

1 **RESPONSE TO PUBLIC ADVOCATE’S INTERROGATORIES**
2 **AND REQUESTS FOR PRODUCTION OF DOCUMENTS**

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5 **PA-II-1.** PLEASE UPDATE SCHEDULE BV-ES:WP-1, PAGE 13, TO INCLUDE FY
6 2017 HISTORICAL USAGE PER ACCOUNT.

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9 **RESPONSE:**

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11 Please refer to response attachment PA-II-1.pdf.

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13 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-II-2.** REFERENCE SCHEDULE BV-E4, TABLES M-1 AND M-2. PLEASE IDENTIFY
2 THE NUMBER OF EACH TYPE OF SERVICE PERFORMED IN THE MOST
3 RECENT FY THAT DATA IS AVAILABLE. WATER CHARGE ITEMS, 2A, 2B, 3,
4 7A-D, 7E-G, AND PWD REGULATIONS REFERENCE 6 - 7D MAY BE
5 CONSOLIDATED FOR PURPOSES OF THIS RESPONSE.
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8 **RESPONSE:**

9 Please refer to response attachment PA-II-2.pdf which provides the number of each type of
10 service performed in Fiscal Year 2016, which was the latest data available at the time of the
11 study. Note water charge items 2a, 2b, 3, 7a-d, 7e-g have been consolidated.
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15 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-II-3.** REFERENCE PWD STATEMENT NO. 2, PAGE 36, LINES 1-7 AND PAGE 37,
2 LINES 9-15. PLEASE EXPLAIN WHEN CHARGES WOULD BEGIN TO BE
3 REASSESSED ON THE ACQUIRED PROPERTY.
4

5 **RESPONSE:**

6 Charges will be reassessed when the property is no longer owned by the City, Land Bank,
7 PHDC or the Redevelopment Authority.
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9 **RESPONSE PROVIDED BY:** Melissa LaBuda, Philadelphia Water Department
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PA-II-4. REFERENCE PWD STATEMENT NO. 6, PAGE 8, LINES 5-12. FOR THE MOST RECENT FY DATA THAT IS AVAILABLE, FOR THE 10 SMIP AND GARP PROJECTS COMPLETED DURING THE FY, PLEASE IDENTIFY:

- A. THE TOTAL GRANT AWARDED FOR EACH PROJECT; AND
- B. THE PARTICIPANTS IA AND GA BILLING UNITS BEFORE THE PROJECT WAS INITIATED AND THE BILLING UNITS AFTER PROJECT COMPLETION.

RESPONSE:

Please refer to response attachment PA-II-4.pdf

RESPONSE PROVIDED BY: Erin Williams, Philadelphia Water Department

1 **PA-II-5.** PLEASE EXPLAIN HOW SMIP AND GARP PROJECT GRANTS ARE
2 ALLOCATED TO CUSTOMER CLASS IN PWD'S COST OF SERVICE STUDIES.
3

4 **RESPONSE:**

5 The cost allocation approach for retail service is described in PWD Statement 9A and further
6 discussed in Schedule BV-E5: WP-4.
7

8 SMIP and GARP costs are treated as an O&M expense as part of the net revenue requirements;
9 100% of these costs are assigned to the "Collection" functional cost center and then 100% to
10 the "Capacity" cost component. All O&M costs allocated to the "Capacity" cost component
11 are then further allocated 60% to stormwater and 40% to sanitary based upon an analysis of
12 system-wide ratio of peak wet weather flows to peak dry weather flows.
13

14 Allocation of Sanitary Capacity Costs to Customer Types: For sanitary, a unit cost is calculated
15 for the sanitary "Capacity" cost component, as shown in Table WW-11 (Schedule BV-E1).
16 Then the sanitary Capacity cost is allocated to customer types by applying the unit cost to each
17 customer type's respective Capacity Flow Rate shown in Column 2 of Table WW-8 (Schedule
18 BV-E1).
19

20 Allocation of Stormwater Capacity Costs to Customer Types: For stormwater, the stormwater
21 portion of the Capacity costs are included in the overall net stormwater revenue requirements
22 and allocated 80% to Impervious Area (IA) and 20% to Gross Area (GA). The GA and IA
23 costs are then distributed to customer types by applying the unit cost of GA and IA (Table SW-
24 14) to the billable GA and IA square footage as shown in Table SW-15 (Schedule BV-E3).
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26 Please refer to Schedule BV-E5: WP-4 for additional discussion of cost allocations.
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28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-II-6.** PLEASE EXPLAIN WHY IT WOULD BE UNREASONABLE TO USE AVERAGE
2 ANNUALIZED WINTER-MONTHS WATER SALES FOR WASTEWATER
3 VOLUMES FOR RESIDENTIAL CUSTOMERS.
4

5 **RESPONSE:**

6 As the Water Environment Federation (WEF) Manual of Practice 27 indicates, it is reasonable
7 to estimate contributed residential wastewater volumes either based on winter water usage or
8 by applying a return factor percentage to the total annual water use.
9

10 Consistent with the approach used in the previous cost of service studies and rate proceedings,
11 a 95% return factor is applied to the total annual residential water usage to estimate the annual
12 contributed wastewater volume. Given that the City of Philadelphia has a highly urbanized
13 residential customer base with very limited irrigation, the use of 95% factor is deemed
14 reasonable for estimating the annual contributed wastewater volume.
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16 Based on the monthly residential water sales data provided in the attachment to response to
17 PA-ADV-41, the following table presents a comparison of the Annualized Winter Usage
18 (December to March billed water usage) and Total Annual Water Usage for FY 2014 to FY
19 2016. As presented in the table, the Annualized Winter Usage as a percentage of Total Annual
20 Water Usage for the Water Department's Residential Customers varied from 101.9% to 99.0%
21 and averaged 100.9% during the period FY 2014 to FY 2016. While estimating annual
22 wastewater volume based on annualized winter water usage is an industry recognized
23 approach, based on the Residential Annualized Winter Water Usage Analysis illustrated in the
24 following table, it does not appear to be a reasonable approach to estimate wastewater volumes
25 for residential customers.
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Residential Annualized Winter Water Usage Analysis			
	FY 14	FY 15	FY 16
Annualized Winter Usage (ccf)	33,179,265	32,724,189	31,162,854
Total Annual Water Usage (ccf)	32,648,250	32,106,133	31,468,347
Annualized Winter Usage as a Percentage of Total Annual Water Usage	101.6%	101.9%	99.0%

Please note this topic was also discussed during the prior proceeding in response to PA-EXE-94.

RESPONSE PROVIDED BY: Black & Veatch Management Consulting, LLC

1 **PA-II-7.** FOR EACH HOUR IN THE MONTH DURING THE SUMMER OF 2017 THAT
2 PWD'S PEAK HOUR WATER DEMAND WAS EXPERIENCED, PLEASE
3 PROVIDE THE VOLUME OF WATER DELIVERED INTO EACH OF THE
4 PWD'S WATER TREATMENT PLANTS AND THE OUTPUT FROM EACH
5 PLANT. PLEASE PROVIDE THE REQUESTED INFORMATION IN EXCEL
6 FORMAT.

7
8 **RESPONSE:**

9 The peak hourly rate of water demand experienced by PWD in the summer of 2017 occurred
10 on July 19th, 2017. Provided in attachment PA-II-7, find the hourly volume of water treated by
11 all three PWD Water Treatment Plants for the month of July 2017 and the output from each
12 Plant. These numbers do not represent the demand of the water system as it does not
13 incorporate the addition to or subtraction from storage in the distribution system.

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16 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department
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PA-II-8. REFERENCE PWD STATEMENT NO. 9A, PAGE 59, LINES 15-24, AND PAGE 60, LINES 1-2. PLEASE PROVIDE THE HISTORICAL DEMANDS EXPERIENCED AND RELIED UPON TO DEVELOP THE MAXIMUM DAY AND HOUR PERCENTAGES.

RESPONSE:

The maximum day demands experienced and relied upon for the development of the maximum day extra capacity allocation factors is based on the system maximum day raw water pumping data.

Fiscal Year	Average Day	Maximum Day	Maximum Day to Average Day Ratio
2012	257.9 mgd	362.7 mgd	1.41
2013	259.8 mgd	338.6 mgd	1.30
2014	260.1 mgd	343.5 mgd	1.32
2015	250.9 mgd	305.3 mgd	1.22
2016	243.2 mgd	276.8 mgd	1.14
Peak Flow			1.41
USE			1.40

Note: These flows and supporting analysis are provided in PWD Exhibit 6 Supplemental Financial, Engineering and Other Data Black & Veatch Workpapers WCOS17_19.xls Wpltallo-3 (page 750).

The maximum hour demands experienced and relied upon for the development of the maximum hour extra capacity allocation factors are based on the system maximum hour water production data.

Fiscal Year	Average Day	Maximum Day	Maximum Hour	Maximum Day to Average Day Ratio	Maximum Hour to Average Day Ratio
2012	245.8 mgd	292.0 mgd	370.4 mgd	1.19	1.51
2013	244.5 mgd	286.2 mgd	365.0 mgd	1.17	1.49
2014	250.0 mgd	313.6 mgd	433.8 mgd	1.25	1.74
2015	230.8 mgd	291.8 mgd	365.5 mgd	1.26	1.58
2016	223.8 mgd	258.2 mgd	430.8 mgd	1.15	1.92
Peak Flow				1.26	1.92
USE				1.25	1.90

Note: These flows and supporting analysis are provided in PWD Exhibit 6 Supplemental Financial, Engineering and Other Data Black & Veatch Workpapers WCOS17_19.xls Wpltallo-4 (page 751).

RESPONSE PROVIDED BY: Black & Veatch Management Consulting, LLC

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PA-II-9. PLEASE IDENTIFY THE LENGTH OF TIME IT TYPICALLY TAKES TO TREAT RAW WATER AT PWD’S WATER TREATMENT FACILITIES BEFORE IT IS DISCHARGED INTO THE DISTRIBUTION SYSTEM.

RESPONSE:

The typical time period to treat water at Water Department facilities from river to the first entry point in the distribution system is approximately 36 - 48 hours.

RESPONSE PROVIDED BY: Donna Schwartz, Philadelphia Water Department

1 **PA-II-10.** REFERENCE PWD STATEMENT NO. 9A, PAGE 62, LINES 3-7. PLEASE
2 PROVIDE AN EXPLANATION AND CALCULATION SHOWING HOW THE
3 CAPACITY FACTORS FOR AQUA WERE DEVELOPED.
4

5 **RESPONSE:**

6 As stated in PWD Statement No. 9A, Page 62, Lines 3-7, the plant investment costs are
7 allocated to Aqua Pennsylvania based on their contract capacity. The Drinking Water
8 Agreement between the City of Philadelphia and Aqua Pennsylvania dated June 29, 2000, as
9 amended by the Amendment to the Drinking Water Agreement dated July 1, 2006, establishes
10 the maximum daily demand flow limit of 9.5 million gallons per day (mgd).
11

12 PWD Exhibit 6 Supplemental Financial, Engineering and Other Data Black & Veatch
13 Workpapers WCOS17_19.xls Plant-13 (page 742).
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15 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-II-11.** REFERENCE PWD STATEMENT NO. 9A, PAGE 66, LINES 8-11; PAGES 67,
2 LINES 1-4; AND PAGE 96, LINES 19-25. PLEASE EXPLAIN WHY DIFFERENT
3 BASE/MAXIMUM DAY/MAXIMUM HOUR/CAPACITY PERCENTAGES WERE
4 USED IN THE COST OF SERVICE STUDIES FOR POWER COSTS WHEN THE
5 SAME UTILITY PROVIDES ELECTRIC SERVICE.
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8 **RESPONSE:**

9 Different Base/Maximum Day Extra Capacity/Maximum Hour Extra allocation percentages
10 were used to allocate the power costs associated with the raw water pumping and treatment and
11 pumping functional cost centers as a reflection of the operating characteristics of the facilities
12 associated with each functional cost center. Raw water pumping facilities are designed and
13 operate to meet the maximum day demands and as such do not include an allocation of power
14 costs to the maximum hour extra capacity component.
15

16 Note that the Base/Maximum Day Extra Capacity/Maximum Hour Extra allocation
17 percentages used to allocate the power costs associated with the raw water pumping and
18 treatment and pumping functional cost centers are consistent with prior cost of service studies.
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21 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-II-12.** REFERENCE PWD STATEMENT NO. 9A, PAGE 66, LINES 21-24. PLEASE
2 IDENTIFY THOSE TREATED WATER PUMPING EXPENSES THAT PWD
3 CONSIDERS TO BE MAXIMUM HOUR RELATED.
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6 **RESPONSE:**

7 The operation and maintenance (O&M) expenses associated with treated water pumping
8 facilities that are located (i) at the water treatment plants and (ii) within the distribution system
9 are considered maximum hour related. The O&M expenses include power costs, gas costs, a
10 proportionate share of the Operations Division load control, machine shop and materials
11 management units, and a proportionate share of Water Fund administrative and general costs.
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13 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-II-13.** REFERENCE PWD STATEMENT NO. 9A, PAGE 85, LINES 24-25. PLEASE
2 EXPLAIN HOW THE I/I ALLOWANCE WAS DETERMINED. INCLUDE
3 SUPPORTING CALCULATIONS AND DOCUMENTATION.
4

5 **RESPONSE:**

6 The infiltration/inflow (I/I) allowance for contract customers (Line 14 on Table WH-2 of
7 Schedule BV-E2) is estimated as 1.5% of their contract capacity peak flow limit (Line 10 on
8 Table WH-2 of Schedule BV-E2). The contract customer's metered wastewater flow at the
9 discharge point only includes the contract customer's local collection system I/I. However, I/I
10 also occur downstream from the contract customer's metered discharge point. Hence, the 1.5%
11 of contract capacity is used as an allowance to estimate and allocate a portion of the
12 downstream I/I to each contract customer.
13

14 The basis for this allowance is consistent with past rate proceedings. Black & Veatch is not
15 aware of any additional documentation, as it would not be practical to more precisely isolate
16 and determine the I/I flow attributable to the contract customer's wastewater contribution.
17

18 Note that the I/I allowance is not applicable for DELCORA, as their wastewater is pumped
19 directly to the Southwest WPCP and does not utilize the PWD collection system.
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22 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-II-14.** REFERENCE PWD STATEMENT NO. 9A, PAGE 86, LINES 23 THROUGH PAGE
2 87, LINES 2; PAGE 87, LINES 19-22; AND PAGE 88, LINES 16-19. PLEASE
3 EXPLAIN WHY IT WOULD BE UNREASONABLE TO ALLOCATE A PORTION
4 OF THESE COSTS BASED ON AVERAGE RATES OF FLOW WHEN WATER
5 DISTRIBUTION MAIN ARE ALLOCATED PARTIALLY ON AVERAGE RATES
6 OF FLOW AND ARE DESIGNED BASED ON MAXIMUM FLOWS.

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8 **RESPONSE:**

9 It would be unreasonable to allocate a portion of the retail plant investment associated with
10 Wastewater Collection System – Sewers, Wastewater Collection System – Pumping, and
11 capacity related Wastewater Treatment facilities, based on average rates of flow, for the
12 following reasons:

- 13 ○ The proposed approach is inconsistent with the industry accepted Design-Basis Cost
14 Allocation Methodology. Table 6.4 of the Water Environment Federation (WEF)
15 Wastewater Financing and Charges, Manual of Practice 27 (MoP27) identifies
16 “capacity” as the predominant design criteria cost-causative component for collection
17 sewers, lift and pump stations, grit or screen chamber (pretreatment facilities),
18 disinfection (chlorine contact facilities), and outfall sewer facilities, as these facilities are
19 designed to handle the capacity (peak) volume of flows rather than average volume.
- 20 ○ The proposed approach would not be consistent with cost of service studies from prior
21 rate proceedings.

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23 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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1 **PA-II-15.** REFERENCE PWD STATEMENT NO. 9A, PAGE 87, LINE 8. PLEASE PROVIDE
2 A DETAILED EXPLANATION OF HOW THE 64 PERCENT ALLOCATION WAS
3 DETERMINED. INCLUDE SUPPORTING DOCUMENTATION AND
4 CALCULATIONS.

5
6 **RESPONSE:**

7 To determine the capital cost allocation factor for the conveyance system, a weighted capacity
8 analysis on the wastewater collection system was performed in October of 2011. During the
9 cost of service analysis for the current rate proceeding, Black & Veatch reviewed the October
10 2011 weighted capacity replacement cost analysis with PWD staff and reaffirmed that validity
11 of 64 percent /36 percent allocation factor. This allocation factor reflects the ratio of sanitary
12 sewer replacement cost to that of the storm sewer replacement cost.

13
14 As explained in the 2016 and in the current rate proceeding, during construction of separate
15 sanitary and storm sewers, a single trench is used to place both the sanitary sewer and the
16 stormwater pipes. The sanitary sewer is buried deeper and a storm sewer is placed in the same
17 trench above the sanitary sewer. This approach of utilizing the same trench for both sewers,
18 essentially reduces the overall cost of storm sewer construction. In recognition of this
19 phenomenon, in the weighted capacity replacement cost analysis, the estimate of the storm
20 sewer replacement cost is reduced. Then a ratio of sanitary sewer to storm sewer replacement
21 cost is determined, which results in the 64% storm sewer / 36% allocation factor.

22
23 Supporting calculations and documentation are provided in response attachment PA-II-15.pdf.
24 The attached analysis is based upon an inventory of separate sanitary sewer, combined sewer,
25 and separate storm sewer system categorized by pipe material, pipe sizes and lengths used
26 throughout the system.

27
28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-II-16.** PLEASE IDENTIFY THE METERING FACILITIES IN PLACE THAT MEASURE
2 WASTEWATER AND STORMWATER FLOWS INTO THE PWD'S
3 WASTEWATER TREATMENT FACILITIES (E.G., JUST PRIOR TO ENTERING
4 THE TREATMENT FACILITIES, AND AT UPSTREAM LOCATIONS)
5 (SEPARATELY). ALSO EXPLAIN HOW ACCURATE ANY UPSTREAM
6 METERING WOULD BE IN MEASURING INFLOWS TO PWD'S THREE
7 WASTEWATER TREATMENT FACILITIES.

8
9 **RESPONSE:**

10 The metering facilities in place that measure flows into the PWD's combined wastewater
11 treatment facilities are listed below. These meters are routinely calibrated to meet NPDES
12 permit requirements.

13
14 **SW-WPCP Influent Metering:**

15 DelCora Force Main - Venturi Meter

16 Three triple barrel high level gravity sewers: 3 individual Venturi Meters

17 Low Level - Parshall Flume meter

18
19 **SE-WPCP Influent Metering:**

20 Lower Delaware Low Level Interceptor Sewer - Venturi Meter

21
22 **NE-WPCP Influent Metering:**

23 Frankford and Somerset Low Level – 1 combined Venturi Meter

24 Frankford High Level – Venturi Meter

25 Delaware Low Level – Calculated based on Total Plant flow from Venturi meters and
26 subtracting flows from 1 and 2.

1 The Department meters flow contributions from upstream/outlying municipalities and one meter
2 measuring flows from the Navy Yard. These metering sites are located on the periphery of our
3 system and measure flows many levels of magnitude below those at the treatment plants. Please
4 see attachment PA-II-16 for a listing which includes both a location and meter type. Expectations
5 for meter accuracy within the collection system (not at the plant) are driven by meter type and
6 local hydraulic conditions and can have wide variability. Mag meters (full pipe flow) have a
7 higher level of accuracy and we expect them to provide us with a flow accuracy of $\pm 5\%$. Area
8 velocity meters (open channel flow) are considered less accurate and are generally expected to
9 provide a flow accuracy in the range of $\pm 10\%$ to $\pm 25\%$.

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12 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department
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PA-II-17. REFERENCE PWD STATEMENT NO. 9A, PAGE 96, LINES 7-14. PLEASE
PROVIDE A COMPLETE COPY OF THE REFERENCED ANALYSIS.

RESPONSE:

Refer to response attachment PA-II-17.pdf.

RESPONSE PROVIDED BY: Black & Veatch Management Consulting, LLC

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PA-II-18. REFERENCE PWD STATEMENT NO. 9A, PAGE 99, LINES 18-25. PLEASE EXPLAIN HOW PWD’S METER INVESTMENT AND RELATED O&M EXPENSES ARE ALLOCATED TO WASTEWATER AND STORMWATER SERVICE.

RESPONSE:

Meter investment capital costs and O&M expenses are assigned to the Customer functional cost center and then allocated between water and wastewater systems based upon the number of customer bills. Once allocated to wastewater, these costs are allocated entirely to sanitary sewer. No meter related costs are allocated to stormwater service.

RESPONSE PROVIDED BY: Black & Veatch Management Consulting, LLC

1 **PA-II-19.** REFERENCE PWD STATEMENT NO. 9A, PAGE 103, LINES 3-5:

- 2 A. PLEASE PROVIDE AN EXPLANATION AS TO HOW THE 95
3 PERCENT RETURN FACTOR WAS DETERMINED. PROVIDE
4 SUPPORTING DOCUMENTATION AND CALCULATIONS; AND
5 B. PLEASE IDENTIFY AND PROVIDE COPIES OF ALL
6 ARTICLES/STUDIES REVIEWED BY THE B&V WITNESS THAT
7 EVALUATE RETURN FACTORS BY CUSTOMER TYPE.

8
9 **RESPONSE:**

- 10 A. As described in the response to PA-II-6, the 95 percent return factor is an estimate to
11 reflect the amount of metered water usage which is not discharged into the wastewater
12 collection system. The basis for this estimate is consistent with past rate proceedings.
13 Given that the City of Philadelphia has a highly urbanized residential customer base with
14 very limited irrigation, the use of 95% factor is deemed reasonable for estimating the
15 wastewater volume. Black & Veatch is not aware of any additional documentation, as it
16 would not be practical to provide the metering necessary to isolate and determine the retail
17 customer contributed wastewater volume.
- 18 B. Black & Veatch did not review articles/studies which evaluate return factors as part of the
19 scope of work for the cost of service study for the proposed rates and charges. As noted in
20 the response to PA-II-6, the Annualized Winter Usage as a percentage of Total Annual
21 Water Usage for Residential Customers varied from 101.9% to 99.0% and averaged
22 100.9% during the period FY 2014 to FY 2016. The absence of a significant variation in
23 winter quarter usage reflects the highly urbanized residential customer base with very
24 limited irrigation. As such, it would not be reasonable to introduce return factors by
25 customer class.

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27 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
28

1 **PA-II-20.** REFERENCE PWD STATEMENT NO. 9A, PAGE 103, LINES 1-3:

2 A. PLEASE PROVIDE AN EXPLANATION AS TO HOW THE 1.5
3 AND 2.5 FLOW RATES WERE DETERMINED. INCLUDED
4 SUPPORTING DOCUMENTATION AND CALCULATIONS;
5 AND

6 B. EXPLAIN THE DIFFERENCE BETWEEN THE TERM
7 “WASTEWATER TREATMENT PLANT” AND “WATER
8 POLLUTION CONTRACT PLANT.”

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11 **RESPONSE:**

12 A. The 1.5 and 2.5 peak flow factors for retail wastewater contributions and corresponding I/I
13 allowance, respectively, are based on estimates reflected in prior rate proceedings.

14 B. There is no difference between the terms “Wastewater Treatment Plant” and “**Water**
15 **Pollution Control Plant.**” Both of these terms refer to the wastewater treatment facilities.
16 To Black & Veatch’s knowledge, the Water Department’s rate filing does not use the term
17 “Water Pollution **Contract** Plant.”

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21 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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PA-II-21. REFERENCE PWD STATEMENT NO. 9A, PAGE 72, LINES 19-24. PLEASE EXPLAIN THE BASIS FOR USING TWO SIMULTANEOUS FIRES, ONE USING 10,000 GPM AND THE OTHER USING 5,000 GPM. ARE THE USE OF FIRES OF THIS MAGNITUDE CONSISTENT WITH ISO STANDARDS FOR WATER SYSTEM? PROVIDE SUPPORTING DOCUMENTATION.

RESPONSE:

The fire flow demands are consistent with prior cost of service studies and rate proceedings, which were based on the standards of the Insurance Services Office (ISO) for peak fire flow requirements. These fire flow demands are reasonable relative to the Duration of Required Fire Flow as presented in Table 15.2.6 of the National Fire Protection Association (NFPA) Fire Protection Handbook, 20th Edition.

RESPONSE PROVIDED BY: Black & Veatch Management Consulting, LLC

1 **PA-II-22.** WHAT IS THE POPULATION OF PWD'S WATER SERVICE TERRITORY.

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4 **RESPONSE:**

5 PWD provides drinking water retail service to approximately 1.6 million people within the
6 City limits. PWD also provides drinking water service to one wholesale customer outside of
7 the City limits.

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9 **RESPONSE PROVIDED BY:** Melissa LaBuda, Philadelphia Water Department

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1 **PA-II-23.** REFERENCE BV-E1, TABLE W-10. PLEASE IDENTIFY BY LINE ITEM, THE
 2 COSTS ASSOCIATED WITH WATER QUALITY TESTING REFLECTED IN
 3 TEST YEAR O&M EXPENSE.
 4

5 **RESPONSE:**

6 The estimated FY 2019 costs of the Bureau of Laboratory Services (BLS) are included in the
 7 following line items in Table W-10.
 8

<u>Line</u> <u>No.</u>	<u>Description</u>	<u>FY 2019 Costs</u>
3	Raw Water Pumping – Other	\$ 138,179
7	Purification & Treatment – Power & Pumping – Other	\$ 516,818
11	Purification & Treatment – Other – Other	\$ 2,068,266
15	Mains	\$ 2,320,662
16	Meters	\$ 74,685
17	Fire Hydrants	\$ 132,196
18	Filtered Water Storage	\$ 86,006
19	High Pressure Fire System	\$ 87
21	Customer Accounting & Collection	\$ 542,497
24	Administrative & General	\$ 686,545
	Total	\$ 6,565,941

23
 24 Note: The Allocation of the FY 2019 BLS costs is presented on PWD Exhibit-6: Black &
 25 Veatch Management Consulting, LLC, Calculations Supporting Schedules BV-E1, BV-E2, and
 26 BV-E3, WCOS17_19, Womallo-14, Column 7.
 27

28 There are additional water quality testing costs included in Line 8 (Purification & Treatment –

1 Treatment – Other) of Table W-10 which are associated with the labs located at each of the
2 water treatment plants. The budgeted costs for each water treatment plant include the lab costs
3 at each plant. At this time the costs for these labs are not readily identifiable as there is not a
4 specific cost center or unit within the treatment plant budgets to isolate these lab costs.
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7 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC
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PA-II-24. PLEASE IDENTIFY THE FREQUENCY WITH WHICH PWD PERFORMS EACH WATER QUANTITY TEST AND THE CRITERIA WHICH DETERMINES HOW FREQUENTLY EACH WATER QUALITY TEST SHOULD BE PERFORMED (I.E., DAILY, WEEKLY, PRODUCTION QUANTITY, ETC.).

RESPONSE:

The Department performs quantity and quality tests on many aspects of the water and wastewater treatment processes, which include raw water, water in various stages of treatment, potable water, untreated wastewater, wastewater in various stages of treatment and treated wastewater. The frequencies of tests are determined by the Safe Drinking Water Act, Clean Water Act, state permits, such as the NPDES permits, state regulations and responsible treatment practices.

RESPONSE PROVIDED BY: Donna Schwartz, Philadelphia Water Department

1 **PA-II-25.** REFERENCE BV-E1, TABLE C-1, LINES 4-8. PLEASE EXPLAIN WHY EACH
2 FY INCREASE HAS 10 EFFECTIVE MONTHS. WHAT IS THE IMPACT OF 10
3 OPPOSE TO 12 EFFECTIVE MONTHS.
4

5 **RESPONSE:**

6 As presented in PWD Exhibits 3A, 3B, 3C, 3D, 3E, and 3F, the proposed schedules of rates
7 and charges are to be effective on September 1st during fiscal years 2019, 2020 and 2021.

8 Therefore, each increase will only be effective for 10 months of the initial fiscal year.
9

10 The September 1st effective date, impacts both billings and revenue receipts in the initial fiscal
11 year as follows:

- 12 ○ Reduced Billings and revenues under proposed rates:
 - 13 ○ Billings reflect 10 months at the proposed rates during each fiscal year.
 - 14 ○ The additional revenue receipts reflect only 98.1% of the level of additional
15 revenues that would have been received if rates were effective for a full year
16 (i.e. 12 month period).
 - 17 ○ The combined impact of the reduced billings and collections (during the year in
18 the which the proposed rates become effective) results in approximately 81.8%
19 of the additional revenues that would be realized if implemented for a full fiscal
20 year. The revenue adjustments presented in Schedule BV-E1, Table C-1, Lines
21 4-8, reflect the additional revenues to be received during 10 months of the fiscal
22 year (September to June).
- 23 ○ Higher withdrawal from the Rate Stabilization Fund (RSF): As the proposed rates do
24 not reflect rate compression (needed to adjust for the 10-months effective rate period),
25 the shortfall in additional revenues is offset by higher withdrawal from the Rate
26 Stabilization Fund to meet the fiscal year annual revenue requirement.
27

28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

1 **PA-II-26.** REFERENCE BV-E1, TABLE W-8, LINES 14-15. PLEASE IDENTIFY EACH OF
2 PWD'S FILTERED WATER STORAGE FACILITIES AND THE MAXIMUM
3 CAPACITY OF EACH FACILITY.
4

5 **RESPONSE:**

6 **Water Storage Capacity by Facility**

7 Facility	Treated Water (MG)
8 Queen Lane Plant	85
9 Belmont Plant	42.1
10 Baxter Plant	196**
11 Distribution System*	271**

12

13 mg – million gallons

14 * Includes treated water stored at East Park Reservoir, Roxborough Basins
15 and Standpipes, Somerton Standpipes, Foxchase Tank, and Oak Lane
16 Reservoir.

17 ** There are currently capital projects underway for the Baxter Plant
18 clearwell and East Park Reservoir facilities. Upon completion of these
19 projects, the treated water storage capacity will be reduced
20
21

22 **RESPONSE PROVIDED BY:** Donna Schwartz, Philadelphia Water Department
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1 **PA-II-27.** REFERENCE BV-E1, TABLE W-10, LINES 3 AND 11. PLEASE PROVIDE A
2 BREAKDOWN OF THE COMPONENTS OF THESE COSTS AND EXPLAIN
3 HOW THESE COSTS WERE ALLOCATED TO FUNCTION.
4

5 **RESPONSE:**

6 A detailed breakdown of line item 3, Raw Water Power & Pumping –Other operation and
7 maintenance expenses, is presented on PWD Exhibit-6: Black & Veatch Management
8 Consulting, LLC, Calculations Supporting Schedules BV-E1, BV-E2, and BV-E3, Womallo-
9 14, Line 4 (Raw Water Power & Pumping - Baxter Treatment Plant - All Other Costs) and
10 Line 8 (Raw Water Power & Pumping – All Other Treatment Plants - All Other Costs).
11 The O&M expenses allocated to the Raw Water Power & Pumping –Other function include a
12 proportionate share of the Operations Division load control, machine shop and materials
13 management units, and a proportionate share of Water Fund administrative and general costs.
14

15 A detailed breakdown for line item 11, Purification and Treatment - Treatment - Other
16 expenses, is presented on PWD Exhibit-6: Black & Veatch Management Consulting, LLC,
17 Calculations Supporting Schedules BV-E1, BV-E2, and BV-E3, Womallo-14, Line 15
18 (Treatment - Purification - Baxter Treatment Plant - All Other Costs) and Line 21 (Treatment -
19 Purification - All Other Treatment Plants - All Other Costs). The O&M expenses allocated to
20 the Purification and Treatment - Treatment - Other function include the Operation Division
21 treatment plant and treatment headquarters costs, proportionate share of the Operations
22 Division machine shop and materials management unit, and a proportionate share of Water
23 Fund administrative and general costs.
24

25 Note - the same allocation process for the above referenced costs was utilized in prior
26 proceedings.
27

28 **RESPONSE PROVIDED BY:** Black & Veatch Management Consulting, LLC

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PA-II-28. REFERENCE BV-E1, TABLE W-11. PLEASE EXPLAIN WHERE THE USAGE OF THE CITY LEASED PROPERTIES AND CITY GOVERNMENT CUSTOMER CLASSES FROM THE 2017 - 2018 PROCEEDING ARE INCLUDED IN THIS TABLE.

RESPONSE:

Usage associated with City Leased Properties and City Government Customer Classes are included with the usage for Commercial properties as shown on Line 3 in Table W-11.

RESPONSE PROVIDED BY: Black & Veatch Management Consulting, LLC