

THE CITY OF HARRISBURG
DEPARTMENT OF PUBLIC WORKS
BUREAU OF WATER

MONTHLY REPORT



The emergency spillway at DeHart during the flood of September 2011.

September 2011

Linda D. Thompson, Mayor
City of Harrisburg

J. Marc Kurowski ,Chairman
The Harrisburg Authority

Ernest Hoch, Director
Department of Public Works

Raly Bey, Director
Bureau of Water

GENERAL

During the month of September 2011, the Bureau of Water met all Federal Safe Drinking Water Act Primary Water Quality Standards. Shown in Exhibit B, a total of 245.86 million gallons (MG) of water were treated and distributed to the Harrisburg Water System. A total of 259.89 MG were withdrawn from our water supply sources. A total of 259.89 MG were withdrawn from DeHart Reservoir; 0 MG were withdrawn from Susquehanna River; and United Water of Pennsylvania withdrew 0 MG via their raw water interconnect. Data collected through August is presented in Exhibit B with flows in MGD. The data is broken down into the DeHart Reservoir and Susquehanna River sources.

OPERATIONS

During the month of September 1, 2011 through September 30, 2011, the DeHart Water Treatment Train was in service thirty days and the Susquehanna Water Treatment Train was in service zero days. An estimated 4924.6 million gallons were released from the DeHart to Clark's Creek, averaging 160.8 MGD during the month. This down stream flow, which is received by remote flow monitoring from the weir location and actual staff gauge readings, exceeded the flow required by the State Water Allocations Permit (Exhibit E).

During the month of September, the Hydro-Turbine generator operated for 0 days and produced 0.0 kWh (kilowatt-hours) with an anticipated savings of \$0.00 (refer to Exhibit G).

The DeHart watershed had above average rainfall in September (Exhibit C). The pH of the rainfall during this period averaged 6.20 units. The DeHart water level increased (Exhibit D).

September 2011 Accomplishments

Operations Division

- Attended monthly Bureau Safety Committee and Staff meetings.
- Analyzed data gathered from reservoir and stream monitoring.
- Continued monitoring flow of Clark Creek entering the reservoir.
- Patrolled watershed as scheduled/required.
- Initiated basin cleaning.

Water Quality Division

- Attended monthly Bureau Safety Committee and Staff meetings.
- Continued to maintain the water quality control and assurance schedules.
- Prepared monthly reports for submittal to the DEP.
- Assisted other Divisions in the Bureau as needed.

Maintenance Division

- Attended monthly Bureau Safety Committee and Staff meetings.
- Prepared work schedules and supervise personnel assigned to the DeHart Dam Complex.
- Completed Right to Know training.
- Continued scheduled preventive maintenance, and repaired equipment as required.
- Continued seasonal grass cutting and lawn maintenance.
- Finished cinderblock wall for the wash bay, in the 6 bay garage.
- Installed new Endress & Hauser ph meter on the flumes.
- Performed scheduled cleaning duties at Bureau Facilities.
- Continued Pulpwood Sales 8, and 9.
- Continued Timber Harvest #7.
- Continued to pick up trash along Route 325.
- Assisted other bureau divisions as required.

Distribution Metering Division

- Attended monthly Bureau Safety Committee and Staff meetings.
- Continued the sale of bulk water.
- Continued to work on the meter report forms and the vacant coded list.
- Assisted other Bureaus and Departments as needed.
- Performed (465) service calls.
- Right to Know training
- 4000 Industrial Rd repair 12" water main break
- Continued working on water meter battery change outs
- Lower 2 Steam vault lids for Paxton St project
- Assisted United Water during flood
- 2451 & 2417 N. 5th St repaired sink holes
- Locate Electric service at Dehart Dam

Goals for October 2011

Operations Division

- Attend monthly Bureau Safety Committee and Staff meetings.
- Monitor the reservoir for pH, algae and levels of stratification in order to determine appropriate intake levels and possible treatment.
- Continue to analyze data collected from stream and reservoir sampling.
- Prepare monthly report.
- Return Hydro-turbine to service.
- Clean basins.

Water Quality Division

- Attend monthly Bureau Safety Committee and Staff meetings.
- Continue to maintain the water quality control and assurance schedules.
- Participate in Beta Testing for Laboratory Supervision through PADEP.
- Obtain required annual Heavy Metals sample.

Maintenance Division

- Attend monthly Bureau Safety Committee and Staff meetings.
- Prepare work schedules and supervise personnel assigned to the DeHart Dam Complex.
- Continue scheduled preventive maintenance, and repair equipment as required.
- Continue seasonal grass cutting and lawn maintenance.
- Install new stainless steel plumbing and hose reels for the wash bay.
- Troubleshoot hydro-turbine and put it back in service.
- Replace roof on the 6 bay garage at DeHart.
- Get repair estimates for the concrete damage in the spillway at DeHart.
- Get estimates/repair the broken electrical line to the intake tower at DeHart.
- Clean the intake tower screens at DeHart.
- Perform scheduled cleaning duties at Bureau Facilities.
- Continue Pulpwood Sales 8, and 9.
- Continue Timber Harvest #7.
- Continue to pick up trash along Route 325.
- Continue to locate the mountain line.
- Assist other bureau divisions as required.

Distribution Metering Division

- Attend monthly Bureau Safety Committee and Staff meetings.
- Continue bulk water sales.
- Continue to work on the meter report forms, the vacant coded list, and street restorations.
- Continue to repair or replace fire hydrants as required.
- Continue to assist other departments and divisions as needed.
- Continue to perform tap removals based on the demolition list.
- Continued working on water meter battery change out.

EXHIBIT A

Process Control Water Quality Analysis - 2011

PARAMETERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Average	MCL Limits
Total Coliform Presence/Absence														
DeHart Influent	P	P	P	P	P	P	P	P	P				P	
Susquehanna Influent	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Distribution System	A	A	A	A	A	A	A	A	A				<1	< 5: Positive
Chlorine Residual, mg/L Free														
Filter Plant Effluent	1.79	1.79	1.77	1.84	1.89	1.80	1.81	1.79	1.68				1.81	
Distribution System	1.09	0.93	1.00	1.00	0.95	0.69	0.84	0.73	0.07				0.84	> 0.02
Turbidity, NTU														
Influent from DeHart	0.65	0.52	0.77	0.78	0.85	0.69	0.64	0.65	1.56				0.81	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	0.06	0.06	0.05	0.01	0.05	0.04	0.04	0.05	0.05				0.05	< 0.50
pH, Sig Units														
Influent from DeHart	5.95	5.77	5.66	5.60	5.54	5.51	5.48	5.46	5.34				5.59	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	7.78	7.60	7.63	7.88	7.83	7.82	7.60	7.93	7.66				7.84	
Distribution System	7.18	7.15	7.17	7.68	7.43	7.30	7.26	7.17	7.21				7.28	
Total Alkalinity, mg/l														
Influent DeHart, as CaCO3	5.31	5.32	5.05	4.41	4.46	5.54	4.73	5.49	5.75				5.12	
Influent Susquehanna, as CaCO3	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent, as CaCO3	14.35	14.59	14.56	13.33	13.74	14.87	17.76	25.11	26.45				17.20	
Distribution System	11.20	12.45	13.70	12.60	11.47	12.90	15.30	21.05	23.90				14.95	
Temperature, C														
Influent from DeHart	5.44	5.46	7.00	9.50	12.66	14.99	16.59	17.67	17.62				11.63	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	5.12	5.46	6.76	9.33	12.12	13.77	15.05	16.20	16.91				11.19	
Distribution System	9.75	10.50	11.08	12.49	16.42	19.83	22.95	23.36	21.40				16.42	
Fluoride, mg/l														
Filter Plant Effluent	0.96	0.93	0.88	0.82	0.81	0.85	0.72	0.89	0.85				0.86	2.00
Ammonium, mg/l														
Filter Plant Effluent	0.03	0.02	0.02	0.03	0.02	0.02	0.01	0.02	0.03				0.02	0.20
Iron, mg/l														
Influent from DeHart	0.11	0.10	0.08	0.03	0.09	0.15	0.14	0.28	0.47				0.17	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01				0.01	0.30
Distribution System	0.03	0.09	0.03	0.04	0.06	0.12	0.03	0.04	0.04				0.05	0.30
Total Dissolved Solids, mg/l														
Influent from DeHart	14.69	15.68	15.15	14.21	13.71	13.83	14.04	14.17	12.20				14.21	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	34.58	36.12	37.38	36.99	37.01	39.76	39.54	43.94	48.59				39.32	
Distribution System	35.20	36.64	37.70	37.56	39.03	39.96	40.30	48.42	49.60				40.40	
Total Hardness, mg/l														
Influent from DeHart	7.98	8.07	7.84	7.73	7.32	7.18	7.40	7.44	7.72				7.63	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	15.42	15.56	16.42	16.45	16.40	18.47	20.06	22.18	25.48				18.49	
Distribution System	13.50	15.87	19.50	16.17	16.30	18.65	20.47	21.90	25.50				18.65	
Orthophosphate, mg/l														
Filter Plant Effluent	1.12	1.03	1.11	1.13	1.20	1.13	1.09	1.07	1.05				1.11	
Distribution System	1.16	1.13	1.20	1.36	1.28	1.31	1.25	1.28	1.19				1.24	
Total Trihalomethanes, mg/l														
Distribution System	0.03	NA	NA	NA	0.05	NA	NA	NA	0.09				0.06	0.03
Total Haloacetic Acids, mg/l														
Distribution System	0.04	NA	NA	NA	0.05	NA	NA	NA	0.06				0.05	0.06
Total Organic Carbon, mg/l														
Influent from DeHart	1.90	NA	NA	NA	2.30	NA	NA	NA	2.80				2.33	
Influent from Susquehanna	NA	NA	NA	NA	NA	NA	NA	NA	NA				NA	
Filter Plant Effluent	1.20	NA	NA	NA	1.40	NA	NA	NA	1.60				1.40	
Average Filter Run, Hours	83.30	81.91	82.08	78.13	84.00	83.39	83.97	83.83	80.15				82.31	

Note: Total Hardness = Calcium Hardness + Magnesium Hardness, mg/l as CaCO3

* Running Annual Quarterly Average

EXHIBIT B

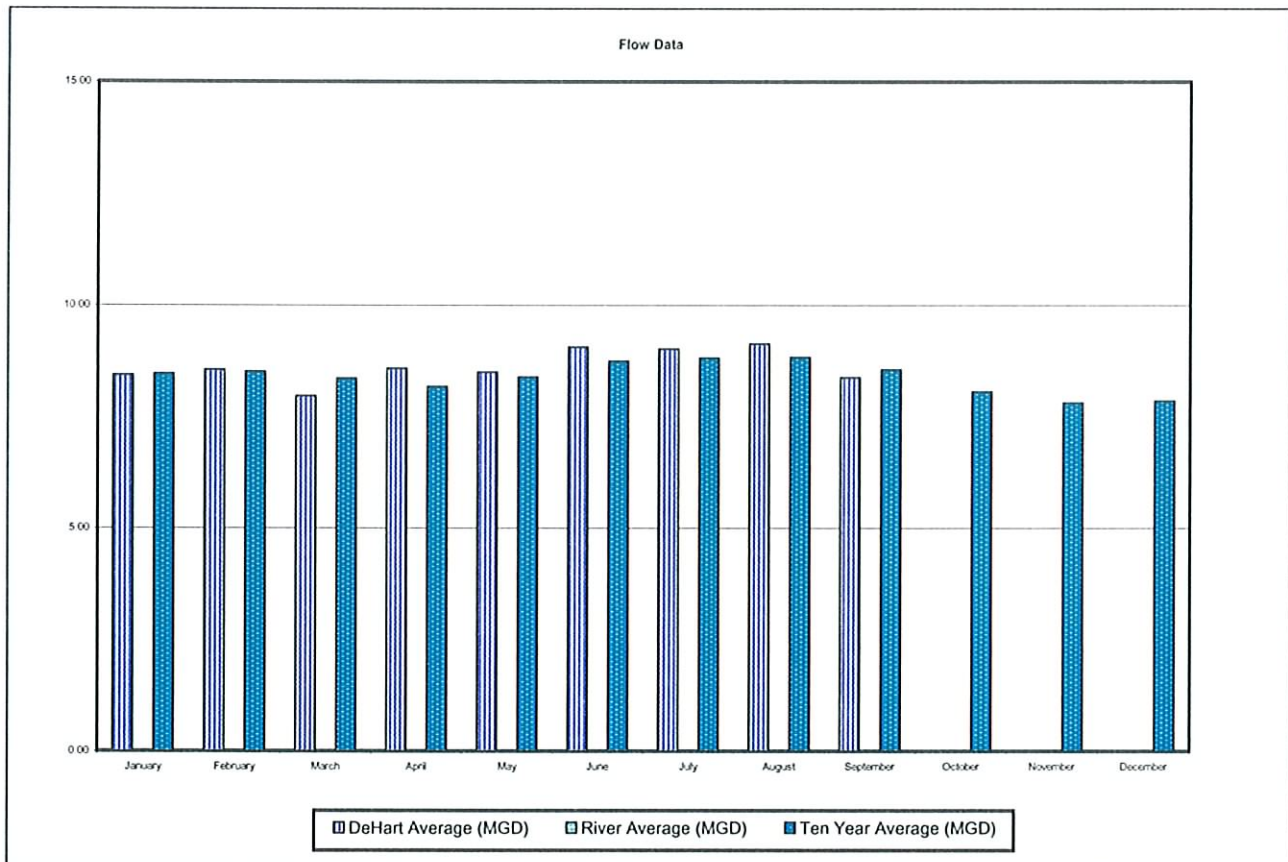
Flow Monitoring and Water Withdrawal Information 2011

Month	DeHart Total (MG)	DeHart Average (MGD)	River Total (MG)	River Average (MGD)	* U.W.P.A. Interconnect (MG)	Total Water Withdrawn (MG)	Total Water Withdrawn Avg. (MGD)	Finished Water (MG)	Finished Water (MGD)	Ten Year Average (MGD)	Process Water (MG)	Waste to Sewer (MG)
January	261.66	8.44	0.00	0.00	0.00	261.66	8.44	245.77	7.93	8.47	2.86	5.92
February	239.64	8.56	0.00	0.00	0.00	239.64	8.56	225.70	8.06	8.52	2.82	5.46
March	246.93	7.97	0.00	0.00	0.00	246.93	7.97	235.66	7.60	8.36	2.87	5.44
April	257.70	8.59	0.00	0.00	0.00	257.70	8.59	239.24	7.97	8.17	3.24	4.94
May	263.55	8.50	0.00	0.00	0.00	263.55	8.50	250.32	8.07	8.39	4.13	5.49
June	271.77	9.06	0.00	0.00	0.00	271.77	9.06	257.42	8.58	8.75	5.46	5.85
July	279.58	9.02	0.00	0.00	0.00	279.58	9.02	272.34	8.79	8.82	5.65	5.92
August	283.20	9.14	0.00	0.00	0.00	283.20	9.14	267.97	8.64	8.83	5.70	5.55
September	259.89	8.38	0.00	0.00	0.00	259.89	8.38	245.86	7.93	8.56	5.32	7.74
October										8.06		
November										7.81		
December										7.85		
Total	2,363.92	77.65	0.00	0.00	0.00	2,363.92	77.65	2,240.28	73.58	100.59	38.05	52.31
Average	262.66	8.63	0.00	0.00	0.00	262.66	8.63	248.92	8.18	8.38	4.23	5.81

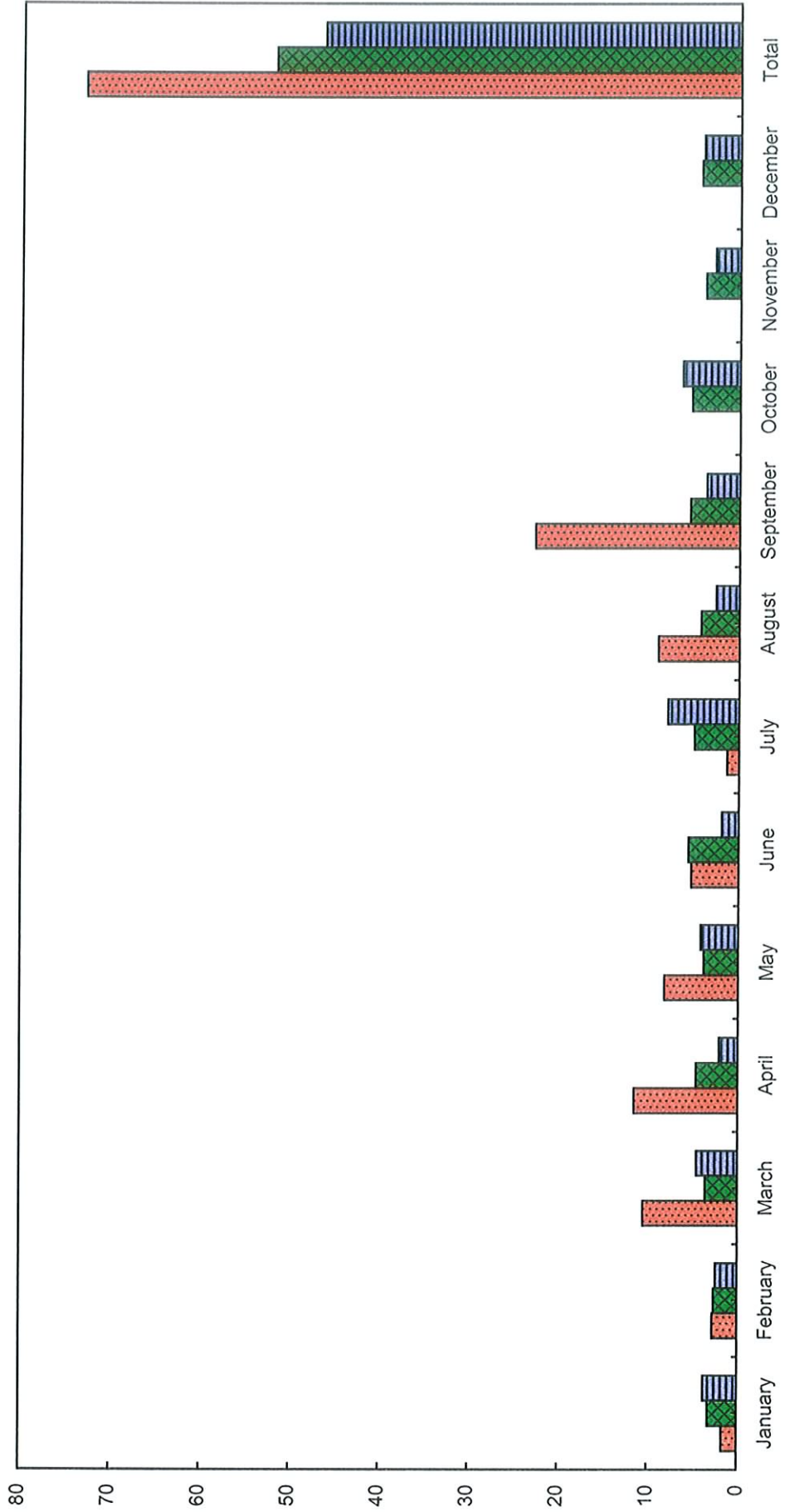
* U.W.P.A. Denotes United Water Pennsylvania

Peak Day Water Use for Report Month (MGD) 9.42 on 9/16/11

Minimum Day Water Use for Report Month (MGD) 7.98 on 9/21/11



Rainfall Trends
2011



2011 Total Ten Year Average 2010 Total

EXHIBIT D

Water Level at the DeHart Reservoir - 2010

Date	January	February	March	April	May	June	July	August	September	October	November	December
2011 AVG	-74.3	-83	-9.61	6.23	5.16	3.43	-6.7	-23.6	1.16			
Ten Year AVG	-43.59	-41.06	-30.96	-16.62	-14.38	-17.01	-29.03	-45.54	-63.99	-76.78	-81.38	-68.66
2010 AVG	3.83	3.03	4.93	3.1	2.06	-9.93	-29.41	-53.25	-84.03	-97.16	-114.3	-78.6

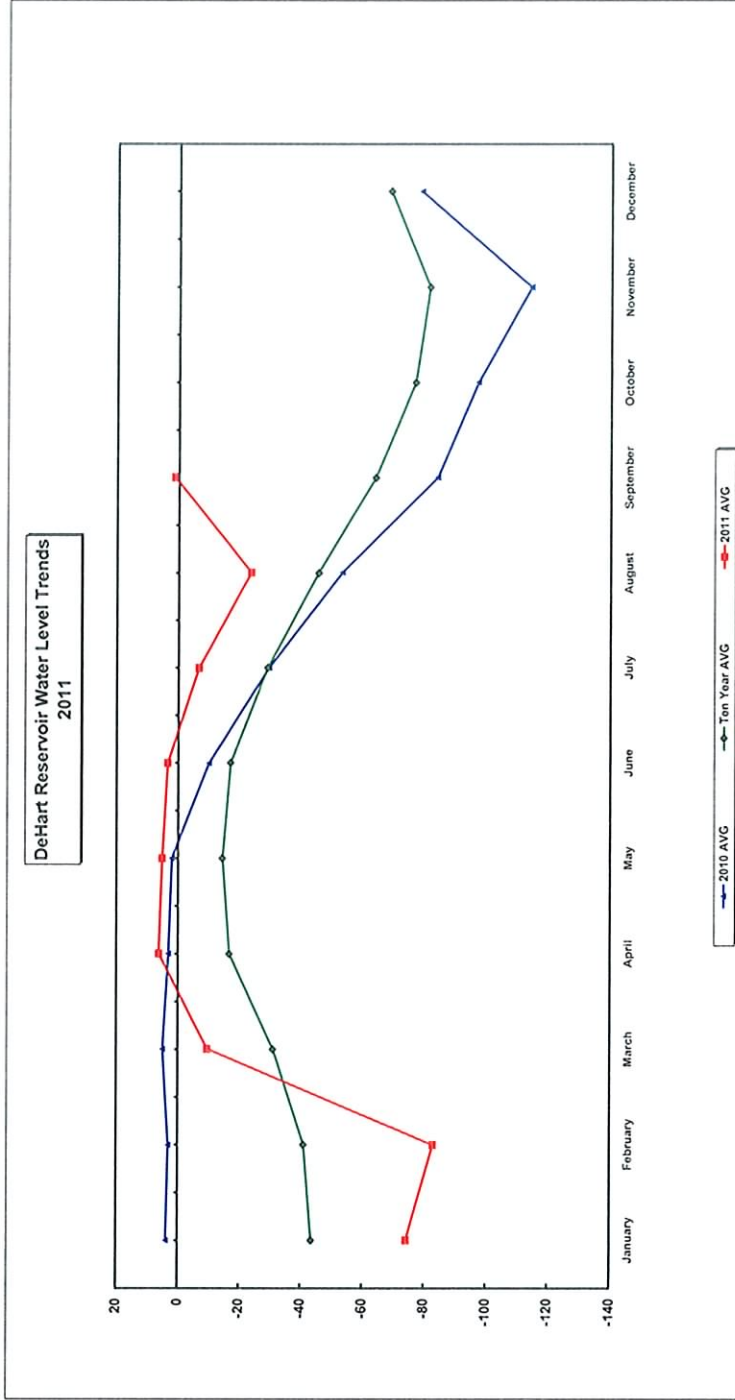


EXHIBIT E

Maintenance of Minimum Daily Conservation Release - 2011

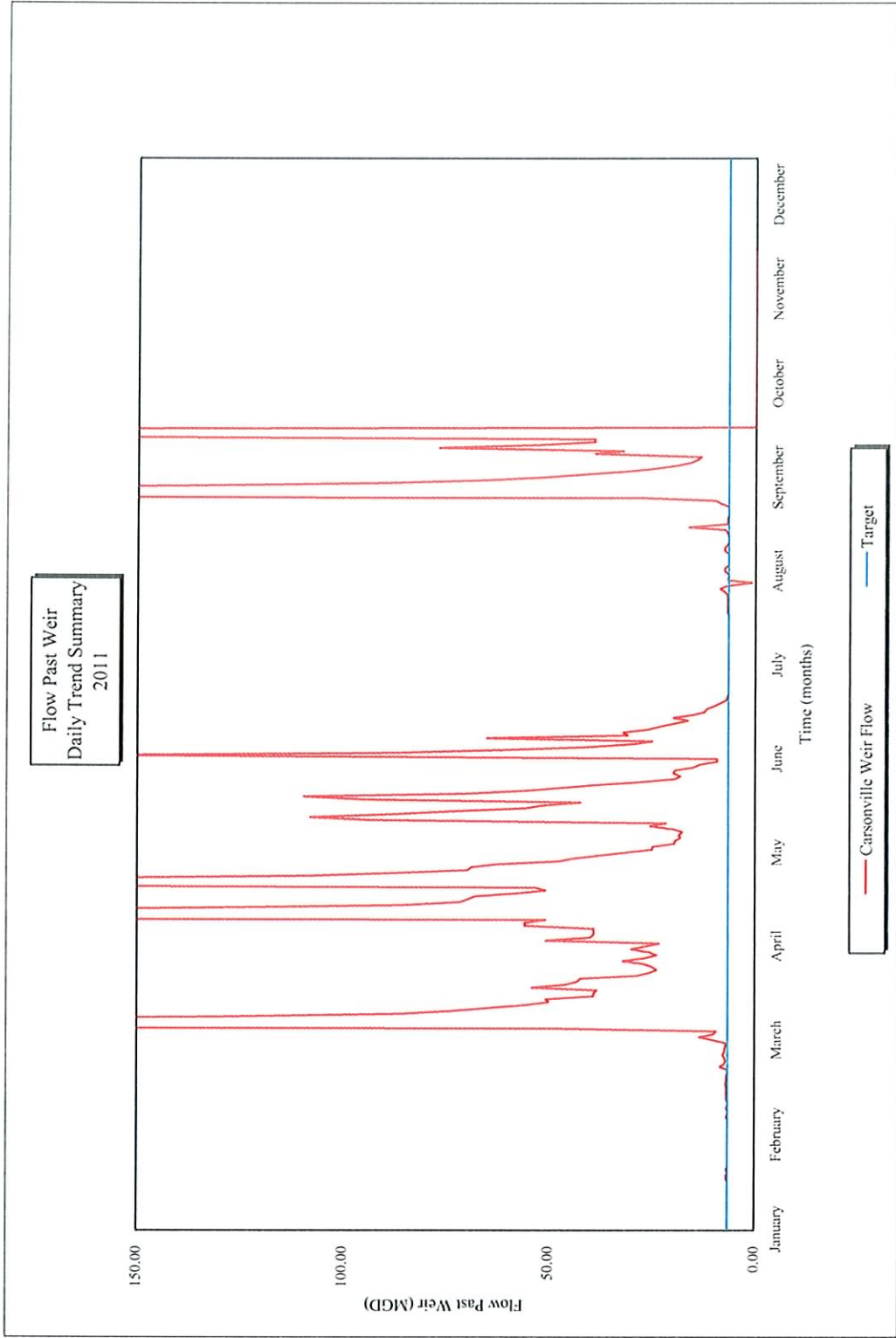


EXHIBIT F
Utility Usage - 2011

Location / Utility	January	February	March	April	May	June	July	August	September	October	November	December	Average	Total
<u>Dr. Robert E. Young Water Services Center</u>														
Electric														
Total, kWh	133,200	118,800	127,800	122,400	217,800	183,600	182,313	165,600	167,700				157,600	1,419,213
Average, kWh/Day	4,297	4,243	4,123	4,080	7,026	6,120	5,881	5,342	5,590				5,189	5,189
Cost, Dollars	\$11,849.28	\$13,450.63	\$12,056.92	\$11,818.52	\$16,932.88	\$16,866.45	\$13,602.79	\$12,355.79	\$12,512.75				\$13,494.00	\$121,446.01
Natural Gas														
Total, Cu Ft	1,411,000	1,285,000	1,019	549	232			71,700	55,600				403,586	2,825,100
Average, Cu Ft/Day	45,516	45,893	33	18	7			2,313	1,853				13,662	13,662
Cost, Dollars	\$17,714.97	\$12,430.49	\$6,257.01	\$2,943.26	\$1,268.04			\$847.94	\$657.54				\$6,017.04	\$42,119.25
Potable Water														
Total, Gal	6,200	5,300	7,700	5,700	52,300	276,000	373,500	307,100	126,700				128,944	1,160,500
Average, Gal/Day	200	189	248	190	1,687	9,200	12,048	9,906	4,223				4,210	4,210
Cost, Dollars	\$31.46	\$23.38	\$33.97	\$25.15	\$230.75	\$1,217.71	\$1,647.88	\$1,354.93	\$559.00				\$509.36	\$5,124.23
<u>Reservoir Park Pump Station</u>														
Electric														
Total, kWh	84,800	96,000	84,400	86,000	99,200	84,800	93,200	88,600	95,600				90,289	812,600
Average, kWh/Day	2,735	3,429	2,723	2,867	3,200	2,827	3,006	2,858	3,187				2,981	2,981
Cost, Dollars	\$8,304.58	\$8,613.94	\$12,365.29	\$8,938.90	\$6,983.94	\$1,563.53	\$6,735.52	\$1,627.58	\$1,756.16				\$6,321.05	\$56,889.44
Natural Gas														
Total, Cu Ft	48	41	29	6	5								14	129
Average, Cu Ft/Day	2	1	1	0	0								0	0
Cost, Dollars	\$592.01	\$335.75	\$154.46	\$34.36	\$20.20	\$13.77	\$1.00	\$1.00	\$1.00				\$128.17	\$1,153.55
Potable Water														
Total, Gal	9,673	5,597	830	550	854	976	993	1,257	810				2,393	21,540
Average, Gal/Day	312	200	27	18	28	33	32	41	26				80	80
Cost, Dollars	\$49.08	\$24.69	\$3.66	\$2.43	\$3.77	\$4.31	\$4.38	\$5.55	\$3.57				\$11.27	\$101.43
<u>Susquehanna River Pump Station</u>														
Electric														
Total, kWh	600	600	600	600	600	600	600	600	600				600	4,800
Average, kWh/Day	19	21	19	20	19	20	19	19	19				20	20
Cost, Dollars	\$73.44	\$91.79	\$96.28	\$94.22	\$33.85	\$43.47	\$23.00	\$23.00	\$23.00				\$55.78	\$428.61
Natural Gas														
Total, Cu Ft	7,600	7,600	63		14	70	0	200	5,500				2,631	21,047
Average, Cu Ft/Day	271	245	2		2	2	0	6	183				89	89
Cost, Dollars	\$923.29	\$621.51	\$334.38		\$66.71	\$220.11	\$17.81	\$239.42	\$230.83				\$331.76	\$2,654.06
Potable Water														
Total, Gal	200	100	200	1,600	200	400	700	600	1,000				556	5,000
Average, Gal/Day	6	4	6	53	6	13	23	19	33				18	18
Cost, Dollars	\$1.01	\$0.44	\$0.88	\$7.06	\$0.88	\$1.76	\$3.09	\$2.65	\$4.41				\$2.47	\$22.19
<u>Union Square Booster Station</u>														
Electric														
Total, kWh	3,084	3,168	2,850	1,907	792	318	254	322	280				1,442	12,975
Average, kWh/Day	99	113	92	64	26	11	8	10	9				48	48
Cost, Dollars	\$331.64	\$422.05	\$330.73	\$236.32	\$43.46	\$24.02	\$39.18	\$24.07	\$19.42				\$163.43	\$1,470.89
Fuel Oil														
Total, kWh	7,019	4,022	6,055	5,285	4,063	4,374	4,354	2,332	2,585				4,454	40,089
Average, kWh/Day	226	144	195	176	131	146	140	75	86				147	147
Cost, Dollars	\$757.32	\$390.72	\$695.17	\$610.22	\$430.93	\$400.37	\$386.05	\$59.62	\$64.62				\$421.67	\$3,795.02
Fuel Oil														
Total, Galb.	1,500	1,000	1,000	750	375	100	50	50	100				547	4,925
Average, Galb/Day	48	36	36	25	12	3	2	2	3				19	19
Cost, Dollars	\$4,485.00	\$2,990.00	\$2,990.00	\$2,242.50	\$1,121.25	\$299.00	\$149.50	\$149.50	\$299.00				\$1,636.19	\$14,725.75
<u>City Island Heat Trace</u>														
Electric														
Total, kWh	397	350	351	325	314	181	176	160	160				268	2,414
Average, kWh/Day	13	13	11	11	10	6	6	5	5				9	9
Cost, Dollars	\$56.60	\$81.42	\$75.46	\$72.96	\$14.92	\$27.94	\$15.93	\$14.49	\$14.49				\$41.58	\$374.21
Expenditures YTD	\$45,169.68	\$39,476.82	\$35,394.22	\$27,025.89	\$27,151.58	\$20,682.44	\$22,626.13	\$16,705.53	\$16,145.79	\$0.00	\$0.00	\$0.00	\$20,864.84	\$250,378.08

Exhibit G

Hydro-Turbine Generator Performance 2011

Month	Kilowatt-hour (KWH)	Anticipated Savings *
January	71,232	\$6,409
February	89,183	\$8,025
March	70,728	\$6,364
April	28,412	\$2,557
May	0	\$0
June	0	\$0
July	55,943	\$5,034
August	1,001	\$90
September	0	\$0
October		
November		
December		
Average	35,167	\$3,164
Year to Date	316,499	\$28,479

* Anticipated savings calculated by multiplying the KWH by the average electrical rate of \$0.08998

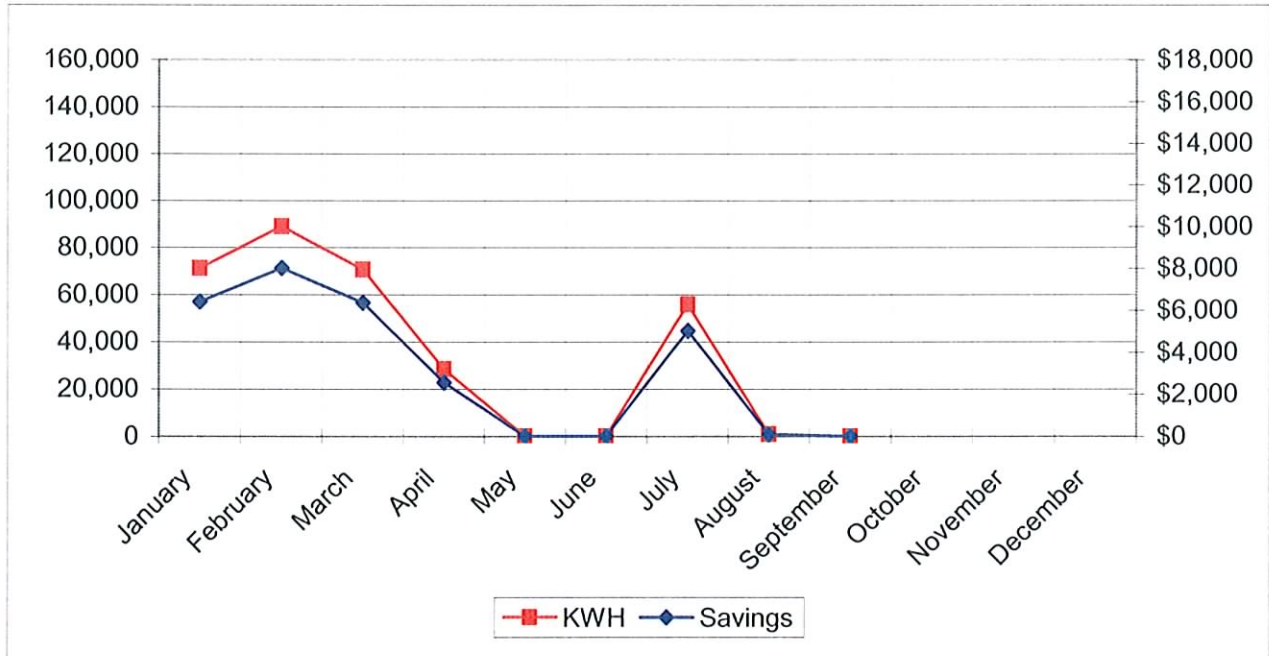


EXHIBIT H

Treatment Chemical Usage - 2011

Chemical	January	February	March	April	May	June	July	August	September	October	November	December	Average	Total
Chlorine														
Total, Lbs.	5,660	5,130	5,460	5,949	5,820	7,660	7,920	7,640	8,870	6,679			6,679	60,109
Average, Lbs./Day	183	183	176	198	188	255	255	246	296	220.1			220.1	
Dose, mg/l	2.6	2.6	2.7	2.8	2.6	3.4	3.4	3.2	4.2	3.1			3.1	
Cost, \$/Lbs.	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33	\$0.33			\$0.33	
Total Cost, Dollars	\$1,839.50	\$1,667.25	\$1,774.50	\$1,933.43	\$1,891.50	\$2,489.50	\$2,574.00	\$2,483.00	\$2,882.75	\$2,170.60			\$2,170.60	\$19,535.43
Alum														
Total 50 wt. % Al ₂ SO ₄ *14.3 H ₂ O	5,314	4,715	5,423	6,649	6,917	6,891	6,741	6,483	10,290	6,603			6,603	59,423
Avg Alum, Gals./Day	171	168	175	222	223	230	217	209	343	217.6			217.6	
Alum, mg/l	13.1	12.7	14.1	16.6	16.9	16.3	15.5	14.7	26.4	16.3			16.3	
Alum Cost, \$/Gal.	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64	\$0.64			\$0.64	
Alum Total Cost, Dollars	\$3,414.08	\$3,029.24	\$3,484.11	\$4,271.78	\$4,443.96	\$4,427.25	\$4,330.88	\$4,165.13	\$6,611.01	\$4,241.94			\$4,241.94	\$38,177.44
Lime														
Total Ca(OH) ₂ , Lbs.	10,230	9,077	10,440	12,800	13,316	13,266	12,977	12,480	19,808	12,710			12,710	114,394
Average Lime, Lbs./Day	330	324	337	427	430	442	419	403	660	419.0			419.0	
Lime Dose, mg/l	4.7	4.5	5.1	6.0	6.1	5.9	5.6	5.3	9.4	5.8			5.8	
Lime Cost, \$/Lbs.	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08	\$0.08			\$0.08	
Lime Total Cost, Dollars	\$849.09	\$753.39	\$866.52	\$1,062.40	\$1,105.23	\$1,101.08	\$1,077.09	\$1,035.84	\$1,644.06	\$1,054.97			\$1,054.97	\$9,494.70
Soda Ash														
Total Na ₂ CO ₃ , Lbs.	15,590	16,000	17,700	14,480	15,900	16,200	6,300	15,300	15,600	14,776			14,776	132,980
Avg Soda Ash, Lbs./Day	500	571	571	483	513	540	203	494	520	488.3			488.3	
Soda Ash Dose, mg/l	7.1	8.0	8.6	6.7	7.2	7.1	2.7	6.5	7.4	6.8			6.8	
Soda Ash Cost, \$/Lbs.	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23			\$0.23	
Soda Ash Total Cost, Dollars	\$3,548.73	\$3,663.20	\$4,052.42	\$3,315.20	\$3,640.31	\$3,708.99	\$1,442.39	\$3,502.94	\$3,571.62	\$3,382.86			\$3,382.86	\$30,445.77
Fluoride														
Total 59.8 wt. % Na ₂ SIF ₆ Lbs	2,665	2,475	2,505	2,430	2,460	2,910	2,450	2,755	2,552	2,578			2,578	23,202
Average, Fluoride Lbs./Day	86	88	81	81	79	97	79	89	85	85.1			85.1	
Fluoride (F-) Dose, mg/l	0.7	0.7	0.7	0.7	0.7	0.8	0.6	0.7	0.7	0.7			0.7	
Fluoride Cost, \$/Lbs.	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44			\$0.44	
Fluoride Total Cost, Dollars	\$1,177.56	\$1,093.61	\$1,106.87	\$1,073.73	\$1,086.98	\$1,285.82	\$1,082.56	\$1,217.33	\$1,127.63	\$1,139.12			\$1,139.12	\$10,252.09
Sodium Hydroxide														
Total 50 wt. % NaOH Gals	593	493	653	772	755	931	1,707	1,578	1,698	1,020			1,020	9,180
Avg NaOH, Gals./Day	19	18	21	26	24	31	55	51	57	33.5			33.5	
NaOH, mg/l	1.7	1.6	2.0	2.3	2.2	2.6	4.7	4.3	5.2	2.9			2.9	
NaOH 50 wt. % Cost, \$/Gal.	\$2.66	\$2.66	\$2.66	\$2.66	\$2.66	\$2.66	\$2.66	\$2.66	\$2.66	\$2.66			\$2.66	
NaOH Total Cost, Dollars	\$1,578.51	\$1,312.32	\$1,738.22	\$2,054.99	\$2,009.74	\$2,478.23	\$4,543.87	\$4,200.49	\$4,519.92	\$2,715.14			\$2,715.14	\$24,436.29
Zinc Orthophosphate														
Total Zn ₃ (PO ₄) ₂ , Lbs.	7,263	6,891	7,209	7,490	8,099	8,083	8,229	7,979	7,099	7,616			7,616	68,542
Avg Zn ₃ (PO ₄) ₂ , Lbs./Day	238	246	236	250	261	269	265	257	237	251.0			251.0	
Zn ₃ (PO ₄) ₂ Dose, mg/l	3.4	3.4	3.5	3.5	3.7	3.6	3.4	3.4	3.4	3.5			3.5	
Zn ₃ (PO ₄) ₂ Cost, \$/Lbs.	\$0.47	\$0.47	\$0.47	\$0.47	\$0.47	\$0.47	\$0.47	\$0.47	\$0.47	\$0.47			\$0.47	
Zn ₃ (PO ₄) ₂ Total Cost, Dollars	\$3,460.61	\$3,238.77	\$3,435.23	\$3,520.30	\$3,806.53	\$3,799.01	\$3,867.63	\$3,750.13	\$3,336.53	\$3,579.42			\$3,579.42	\$32,214.74
Potassium Permanganate														
Total KMnO ₄ , Lbs.	0	0	0	0	0	0	0	0	0	0			0	0
Avg KMnO ₄ , Lbs./Day	0	0	0	0	0	0	0	0	0	0			0	
KMnO ₄ Dose, mg/l	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
KMnO ₄ Cost, \$/Lbs.	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10	\$2.10			\$2.10	
KMnO ₄ Total Cost, Dollars	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00			\$0.00	\$0.00
Expenditures YTD														
	\$15,868.08	\$14,757.78	\$16,457.86	\$17,231.81	\$17,984.24	\$19,289.89	\$18,918.43	\$20,354.85	\$23,693.52	\$0.00	\$0.00	\$0.00	\$18,284.05	\$164,556.46
Average Flow Withdrawn (MGD)	8.44	8.56	7.97	8.59	8.50	9.06	9.92	9.14	8.38	7.65			7.65	

EXHIBIT J

Metering Activities 2011

Activity	January	February	March	April	May	June	July	August	September	October	November	December	Annual Total	Average
Ready-to-serve accounts	20924	20928	20928	20939	29928	20922	20919	20918	20910				197316	21924.0
Water usage accounts	20715	20715	20714	20735	20714	20712	20710	20706	20704				186425	20713.9
Non-compliant meters	445	443	442	478	440	437	435	430	428				3978	442.0
Meter readings - attempted	24256	24289	24399	24611	24710	24789	24800	24825	24865				221544	24616.0
Meter readings - obtained	21117	21150	21160	21251	21318	21397	21431	21456	21496				191776	21308.4
Meters - missing	4	1	9	8	9	10	11	15	8				75	8.3
Leaking meters - replaced	10	11	8	9	2	11	4	10	2				67	7.4
Non-registering meters - replaced	9	3	7	15	14	12	4	10	15				89	9.9
Remote meters - repaired	68	44	47	73	140	241	169	221	289				1592	143.6
Calibrated meters	0	0	0	0	0	3	2	0	0				5	0.6
New service meters- installs	0	0	0	1	0	0	0	0	1				2	0.2

EXHIBIT K

Miscellaneous Water Usage (gals) 2011

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total	Average
Main Leaks	265,491	0	0	11,750,508	0	0	0	202,586	455,777				12,674,362	1,408,262
Service Leaks	1,812,384	264,600	310,032	88,704	399,168	88,704	793,800	1,360,800	2,608,200				7,726,392	858,488
Fires	9,895	4,650	5,609	3,250	3,600	2,657	7,500	11,500	235,000				283,661	31,518
Street Sweepers	4,240	7,180	12,580	10,260	13,580	10,960	9,660	16,240	5,760				90,460	10,051
AWTF unmetered	0	2,700	3,200	0	6,300	5,800	4,000	10,240	3,000				35,240	3,916
Special Events	0	0	0	0	8,000	0	5,000	0	9,000				22,000	2,444
Lab and Instr. taps	557,256	475,951	581,866	468,808	536,922	533,738	565,041	596,924					4,316,506	539,563
High Resrv Leakage	527,497	548,104	530,008	613,980	488,869	597,718	304,033	433,489					4,043,698	505,462
Bulk Water	12,080	20,869	67,268	253,200	949,811	2,445,101	625,253	390,800	618,900				5,383,282	598,142
Flushing	0	0	0	0	7,207,870	0	0	0	0				7,207,870	800,874
Flow Tests	0	1,500	1,000	500	1,000	500	2,500	1,500	3,000				11,500	1,278
Vacancies/service leaks	0	2,571,480	2,268,000	4,412,520	907,200	1,360,800	907,200	10,600	1,160,000				13,597,800	1,510,867
Hydrant connections	0	2,000	0	0	19,000	5,000	1,000	1,000	6,000				34,000	3,778
Total	3,188,843	3,899,034	3,779,563	17,601,730	10,541,320	5,050,978	3,224,987	3,035,679	5,104,637	0	0	0	55,426,771	482,665

EXHIBIT L

Revenue Report For The Year Ending December 31, 2011

<u>Account Description</u>	<u>Adjusted Budget</u>	<u>September Revenue</u>	<u>Year to Date Revenue</u>	<u>Budget Balance</u>
Interest - Savings Account	\$0.00	\$76.59	\$833.20	-\$833.20
Interest - Other	\$0.00	\$0.01	\$0.11	-\$0.11
Total Interest Income	\$0.00	\$76.60	\$833.31	-\$833.31
Metered/Unmetered Water Sales	\$0.00	\$8,366.25	\$61,094.94	-\$61,094.94
Ready to Serve	\$0.00	\$1,648.47	\$11,984.82	-\$11,984.82
Metered Water Sales	\$0.00	\$1,020,191.51	\$7,472,079.43	-\$7,472,079.43
Mtrd Wat Ready to Serve	\$0.00	\$362,164.33	\$3,204,164.02	-\$3,204,164.02
Meter Sales Revenue	\$0.00	\$0.00	\$14.00	-\$14.00
Sale of Water Parts	\$0.00	\$0.00	\$14.00	-\$14.00
Water Conservation Device Sales	\$0.00	\$0.00	\$0.00	\$0.00
Fire Line Charges	\$0.00	\$479.68	\$282,467.13	-\$282,467.13
Other Hbg. Water Operational Revenue	\$0.00	\$6,421.52	\$68,429.68	-\$68,429.68
Water Tapping Fees	\$0.00	\$750.00	\$4,350.00	-\$4,350.00
Water Service Initiation Fee	\$0.00	\$50.00	\$250.00	-\$250.00
Water Restoration	\$0.00	\$6,298.35	\$66,925.34	-\$66,925.34
Water Termination Fee	\$0.00	\$0.00	\$100.00	-\$100.00
Harrisburg Water Liens-Principal Revenue	\$0.00	\$4,000.16	\$40,996.54	-\$40,996.54
Hbg. Water Liens-Interest Revenue	\$0.00	\$1,067.85	\$7,268.92	-\$7,268.92
Total Hbg. Water Utility Fund	\$0.00	\$1,411,438.12	\$11,220,138.82	-\$11,220,138.82
Metered/Unmetered Susq. Water Sales	\$0.00	\$117,739.39	\$1,037,069.05	-\$1,037,069.05
Susquehanna Ready to Serve	\$0.00	\$33,725.44	\$359,293.22	-\$359,293.22
Total Susquehanna Water Revenue	\$0.00	\$151,464.83	\$1,396,362.27	-\$1,396,362.27
Reimbursement for Loss	\$0.00	\$0.00	\$16,843.50	-\$16,843.50
Refund of Expenditures	\$0.00	\$0.00	\$400.00	-\$400.00
Total Miscellaneous	\$0.00	\$0.00	\$17,243.50	-\$17,243.50
Total THA Water Utility Fund	\$0.00	\$1,562,979.55	\$12,634,577.90	-\$12,634,577.90

EXHIBIT M

Expenditure Report For The Year Ending December 31, 2011

Account Description	Adjusted Budget	September Expenditure	September Encumbrance	Year to Date Expenditure	Budget Balance
Administration Division					
Salaries & Wages	\$287,600.00	\$27,111.33	\$0.00	\$177,146.71	\$110,453.29
Fringe Benefits	\$154,789.00	\$20,265.51	\$805.91	\$72,654.22	\$81,328.87
Communications	\$25,000.00	\$111.34	\$0.00	\$21,205.10	\$3,794.90
Professional Fees	\$52,500.00	\$1,500.00	\$3,200.00	\$11,750.00	\$37,550.00
Insurance	\$118,072.00	\$1,486.09	\$0.00	\$79,211.21	\$38,860.79
Maintenance & Repairs	\$62,530.00	\$184.14	\$628.46	\$32,640.04	\$29,261.50
Contracted Services	\$319,584.92	\$26,309.27	\$2,509.98	\$365,378.94	\$51,696.00
Supplies & Expenses	\$81,900.08	\$3,841.40	\$10,394.58	\$34,025.45	\$37,480.05
Payments Other Transfers - THA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Capital Outlay	\$72,533.00	\$909.58	\$0.00	\$68,869.28	\$3,663.72
Total Administration Division	\$1,174,509.00	\$81,718.66	\$17,538.93	\$762,880.95	\$394,089.12
Distribution/Metering Division					
Salaries & Wages	\$551,380.00	\$63,508.51	\$0.00	\$427,723.81	\$123,656.19
Fringe Benefits	\$209,519.00	\$10,380.63	\$0.00	\$112,956.76	\$96,562.24
Communications	\$2,550.00	\$0.00	\$0.00	\$292.70	\$2,257.30
Rentals	\$2,700.00	\$0.00	\$0.00	\$0.00	\$2,700.00
Maintenance & Repairs	\$17,000.00	\$671.44	\$5,504.47	\$3,355.33	\$8,140.00
Contracted Services	\$746,802.00	\$60,000.00	\$0.00	\$619,909.90	\$126,892.10
Supplies & Expenses	\$186,950.00	\$11,265.36	\$75,820.21	\$71,324.24	\$39,805.55
Equipment - Lease/Purchase	\$30,749.00	\$0.00	\$0.00	\$23,061.96	\$7,687.04
Capital Outlay	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total Distribution/Metering Division	\$1,747,650.00	\$145,825.94	\$81,324.68	\$1,258,624.90	\$407,700.42
Operations:					
Salaries & Wages	\$917,517.00	\$103,089.06	\$0.00	\$645,271.31	\$272,245.69
Fringe Benefits	\$279,649.00	\$15,274.09	\$0.00	\$155,002.51	\$124,646.49
Communications	\$1,725.00	\$116.49	\$0.00	\$425.68	\$1,299.32
Professional Fees	\$4,000.00	\$1,457.50	\$0.00	\$1,457.50	\$2,542.50
Utilities & Service	\$672,000.00	\$93,483.94	\$13,435.95	\$475,531.80	\$183,032.25
Rentals	\$350.00	\$41.94	\$0.00	\$312.64	\$37.36
Maintenance & Repairs	\$51,350.00	\$4,149.41	\$6,752.12	\$39,647.04	\$4,950.84
Contracted Services	\$367,131.00	\$2,000.00	\$0.00	\$305,035.08	\$62,095.92
Supplies & Expenses	\$306,850.00	\$31,120.82	\$117,767.13	\$174,356.34	\$14,726.53
Capital Outlay	\$51,842.00	\$0.00	\$0.00	\$38,881.68	\$12,960.32
Equipment - Lease/Purchase	\$20,000.00	\$0.00	\$0.00	\$0.00	\$20,000.00
Total Operations/Maintenance Division	\$2,672,414.00	\$250,733.25	\$137,955.20	\$1,835,921.58	\$698,537.22
Total Expenditure	\$5,594,573.00	\$478,277.85	\$236,818.81	\$3,857,427.43	\$1,500,326.76