PA-EXE-187. Reference Exhibit BV-E1, Table W-10. Please identify by line item, the costs associated with water quality testing reflected in test year O&M expense.

#### **Response:**

The estimated FY 2016 costs of the Bureau of Laboratory Services (BLS) are included in the following line items in Table W-10.

Line		FY 2016
Item	Description	Costs
2	Raw Water Pumping – Other	\$119,211
5	Purification & Treatment – Power & Pumping – Other	\$526,252
8	Purification & Treatment – Other	\$2,078,794
12	Mains	\$2,073,851
13	Meters	\$201,740
14	Fire Hydrants	\$131,711
15	Filtered Water Storage	\$86,953
16	High Pressure Fire System	\$86
18	Customer Accounting & Collection	\$488,686
21	Administrative & General	\$609,346
	Total	\$6,316,630

Notes: Allocation of the FY 2016 BLS costs are presented on PWD Exhibit-6: Black & Veatch Corporation Cost of Service Work Papers, WCOS15\_2017, Womallo-14

There are additional water quality testing costs included in Line 8 (Purification & Treatment – Treatment – Other) of Table W-10 which are associated with the labs located at each of the water treatment plants. The budgeted costs for each water treatment plant include the lab costs at each plant. At this time the costs for these labs are not readily identifiable as there is not a specific cost center or unit within the treatment plant budgets to isolate these lab costs.

PA-EXE-188. 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. Refer to response attachment to PA-EXE-188for Philadelphia Water Department's 2015 drinking water quality report, featuring data collected in 2014, for more information.

Response Provided By: Debra McCarty, Philadelphia Water Department

PA-EXE-189. Reference the response to PA-EXE-164. This response does not refer to the Total Test Year Water Use for Private Fire Protections reflected on Table W-11. It refers to the 55 MG/year estimate for public firefighting identified in the response to PA-EXE-86. Is 55 MG/year equivalent to 55,000,0000 gallons? Is 55,000,000 gallons equivalent to 7,352 Mcf? If the response to either question is no, please provide the correct equivalent complete with supporting calculations.

#### **Response:**

- 1. 55 MG/year is equivalent to 55,000,0000 gallons.
- 2. 55,000,000 gallons is equivalent to 7,352 Mcf.

PA-EXE-190. Reference the response to PA-EXE-174.

- a. What evidence does the PWD have to support the claim that the volume of stormwater treated has been reduced? Please provide such evidence; and
- b. If no such evidence exist, please explain why the PWD has not investigated whether the volume of stormwater treated has been reduced.

#### **Response:**

PWD monitors and collects data for the stormwater reduction that occurs at individual project sites. Using this data, PWD extrapolates the expected performance of private and public systems using detailed hydrologic and hydraulic modeling to estimate the cumulative volume of stormwater reduction for the entire city and larger areas.

Direct measurement of the cumulative reduction of stormwater flow from the entire system is not feasible until a reduction of flow greater than 20% can be achieved cumulatively in the sewer due to limitations of flow monitoring variability and accuracy of the sensors.

This will most likely not be directly measureable until after 2021, but the Department is currently designing programs to monitor large scale system flows in the future.

**Response Provided By:** Erin Williams, Chris Crockett, Steve Furtek, Philadelphia Water Department

- PA-EXE-191. Reference the 2016 budget detail presented at http://www.phila.gov/finance/reports-BudgetDetail.html.
  - a. Please explain the reason for the \$643,000 increase in the 2016 budget for professional services (Code 250) for the Human Resources Division.
  - b. Please explain the reason for the \$350,000 increase in the 2016 budget for Architectural & Engineering Services (Code 257) for the Human Resources Division.
  - c. Please explain the reason for the \$969,500 increase in the 2016 budget for repairs and maintenance (Code 260) for the Human Resources Division.
  - d. Please explain the reason for the \$408,518 increase in the 2016 budget for Building & Construction (Code 305) for the Human Resources Division.
  - e. Please explain the reason for the \$218,000 increase in the 2016 budget for Furniture & Furnishing (Code 430) for the Human Resources Division.
  - f. Please explain the reason for the \$4,845,000 increase in the 2016 budget for Electric Current (Code 220) for the Operations Division.
  - g. Please explain the reason for the \$1,692,000 increase in the 2016 budget for Gas Services (Code 221) for the Operations Division.
  - h. Please explain the reason for the \$1,777,000 increase in the 2016 budget for Repair & Maintenance Charges (Code 260) for the Operations Division.
  - i. Please explain the reason for the \$1,519,000 increase in the 2016 budget for Lease Payments (Code 281) for the Operations Division.
  - j. Please explain the reason for the \$477,000 increase in the 2016 budget for Computer Equipment & Peripherals (Code 427) for the Operations Division.
  - k. Please explain the reason for the \$4,845,000 increase in the 2016 budget for Electric Current (Code 220) for the Operations Division

#### **Response:**

- a. The \$520,000 of the increase for professional services (Code 250) for the Human Resources Division is due to the transfer of class 250 contracts from Finance to Human Resources. As such, this is not an increase rather a divisional realignment.
  - The remaining portion of \$123,000 is related to increases in contracts for commercial driver license training, succession planning / sustainable organization and apprentice programs.
- b. The increase in the 2016 budget for Architectural & Engineering Services (Code 257) for the Human Resources Division is due to the transfer of class 257 from Finance to Human Resources which totaled \$240,000. As such this is not an increase rather a divisional realignment.
  - The increase of \$110,000 is primarily due to additional work space needs.
- c. The \$969,500 increase in the 2016 budget for repairs and maintenance (Code 260) for the Human Resources Division is due to the transfer of class 260 from Finance to Human Resources. As such this is not an increase rather a divisional realignment.
- d. The \$375,000 of the \$408,518 increase in the 2016 budget for Building & Construction (Code 305) for the Human Resources Division is due to the transfer of class 305 from Finance to Human Resources.
- e. The \$218,000 increase in the 2016 budget for Furniture & Furnishing (Code 430) for the Human Resources Division is primarily due to additional work space needs.
- f. The \$4,845,000 increase in the 2016 budget for Electric Current (Code 220) for the Operations Division represents the required budgetary appropriation needed for fluctuations in demand, charges not related to energy consumption and spot market purchases.
- g. The \$1,692,000 increase in the 2016 budget for Gas Services (Code 221) for the Operations Division represents the required budgetary appropriation needed for fluctuations in demand, charges not related to energy consumption and spot market purchases.
- h. The \$1,777,000 increase in the 2016 budget for Repair & Maintenance Charges (Code 260) for the Operations Division over the 2015 estimated obligations is due to an ongoing critical repairs such as; mechanical repair services, process automation maintenance and support, expansion joint repair to settlement tank walls and/or gallery, increase for gear boxes, flocculation & digester tank cleaning and corrosion system replacements.
- i. The increase in 2016 budget for lease payments is primarily driven by increased payments to the Philadelphia Municipal Authority for the Northeast Water Pollution Control Plant Digester Gas Cogeneration Facility. The initial lease payments were

structured to assume the maximum benefit from the Federal Government; however, the Federal Government reduced subsidies thereby increasing the Departments lease payments.

- j. The \$477,000 increase in the 2016 budget for Computer Equipment & Peripherals (Code 427) for the Operations Division is due to the need to invest in critical equipment for the Baxter Water Treatment Plant such as zeta meters, density meters and distributed process control system items including a Citect Server and a planned upgrade of the distributed process control system.
- k. Duplicate question. Please refer to EXE 191(f) above.

Response Provided By: Melissa La Buda and Debra McCarty, Philadelphia Water Department

- PA-EXE-192. Reference the 2016 budget detail presented at http://www.phila.gov/finance/reports-BudgetDetail.html.
  - a. Please explain the nature or the reason for the succession planning services for the Human Resources Division, and why it appears to be an annual budget line item since FY 2014. Explain in your response whether a new succession plan necessary every year.
  - b. Please provide the details of the executive search services of \$100,000 for the Human Resources Division. Please indicate in your response the position related to the search and whether it has been filled.
  - c. Please explain the nature of the "Customer service field ops auditor service" for \$420,000 for the Human Resources Division. In your response please indicate how often such service is required.
  - d. Please explain the nature or the reason for the Wastewater Master Planning services for \$1,450,000 for the Planning and Environmental Services Division. Please explain the reason for the increase in the budgeted amount and how long these services are expected to continue.
  - e. Please explain the nature or the reason for the Wastewater Res.- Anaerobic Digest Trial for \$250,000 for the Planning and Environmental Services Division. Please explain how long these services are expected to continue.
  - f. Please explain the nature or the reason for the Stormwater Plan Review Backup Utility services for \$1,145,000 for the Planning and Environmental Services Division. Please explain the reason for the increase in the budgeted amount and how long these services are expected to continue.
  - g. Please explain the nature or the reason for the Flood Management Program for \$550,000 for the Planning and Environmental Services Division. Please explain the reason for the increase in the budgeted amount and how long these services are expected to continue.
  - h. Please explain the nature or the reason for the LAMP- Collection & Distribution System Planning for \$350,000 for the Planning and Environmental Services Division.
  - i. Please explain the nature or the reason for the Inspection/Green Infrastr. Maint.-Stormwtr Mgmt Facil. for \$3,250,000 for the Planning and Environmental Services Division. Please explain the reason for the

increase in the budgeted amount and how long these services are expected to continue.

#### **Response:**

- a) The need for the succession planning services was primarily due to the age demographics of a significant percentage of senior staff, as well as the ongoing staff attrition resulting from the City's Deferred Retirement Option Plan and early retirement. While succession planning was not the exclusive concern to be addressed by the contractor, it was listed as Task 1 in a sustainable organization scope. Therefore, when providing the brief description in the budget documents, this singular task was cited and was not intended to be exclusive. Nor was it anticipated that all the work proposed would be completed by the end of FY14. As such, succession plans were not developed each year.
- b) A single executive search firm contract was shared by the Airport, Streets Department and Water Department in the event any one of these Departments required these services. Since FY15, none of the Departments have utilized executive search services, as such, no funds, Water or otherwise, have been paid to this contractor since then.
- c) This contract is to analyze and propose customer and operational improvements in several units, including Field Operations and the Call Centers. As a result of that effort, the Department decided to focus on improvements in the Call Centers. The consultant assisted with this implementation during 2015 and will continue to assist with this in 2016 as well as work on utility marking (PA-1 Call) efforts.
- d) The Wastewater Master Planning services are responsible for supporting delivery of a long-term master plan for the City's wastewater collection and treatment facilities. The plan incorporates near term and long term capital and asset needs for the wastewater system including compliance with the Consent Order and Agreement (COA). Through this planning, the Department is able to prepare for emerging regulations and optimize capital investments in the wastewater system. Professional service contracts are limited to 3 1 year renewal periods.
- e) The Wastewater Research Anaerobic Digester Trial was a pilot study of an innovative technology for increasing wastewater treatment efficiency at the Southwest Treatment Plant. The project is discontinued beyond FY16 and the funds have been allocated within the Division to cover other additional class 250 requirements. Professional service contracts are limited to 3 1year renewal periods.
- f) This contract provides technical and field support for ensuring compliance with the City's Stormwater Regulations, Consent Order and Agreement, NPDES MS4 Permits and state Act 167. The Stormwater Plan Review program, through the Stormwater Regulations, helps the City obtain additional acres needed for compliance with the Consent Order and

Agreement at no additional capital costs. In July 2015 an update to the Stormwater Regulations went into effect and an increase in development plan submissions was anticipated. As part of the FY16 budget planning, this contract budget was increased to \$1,145,000 is needed to maintain compliance and to provide timely and effective plan reviews and site inspections. Professional service contracts are limited to 3 – 1year renewal periods.

- g) As one of the operating departments in the City, the Department plays a role in the City of Philadelphia's overall planning and response to flooding hazard and mitigation. The funding for the Flood Management Program is required for the evaluation, planning and subsequent capital improvements of the wastewater collection system as needed throughout the City. It is anticipated that this effort will continue for several years. Professional service contracts are limited to 3 1 year renewal periods.
- h) The Linear Asset Management Program (LAMP) is responsible for providing engineering analyses, planning support, emerging technology research and infrastructure recommendations for the Department's wastewater collection and water distribution systems, consisting of over 6,000 miles of water and sewer pipe. The Water Department is using this information to predict long-term water main replacement needs and refine the decision criteria for replacement selection. For the past 5 years of the program the primary focus has been on risk based prioritization of water main renewal and replacement for improving performance and customer service.
- i) This contract serves as the primary mechanism by which PWD maintains and operates PWD-owned green stormwater infrastructure (GSI) assets. The services required in FY2017 entail inspection and maintenance of both surface and subsurface components for approximately 1,000 storm water management practices (SMPs). This is a substantial increase in the scope of work from FY2016 in which a total of a 580 SMP's require inspection and maintenance services. It is expected that the budget for these services will continue to increase through the study period.

**Response Provided By:** Gerald Leatherman, Chris Crockett, and Steve Furtek, Philadelphia Water Department

PA-EXE-193. Reference the 2016 budget detail presented at http://www.phila.gov/finance/reports-BudgetDetail.html. Please reconcile the 2016 Finance Division subtotal of \$31,958,700 under Assumptions-23 of the Black & Veatch Supporting Exhibit to the Budget Detail of amount of \$86,421,700.

#### **Response**:

The budgeted FY 2016 Finance Division Operation & Maintenance expense in Workpaper Finplan15.xls, Assumptions-23 excludes the following budgeted expenses:

- Payments to Capital Fund (\$21,215,000). Note that this budgeted transfer to the Capital Fund is excluded from Operating and Maintenance Expense (Lines 17 to 19 of Table C-1), but is reflected on Line 29 (Capital Account Deposit) of Table C-1 of PWD St.-9A: Direct Testimony and Exhibits of Black & Veatch Corporation.
- Payments to Residual Fund (\$33,248,000). Note that this budgeted transfer to the Residual Fund is excluded from Operating and Maintenance Expense (Lines 17 to 19 of Table C-1), but is reflected on Line 33 (End of Year Revenue Fund Balance) of Table C-1 of PWD St.-9A: Direct Testimony and Exhibits of Black & Veatch Corporation.

The following table provides a summary of the basis for the FY 2016 Finance Division budget presented on Workpaper Assumptions-23.

FY 2016 Budget Detail	Amount	FY 2016 Page Reference
Total Finance Division Budget	\$86,421,700	Section 56, Page 23
Less: Payments to Capital Fund	(\$21,215,000)	Section 56, Page 30
Less Payments to Water Residual Fund	(\$33,248,000)	Section 56, Page 30
Net Finance Division Budget	\$31,958,700	

PA-EXE-194. Regarding the reply to PA-EXE-137 and Assumptions-6 and Assumptions-8, please provide detailed workpapers (not references) supporting the Calculated Billings Adjustment Factors.

#### **Response**:

As indicated in the prior response to PA-EXE-137, the Billing Adjustment Factors are allowances for risks associated with assumptions used in the development of billing projections such as customer distributions, billed volume distributions, projected number of accounts, and usage per account. There are no other detailed workpapers other than those reflected in the projected billings presented in PWD Exhibit-6: Black & Veatch Corporation Cost of Service Work Papers, Finplan15, Customer - 6, Customer - 7, Customer - 15, and Customer - 16, as summarized in the following table.

Description	FY 2016	FY 2017	FY 2018	Source
Water Billings (\$1,000)				
Prior to Adjustment Factor	262,501	260,764	259,037	Customer - 6
After Adjustment Factor	261,229	259,501	257,783	Customer – 7
Adjustment Factor Impact	(1,272)	(1,263)	(1,254)	
Percent Impact	(0.5%)	(0.5%)	(0.5%)	
Sanitary Billings (\$1,000)				
Prior to Adjustment Factor	208,359	207,055	205,759	Customer – 15
After Adjustment Factor	206,706	205,412	204,124	Customer - 16
Adjustment Factor Impact	(1,653)	(1,643)	(1,633)	
Percent Impact	(0.8%)	(0.8%)	(0.8%)	

As an example of the potential risks involved, consider the following risk associated with the projected water usage per account which is only one of the risks identified. The projected billed volumes are based on the historical three year average from FY 2013 to FY 2015, which results in the overall average usage per account of 12.16 Mcf/Account for the projected water billed volume for FY 2016 to FY 2018. However the minimum average sales per account experienced during FY 2013 to FY 2015 was 12.08 Mcf/Account in FY 2014, which is 1.4% less than the projected average usage per account.

	Basis of	Potential	Potential	
Description	Financial Plan	Risk	Impact	Source
Average Usage Per	Historical	Historical	Reduced Billable	
Account Basis	3 Year Average	3 Year Minimum	Volumes	
	FY 2013 – FY 2015	FY 2013 – FY 2015	Volumes	
Overall Average	12.16 Mcf/Account	12.08 Mcf/Account	(1.4%)	Cystoman 1
Usage Per Account	(FY 2016 – FY 2018)	(FY 2014)	(1.4%)	Customer – 4

PA-EXE-195. Regarding PA-EXE-31 Response Attachment 1, please update this schedule (not references) to include data for Fiscal Year 2015.

### **Response:**

See response attachment PA-EXE-195.

PA-EXE-196. Regarding the reply to PA-EXE-115, please provide a schedule (not reference) supporting the line "Net Cash Financing Required" on Tables W-3 and WW-3.

#### **Response:**

<u>Line No.</u>	Daneninsties							
	Description	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
	CIP Budget Inflate	d						
1	Water <sup>1</sup>	102,111	110,992	113,970	139,171	144,574	150,190	132,62
2	Sewer <sup>2</sup>	158,242	173,049	186,416	193,687	201,243	209,097	235,11
3	Total <sup>3</sup>	260,353	284,041	300,385	332,857	345,818	359,287	367,73
	Distribution							
4	Water	39.2%	39.1%	37.9%	41.8%	41.8%	41.8%	36.1
5	Sewer	60.8%	60.9%	62.1%	58.2%	58.2%	58.2%	63.9
6	Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0
	CIP Expenditures (	Net Cash Financin	ng Required)					
7	Water	68,286	94,780	106,994	125,433	125,420	125,407	108,19
8	Sewer	105,823	147,773	175,006	174,567	174,580	174,593	191,80
9	Total⁴	174,109	242,553	282,000	300,000	300,000	300,000	300,00

Notes:

- 1) Refer to PWD Exhibit 6: Black & Veatch Corporation Financial Plan, Capital Project Scen 4 1B (PDF Page # 296).
- 2) Refer to PWD Exhibit 6: Black & Veatch Corporation Financial Plan, Capital Project Scen 4 2B (PDF Page #300).
- 3) Refer to PWD Exhibit 6: Black & Veatch Corporation Financial Plan, Capital Project Scen 4 3A (PDF Page # 301).
- 4) Total CIP Expenditures as provided by PWD and not inflated beyond the rate period

Distribution of capital costs for water and sewer are calculated as the ratio of the respective capital improvements costs to the total CIP budget (inflated).

I.E. Distribution for Water = Line 1/Line 3 x 100; Distribution for Sewer = Line 2/Line 3 x 100.

Distribution for Sewer = Line 2/Line 3 x 100.

CIP Expenditures (Net Cash Financing Required) are distributed to water and sewer respectively each fiscal year based upon the Distribution of the overall capital budget.

I.E. CIP Expenditures (Net Financing Cash Required) for Water = Line 9 X Line 4  $\,$ 

I.E. CIP Expenditures (Net Financing Cash Required) for Sewer = Line 9 X Line 5

PA-EXE-197. Please provide schedules showing the changes to Assumptions-22A and Assumptions-22B (see PWD Ex. 6) calculating the actual averages and showing the actual expenditures for FY 2015 based on the Department's Audited Financial Statements.

#### **Response**:

The work papers referenced, Assumptions-22A and Assumptions 22-B, were based on the data available during the development of the cost of service study which reasonably represented the final FY 2015 actual expenditures. The following table provides summary comparison of the final FY 2015 actual expenditures reflected in the referenced work papers and the Departments Audited Financial Statements.

	Audited Financial			
Description	Statements <sup>1</sup>	Work Papers <sup>2</sup>	Variance	
	(\$1,000)	(\$1,000)	(\$1,000)	
Personal Services	118,718	118,718	0	
Pension Contributions	52,277	52,277	0	
Other Employee Benefits	48,293	48,293	0	
Purchase of Services	149,986	149,589	397	
Materials, Supplies & Equipment	47,407	47,355	52	
Contributions, Indemnities and	3,842	3,842	0	
Taxes	3,042	3,042	U	
Payment to General Fund <sup>3</sup>	6,245	6,245	0	
Total	426,768	426,319	449	

#### Notes:

- 1. City of Philadelphia Comprehensive Annual Financial Report Fiscal Year Ended June 30, 2015 (page 149).
- 2. Based on the total Water Fund costs presented on Work Papers Assumptions-22B and Assumptions-30.
- 3. Excludes Payment to Capital Fund (\$20,705), Payment to Residual Fund (\$26,507), and Payment to Rate Stabilization Fund (\$21,456).

As presented in the summary comparison table, the final FY 2015 actual expenditures reflected in the Audited Financial Statements are \$449,000 higher than the FY 2015 actual expenditures reflected in the work papers. Since this total variance represents 0.1% of the total FY 2015 actual expenditures, it is not anticipated that this variance will have a significant impact on the cost of service analysis. Please note that revised schedules showing changes to the referenced work papers based on the Department's Audited Financial statements will reflect the slightly higher actual expenditures and slightly higher average actual to budget factors.

PA-EXE-198. For each fiscal year 2013, 2014 and 2015, please quantify the amount loaned from the Rate Stabilization Fund to the Revenue Fund.

#### **Response:**

The Water Department typically makes an interfund loan of \$45 million in each Fiscal Year from the Rate Stabilization Fund to the Revenue Fund to provide working capital, which loan is repaid at the end of such Fiscal Year.

Response Provided By: Melissa La Buda, Philadelphia Water Department

PA-EXE-200. Reference the chart below, titled "Philadelphia Water Department Flow of Funds," (provided in the PWD 2002 rate increase proceeding).

- a. Is this an accurate portrayal of PWD's treatment of Project Revenues pursuant to the 1989 General Bond Ordinance?
- b. If the answer to PA-EXE-200(a) is anything other than an unqualified "yes", please explain any treatment of Project Revenues inconsistent with this chart and the basis therefor.

#### **Response:**

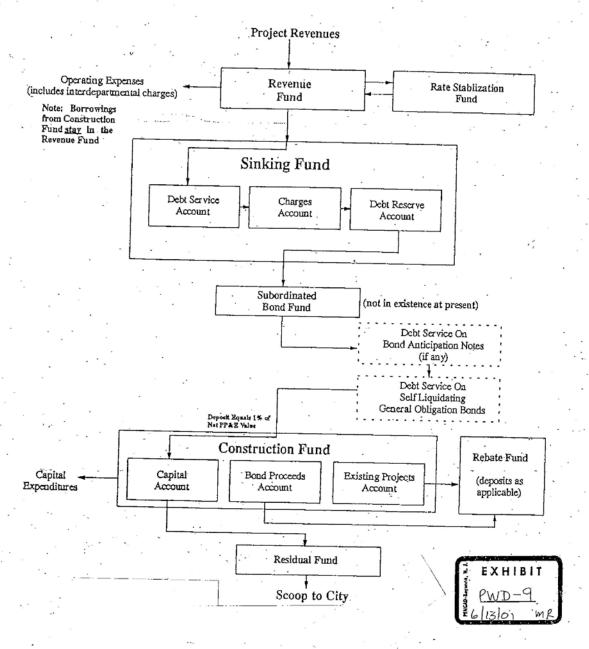
The chart is not materially inaccurate. Please see response attachment PA-EXE-200 for the flow of funds. Please note that this is the same flow of funds as provided in Standard Interrogatory #31, City of Philadelphia, Water and Wastewater Revenue Bonds, Official Statement 2015AB, page number 9, chart titled "Application of Project Revenues".

Response Provided By: Melissa La Buda, Philadelphia Water Department

# Philad lphia Water Deparment

### Flow of Funds

Amended and Restated General Water and Wastewater Revenue Bond Ordinance of 1989 and ordinance of the state o



Sheth Barney Harris Wham & Co., Incorporated FLEXUAL PSILWATTRE