field and matched up with the Process and Instrument Diagrams (P& ID). All connections to the flare headers were analyzed and logged into spread sheets for that flare. Connections that were found and deemed unnecessary were either physically divorced from the flare by a blind, or the valve at the flare header was closed and a car seal was placed on that valve. The AMP for the 433 Unit Plant Flare system includes approximately 100 valves with car seals. In general, car-sealed valves will only be opened for special maintenance activities such as a shutdown. These car-sealed valves will be monitored monthly to verify that the valves have not been opened and that the seals are still intact. Valves that are found to have broken seals will be reported in our semiannual flare report required by the Consent Decree. Valves that have car seals broken to support maintenance activities (such as preparing an exchanger for maintenance) will not be reported in the semiannual report. Those car seals will be replaced when the maintenance activity is completed.

The spreadsheets attached have a line by line analysis of the flare connection on the 433 Unit Flare header. There are two separate spreadsheets associated with this monitoring plan which include:

- Non-Acid Flare Header to the 433 Flare Sources; and
- Acid Flare Header to the 433 Flare Sources.

2. **A statement confirming no crossover or sour gas entry points.**

   As noted previously, the 433 Unit Flare is isolated. There are no crossovers or entry points where H2S, other than the fuel gas system, can be introduced into the 433 Unit Plant flare stream.

   There are no sample points where H2S is vented back to the flare as part of the sampling process.

3. **An explanation of conditions that ensure low emission rates. On the attached spreadsheets there are line by line listings of the flare connections. A summary of the connections is below.**

   Overall, the concentration of H2S in any part of this unit is extremely low (< 5 ppm). Unit feedstock consists of butanes/butylenes (BB) from the catalytic cracking units and occasionally propanes/propylenes (PP) from the 1232 catalytic cracking unit. Based upon laboratory samples collected over the past year, BB H2S content from the catalytic cracking units averaged between 0.5 and 2.5 ppm. PP contributes negligible H2S. These feedstocks enter 433 via V-1 surge drum, and are then passed through two caustic treaters to remove any low levels of H2S and mercaptans with a caustic solution. Next, the feed is sent to the Deethanizer which removes any light-ends including ethane, H2S, water, etc. Samples of the deethanized 433 feed over the past year have consistently shown negligible H2S content.

   When the deethanized 433 feed (negligible H2S content) reaches the Acid Reaction section, all remaining sulfur compounds (mostly mercaptans) are reacted to Acid Soluble Oil (ASO). ASO is a non-volatile by-product of alkylation. Beyond the reaction section of the unit, there is no H2S.

   Another notable safeguard which reduces the possibility of sending H2S to the flare, via any portion of the unit downstream of the reaction section, is the T-3 Acid Relief Neutralizer (ARN). The T-3 ARN operates to neutralize any streams that may contain acidic compounds prior to being routed to the 433 flare. The tower circulates potassium hydroxide (KOH) solution in order to accomplish this neutralization. Any low levels of H2S would be neutralized upon contact with the circulating KOH solution.

   The 433 flare is purged with refinery fuel gas supplied from the Girard Point Main Fuel Gas Drum. This source is monitored by an Air Management Services certified CEM. Fuel gas analysis data for the past year averaged 40 ppm H2S.

Non-Acid Flare Header to the 433 Flare Sources

Refer to the Non-Acid Flare Header to the 433 Sources spread sheet for the line by analysis. For the Unit 433 Non-Acid portion of the 433 Unit Plant Flare, there are 103 connections. Of the 103 connections; 45 are car-sealed closed, 39 are pressure relief valves, 8 have been taken out-of-service and/or capped/blinded and 4 are seal pots. Of the remaining 7 connections: 4 are associated with the hydrogen compressor seal / packing gland nitrogen sweep vent; 2 are fuel gas connections; and 1 connection (valve) is associated with the V-907 caustic flash drum vent.

The item numbers below can be used to locate the item on the spread sheet.

- Item #'s 2, 4, 6, 9, 12, 14, 16, 18, 21, 23, 25, 27, 28, 29, 31, 34, 36, 38, 40, 44, 45, 47, 48, 50, 51, 53, 55, 56, 59, 62, 64, 69, 74, 76, 77, 80, 81, 82, 86, 88, 90, 92, 94, 97 and 103 are car-sealed closed. These items are chiefly PSV bypasses.

- Item #'s 1, 3, 5, 8, 10, 11, 13, 15, 17, 19, 20, 22, 24, 26, 30, 33, 35, 37, 39, 43, 49, 57, 58, 60, 61, 63, 65, 66, 67, 68, 70, 73, 79, 85, 89, 93, 96, 98 and 102 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 41, 42, 46, 87, 91 and 95 have been taken out-of-service and/or blinded / capped. Item #'s 71 and 72 were removed.

- Item #'s 52, 54, 100 and 101 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

- Item #'s 75, 78, 83 and 84 are associated with the hydrogen compressor seal / packing gland nitrogen sweep vent. All 14 sample results (attached) showed 0 ppm H2S.

- Item #'s 7 and 32 are fuel gas connections that originate from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

- Item # 99 is associated with the caustic flash drum vent. All 14 sample results (attached) showed 0 ppm H2S.

Acid Flare Header to the 433 Flare Sources

Refer to the Acid Flare Header to the 433 Flare Sources spread sheet for the line by analysis. For the Unit 433 Acid Relief Flare Header portion of the 433 Unit Plant Flare, there are 110 connections. Of the 110 connections; 61 are either car-sealed closed or have been taken out-of-service, 21 are pressure relief valves, and 11 are seal pots. Of the

remaining 17 connections; 8 are pressure control valves, 4 relate to samplers / analyzers, 3 are fuel gas connections; 1 is a manual valve associated with the loading of fresh acid and 1 connection is associated with an exempt stream (nitrogen).

The 433 Acid Relief Neutralizer (ARN) within this section of the unit operates to neutralize acid containing hydrocarbon streams being vented to the flare by countercurrently contacting the stream with a solution of KOH. Prior to being vented to the flare, via the ARN, all of the acid-containing streams have negligible (< 1 ppm) levels of H2S due to the consumption of the sulfur species in the reaction section of the unit. Any trace H2S would be neutralized in the caustic environment of the ARN.

The item numbers below can be used to locate the flare connection and stream information on the spread sheet.

- Item #s 5, 7, 9, 21-27, 32, 34-41, 43, 46-48, 50, 52, 54, 56, 58-62, 68, 70, 76, 78, 79, 80, 83, 85, 86, 88, 89, 92, 93, 94, 97, 99, 100, 101, 103, 104, 106, 107 and 109 are car-sealed closed. These items are chiefly PSV bypasses. Item #'s 33, 44, and 74 have been taken out-of-service and/or blinded / capped. Item #'s 10, 11, and 57 were removed.

- Item #'s 2, 3, 12, 15, 16, 17, 64, 66, 67, 69, 71, 72, 75, 81, 84, 87, 90, 96, 98, 102 and 105 are pressure relief valves. According to paragraph 50.b. of the Consent Decree, the combustion of gases generated as a result of relief valve leakage or other emergency malfunction are exempt from the requirements of 40 CFR 60.104(a)(1).

- Item #'s 6, 8, 31, 42, 45, 49, 51, 53, 55, 77 and 95 are seal pots which are not designed to leak and operate under pressure between the barrier fluids. A failure of the seal pot would be similar to a relief valve failure.

- Item #'s 4, 13, 18, 73, and 108 represent pressure control emergency block valves that would only be used during operational malfunctions / shutdowns or are associated with the fresh acid part of the unit. Operators in the control room would be notified, via alarm, if any of these events occur. All streams associated with these connections are either post-reaction or fresh acid streams which would contain negligible (< 1 ppm) amounts of H2S. Further, each stream would relieve to the ARN, prior to the flare, which would effectively neutralize any *de minimus* levels of H2S in the stream. Item #'s 65, 82 and 91 are pressure control valves each emitting a continuous stream to the flare. In each case, the stream consists of no H2S and is under a nitrogen blanket.

- Item #'s 28, 29, 30, and 63 are samplers / analyzers within the unit. Item #28 pulls a circulating acid sample which would contain 0 ppm H2S. Item #29 samples recycle isobutene and olefin feed. The recycled isobutene is a post-reaction (0 ppm H2S) product and olefin feed samples have consistently shown 0 ppm hydrogen sulfide levels in this stream. Item #63 samples another post-reactant product (isostripper side

draw) which would also contain 0 ppm H2S. Further, all of these sample connections relieve to the ARN prior to discharge to the flare.

- Item #'s 1, 19 and 110. These items are fuel gas connections that originate from a common mix drum with an Air Management Services certified CEM that monitors H2S. Continuous monitoring with this certified CEM will be the compliance monitoring method.

- Item #14 is a manual valve opened only when fresh acid is loaded. As previously mentioned, there is no (0 ppm) H2S in fresh HF acid.

- Item #20 would only involve a nitrogen purge to the flare and accordingly would be exempt from monitoring.

4. Supporting test results using H_2S monitoring

Non-Acid Flare Header to the 433 Flare Sources – Supporting test results are included for the hydrogen compressor seal / packing gland nitrogen sweep vent (all 14 samples were not detected for H2S) and the caustic flash drum vent (all 14 samples were not detected for H2S). All other connections to the Non-Acid portion of this unit are either: car-sealed closed, pressure relief valves, out-of-service / removed, seal pots or are associated with the fuel gas system, which is being monitored by a CEMs certified in accordance with Philadelphia Air Management Services ("AMS") requirements.

Acid Flare Header to the 433 Flare Sources – No sampling was performed for the Acid Flare Header portion of the unit due to, as previously described, no H2S sources or contributions to the flare system. Most connections in this part of the unit are designed to relieve only during operational malfunctions or shutdowns. When inadvertently relieved, as described above, these connections involve the post-reaction side of the process which consumes sulfur in the reactor or involve fresh acid. Further, residual and low levels of H2S would be neutralized by the ARN prior to discharge to the flare. All connections to the Acid portion of this unit are either: car-sealed closed, out-of-service / removed, pressure relief valves, seal pots, exempt (<20 ppm H2S) or are associated with the fuel gas system, which is being monitored by a CEMs that has been certified in accordance with AMS requirements.

5. A description of how the sampling is representative of normal operation

Non-Acid Flare Header to the 433 Flare Sources – Sampling was conducted for both the hydrogen compressor and the caustic flash drum between 6/11/2007 and 6/25/2007. Operational conditions during this period were evaluated and determined to be representative of normal operation.

Acid Flare Header to the 433 Flare Sources – As described in Section 4, sampling was not conducted in this portion of the unit as there is no H2S.

6. Identification of a representative process parameter to be monitored as an indicator of stream sulfur

Other than one-time sampling performed for the two flare header sources, the 433 Unit Flare connections are either:

- Fuel gas connection monitored with an AMS-certified CEM;
- Exempt pressure relief valves;
- Seal pots which operate like relief valves;
- Associated with nitrogen purging (exempt);
- Connections in which the H2S concentration is < 20 ppm (exempt);
- Car-sealed closed (verified on a monthly basis); or
- Connections taken OOS and blinded/capped.

Accordingly, there are no further sampling activities proposed for any of the connections associated with this monitoring plan. Car-seals and seal pots are regularly checked and the fuel gas CEMs will continuously monitor H2S for those associated connections.

Sunoco will implement a specific procedure written to ensure that Sunoco will adhere to all of the provisions contained within this monitoring plan. The procedure addresses the specific process from the discovery of a potential regulatory condition (i.e. car seal valve broken and valve discovered open, etc.), to what internal actions must occur, to ultimate reporting (if necessary).

7. A suggested parameter limit for each gas stream and a review schedule

Other than one-time sampling performed for the two Non-Acid flare header sources, the 433 Unit Flare connections were either:

- Fuel gas connection monitored with an AMS-certified CEM;
- Exempt pressure relief valves;
- Seal pots which operate like relief valves;
- Associated with nitrogen purging (exempt);
- Connections in which the H2S concentration is < 20 ppm (exempt);
- Car-sealed closed (verified on a monthly basis); or
- Connections taken OOS and blinded/capped.

Accordingly, there are no further sampling activities proposed for any of the connections associated with this monitoring plan. Car seals and seal pots are regularly checked and the fuel gas CEMs will continuously monitor H2S for those associated connections.

Sunoco will implement a specific procedure written to ensure that Sunoco will adhere to all of the provisions contained within this monitoring plan. The procedure addresses the specific process from the discovery of a potential regulatory condition (i.e. car seal valve broken and valve discovered open, etc.), to what internal actions must occur, to ultimate reporting (if necessary).

SECTION H. SUNOCO MARCUS HOOK REFINERY

In August 2012, certain air contaminant sources related to petroleum refining and located in Sunoco Inc.'s Marcus Hook refinery which were permitted under Title V operating permit No. 23-00001 (originally issued on November 18, 2008) and the air contaminant sources located in Sunoco's Philadelphia refinery which are permitted under Title V operating Permit No. V95-038 were determined to be a single facility for New Source Review (NSR), Prevention of Significant Deterioration (PSD) and Title V applicability purposes in accordance with a determination that the facilities were one source. As of July 6, 2013, after the change in ownership of both Marcus Hook and Philadelphia refinery air contaminant sources as well as permanent surrender of crude refining capabilities at Marcus Hook, the two facilities are no longer considered a single facility. However, PES continues to include emissions changes to air contaminant sources at the Marcus Hook refinery that occurred prior to July 6, 2013 for NSR, PSD, and Title V applicability purposes.

* This is a State requirement and is not Federally enforceable.
** This is a Local requirement and is not Federally enforceable.

APPENDIX E. LIST OF REPORTS TO BE REMOVED FROM THE TVOP

NorthStar Facility

Request Removal of the Following Reports from the NorthStar TVOP

REPORT or TASK	REGULATORY DRIVER
QQQ sewer area inspections at 869 and 870	NSPS QQQ
Benzene Fenceline Sample Replacement and packaging for shipment to Eurofins Air Toxics laboratory	Refinery MACT 1 (CC)
Fugitive Emissions VOC SOCMI (GP only) (LDAR) [1]	PA 129.71
869 Alky Unit - Subpart QQQ Inspection Summary Report and Certification	NSPS QQQ
Fugitive Emissions NSPS Refinery (Federal) (GP and PB now combined) [1]	40 CFR 61.240
Fugitive Emissions VOC HON (State) LDAR (GP only) 40 CFR 63.182(d)(1) [1]	40 CFR 63.160 Subpart 40 CFR 63.182 (d)(1)
Benzene Fenceline Monitoring Data Report	Refinery MACT 1 (CC)
MACT II Periodic Report Subpart UUU (USEPA)	Refinery MACT 2 (UUU)
HON (SOCMI) Semi-Annual Report GP (AMS) 40 CFR 63.152(c)(2), (d)(1)	63 Subpart F, G 40 CFR 63.152(c) (2)(d)(1)
MACT I Periodic Report - Refinery (USEPA)	63 Subpart CC
DMR 1232-FCCU WGS Semi-Annual (PWD/Baxter Water Treatment Plant)	PWD 1232 Permit
RACT Plan Approval No.12195 Quarterly. Report Due 30 days after Quarter, plus 14 Business Days	[added report 1/24/18]
USEPA CEDRI REPORT (RATA GP 1232)	NEW 2018
868 FCCU Production Emissions Quarterly Report	Permit Compliance
BWON (Benzene Waste NESHAP) Quarterly Report & CertificationGP-PB (2page letter)	40 CFR 61.357(d)(6)
BWON TAB & Deficiencies Report - ANNUAL	40 CFR 61.357(a)(1-4)(d)(8)
Ja FLARE NSPS	NSPS Ja
SO2 REPORT - Refinery	SO2-95-039

1. For fugitive sources, reports will continue to be submitted as required by AMS and PADEP regulations which continue to be applicable.