

**2014 WATER QUALITY MONITORING
PROMPTON RESERVOIR
PROMPTON, PENNSYLVANIA**



**U.S. Army Corps of Engineers
Philadelphia District
Environmental Resources Branch**

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**2014 Water Quality Monitoring
Prompton Reservoir
Prompton, Pennsylvania**

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1.0 INTRODUCTION

1.1 PURPOSE OF THE MONITORING PROGRAM

The U.S. Army Corps of Engineers (USACE) manages Prompton Reservoir located in northeastern Pennsylvania within the Delaware River Basin. Prompton Reservoir provides flood control to downstream communities on the Lackawaxen River. Additionally, the reservoir provides important habitat for fish, waterfowl, and other wildlife, and recreational opportunities through fishing and boating. Because of the broad range of uses and demands that Prompton Reservoir serves, the USACE monitors water quality to compare with state water quality standards and to diagnose other problems that commonly effect reservoir health such as nutrient enrichment and toxic loadings. This report summarizes the results of monthly water quality monitoring at Prompton Reservoir for May to September 2014.

1.2 DESCRIPTION OF PROMPTON RESERVOIR

Prompton Reservoir was designed to provide flood control to downstream communities along the Lackawaxen River. A second authorized project purpose is recreation. The reservoir is located about 3 miles northwest of Honesdale, Pennsylvania, and dams a drainage area of 59.7 square miles. The primary surface water input to Prompton Reservoir originates from the West Branch of the Lackawaxen River. The reservoir is approximately 3 miles long and is about 30 feet deep at the face of the dam near the township of Prompton, Pennsylvania.

1.3 ELEMENTS OF THE STUDY

The USACE, Philadelphia District, has been monitoring water quality of Prompton Reservoir since 1975. Over this time, the yearly monitoring designs have evolved to address new concerns such as health of public drinking water and contamination of sediments. The 2014 monitoring program follows that in most recent years and includes the following major elements:

- Monthly water quality monitoring of reservoir and tributaries - to evaluate compliance with Pennsylvania state water quality standards and potential public health concerns; and
- Monthly profile samples for temperature, dissolved oxygen, chlorophyll, pH, turbidity, and conductivity at all stations in the reservoir and watershed.

2.0 METHODS

2.1 PHYSICAL STRATIFICATION MONITORING

Physical stratification monitoring of the water column at Prompton Reservoir was conducted five times between 21 May and 10 September 2014 (Table 2-1). Physical stratification parameters included temperature, dissolved oxygen (DO), pH, turbidity, and conductivity. Monitoring was conducted at four fixed stations located throughout the Prompton Reservoir watershed (Fig. 2-1). Surface water quality was monitored upstream of the lake at station PR-1S and downstream of the dam at station PR-4S (Fig. 2-1). Stations within the reservoir, PR-2 and PR-3, were monitored at 5-foot intervals from the surface to the bottom. All water quality parameters were measured with a calibrated YSI 6600 V2-4 water quality meter.

The results of stratification monitoring were compared to water quality standards authorized by the Pennsylvania Department of Environmental Protection (PADEP: Chapter 93 Water Quality Standards, 2000), where applicable. The water quality standard for DO is a minimum concentration of 5 mg/L and that for pH is an acceptable range from 6 to 9. All of the water quality data collected during physical stratification monitoring is summarized in Appendix A.

2.2 WATER COLUMN CHEMISTRY MONITORING

Water column chemistry monitoring of the water column at Prompton Reservoir was conducted five times between 21 May and 10 September 2014 (Table 2-1). Water samples were collected at four fixed stations within the reservoir watershed (Fig. 2-1). Surface water samples were collected at stations upstream (PR-1S) and downstream (PR-4S) of the reservoir. Surface, middle, and bottom water samples were collected at main reservoir body stations (PR-2 and PR-3). Surface water samples were collected by opening the sample containers approximately 1 foot below the water's surface. Middle and bottom water samples were collected with a Van Dorn design horizontal water sampler.

Water samples from all depths were analyzed for ammonia (NH₃), nitrite (NO₂), nitrate (NO₃), total kjeldahl nitrogen (TKN), soluble phosphorus (DP), total phosphorus (TP), ortho-phosphate (PO₄), total dissolved solids (TDS), total suspended solids (TSS), biochemical oxygen demand (BOD), alkalinity (ALK) and total organic carbon (TOC). Table 2-2 summarizes the water quality parameters, laboratory methods and reporting detection limits, state water quality standards, and allowable maximum hold times for each during the 2014 monitoring period.

Table 2-1. Prompton Reservoir water quality monitoring schedule for 2014				
Date of Sample Collection	Physical Stratification Monitoring (All Stations)	Water Column Chemistry Monitoring (All Stations)	Trophic State Determination (PR-3)	Coliform Bacteria Monitoring (All Surface Stations)
21 May	X	X	X	X
18 June	X	X	X	X
23 July	X	X	X	X
12 August	X	X	X	X
10 September	X	X	X	X

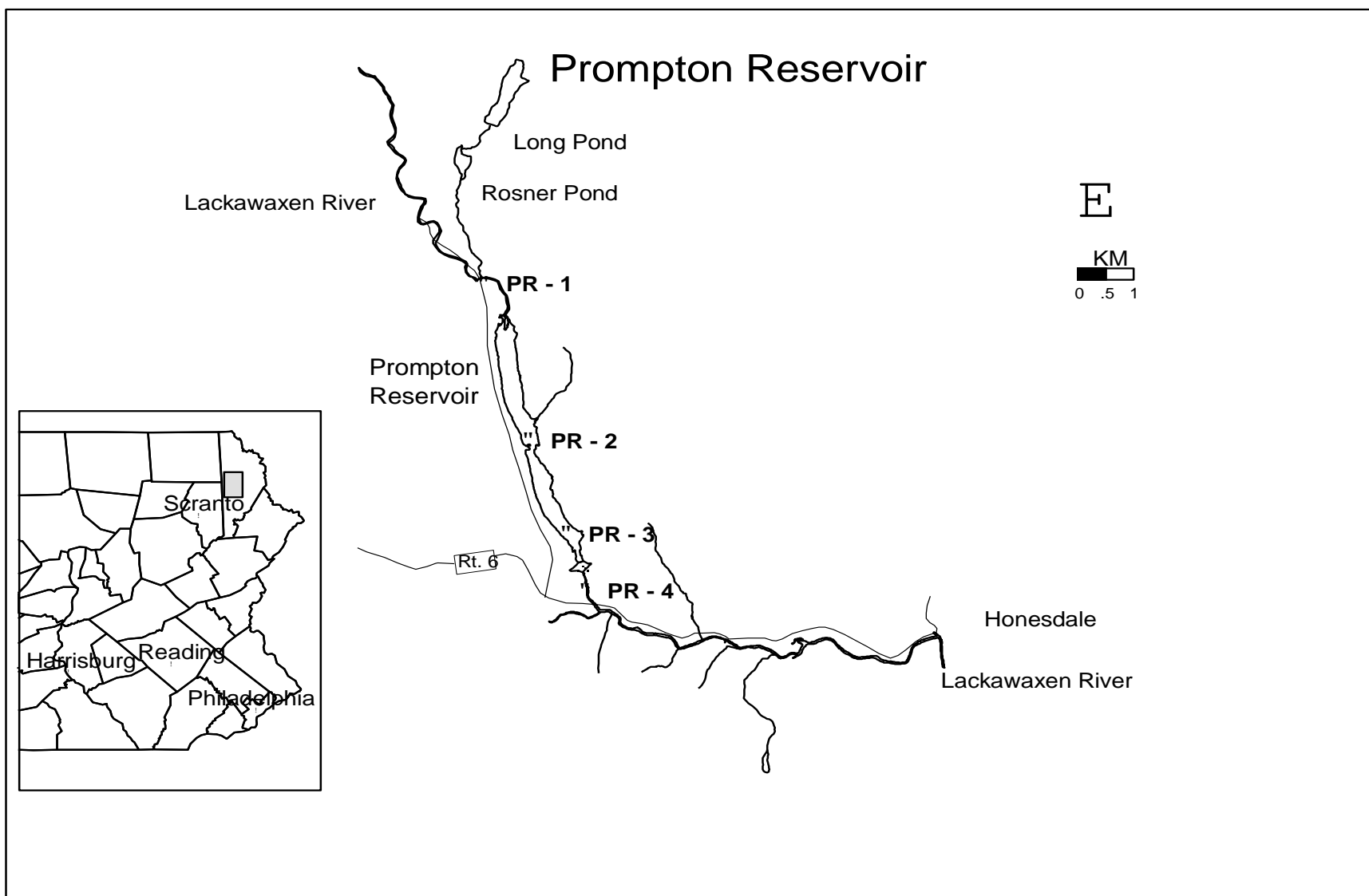


Figure 2-1. Location map for Prompton Reservoir and water quality monitoring stations in 2014.

Table 2-2. Water quality test methods, detection limits, state regulatory criteria, and sample holding times for water quality parameters monitored at Prompton Reservoir in 2014.

Parameter	(2) Method	Reporting Limit	PADEP Surface Water Quality Criteria	Allowable Hold Times (Days)
Total Alkalinity	SM-20 2320B	1.0 mg/L	Min. 20 mg/L CaCO ₃	14
Biochemical Oxygen Demand (BOD)	SM-20 5210B	2.0 mg/L	None	2
Total Phosphorus	SM-20 4500-PE	0.01 mg/L	None	28
Dissolved/Ortho- Phosphate	SM-20 4500-PE	0.01 mg/L	None	28
Soluble/Dissolved Phosphorus	SM-20 4500-PE	0.05 mg/L	None	28
(3) Total Organic Carbon (TOC)	SM-20 5310C	1.0 mg/L	None	14
(3) Total Inorganic Carbon (TIC)	SM-20 5310B	NA	None	NA
Total Carbon (TOC + TIC)	SM-20 5310B	NA	None	NA
(1) Chlorophyll a	YSI Probe	-----	None	
Total Kjeldahl Nitrogen	351.2 MCAWW	0.25 mg/L	None	28
Ammonia	D6919-03	0.05 mg/L	Temp. and pH dependent	28
Nitrate	MCAWW 353.2	0.05 mg/L	Maximum 10 mg/L (nitrate + nitrite)	28
Nitrite	MCAWW 353.2	0.05 mg/L		28
Total Dissolved Solids	SM-20 2540C	5 mg/L	Maximum 750 mg/L	7
Total Suspended Solids	SM-20 2540D	3.0 mg/L	None	7

(1) Chlorophyll a samples were recorded using a YSI 6600 with a chlorophyll sensor.

(2) Laboratory Methods Reference:

MCAWW- "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SM-20- "Standard Methods for the Examination of Water and Wastewater", 22nd Edition, 2012.

SW846- "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods", 3rd. Edition, November 1986 and updates.

NA- Total Inorganic Carbon and Total Carbon were not sampled in 2014

2.3 TROPHIC STATE DETERMINATION

The trophic state of Prompton Reservoir was determined by methods outlined by Carlson (1977). In general, this method calculates trophic state indices (TSIs) independently for measures of total phosphorus, chlorophyll *a*, and secchi disk depth. Surface water measures of total phosphorus and chlorophyll *a* from chemistry monitoring were used independently in the calculations of monthly TSIs (Table-2-1). Secchi disk depth was measured monthly at station PR-3 and used for the TSI calculation. Trophic state determinations were made using criteria defined by Carlson (1977) and EPA (1983) and calculated only for Station PR-3 within the reservoir.

2.4 RESERVOIR BACTERIA MONITORING

Monitoring for coliform bacteria contaminants was conducted at Prompton Reservoir five times between 21 May and 10 September 2014. Surface water samples were collected in the same manner as for chemical parameter samples, and analyzed for total coliform and fecal coliform contamination. Table 2-3 presents the test methods, detection limits, PADEP standards, and sample holding times for the bacteria parameters monitored at Prompton Reservoir in 2014. The bacteria analytical method was based on a membrane filtration technique. All of the samples were analyzed within their maximum allowable hold times.

Monthly coliform bacteria counts were compared to the PADEP single sample and swimming beach water quality standard for bacteria. The multiple beach sample standards is defined as a maximum geometric mean of 200 colonies/100-ml based on five samples collected on different days within a 30-day period. Application of this standard is not necessary at Prompton reservoir because swimming and other human/water contact recreation is prohibited in the reservoir. However, it is used in evaluating the bacteria results.

Table 2-3. Water quality test methods, detection limits, PADEP standards, and sample holding times for bacteria parameters monitored at Prompton Reservoir in 2014

Parameter	Total coliform/E-Coli	Fecal coliform
Test method	SM 9223B	SM9222D
Min. Detection limit	1 clns/100mls	2 clns/100-mls
PADEP standard	None	Geometric Mean < 200 clns/100-mls (application of this standard is conservative because swimming is not permitted in the reservoir)
Maximum allowable holding time	30 hours	30 hours
Achieved holding time	<30 hours	<30 hours

3.0 RESULTS AND DISCUSSION

3.1 STRATIFICATION MONITORING

The following sections summarize the results of water quality monitoring for physical and chemical parameters: temperature, dissolved oxygen (DO), and pH. For each parameter, seasonal and spatial patterns of surface water quality measured throughout the watershed, and seasonal and depth related patterns of the lake water column based on measures from the deepest portion of the reservoir (station PR-3) are described. The discussion on stratification is focused on station PR-3 as water quality problems related to depth are generally most severe in deeper water habitats, thus the evaluation will be a conservative one. All of the physical/chemical parameters were measured with a calibrated YSI 6600 V2-4 water quality monitoring probe and are presented in Appendix A.

3.1.1 Temperature

Temperature is the primary influencing factor on water density, affects the solubility of many chemicals compounds, and can therefore influence the effect of pollutants on aquatic life. Increased temperatures elevate the metabolic oxygen demand, in conjunction with reduced oxygen solubility, and can impact many species. Vertical stratification patterns naturally occurring in lakes affect the distribution of dissolved and suspended compounds.

Temperature of the tributary and downstream surface waters of Prompton Reservoir generally followed a similar pattern during 2014. Maximum temperatures were recorded during the July time period (Fig. 3-1). Upstream temperatures at station PR-1 were cooler than downstream release temperatures with an average temperature of 18.33 °C and range from 13.24 °C in May to 21.76 °C in July. Downstream temperatures at station PR-4 averaged 19.38 °C and ranged from 14.75 °C in May to 21.92 °C in July. The warmer downstream temperatures likely result from thermally warmed waters being released from the reservoir. The surface water temperature (0-5 feet) of the reservoir was generally greater than the upstream and downstream stations as a result of in-lake thermal warming. Temperatures for the sampling period at reservoir body station PR-3 near the outlet works of the dam averaged 21.98 °C and ranged from 27.63 °C in July to 14.54 °C in May.

Prompton Reservoir was stratified with respect to temperature in 2014 (Fig. 3-2). In June, stratification was observed with surface temperatures (23.49 °C) approximately 11.43 °C warmer than the lower water column (12.06 °C). The onset of de-stratification was evident in early September. August and September sampling showed a noticeable cooling of surface waters.

3-2

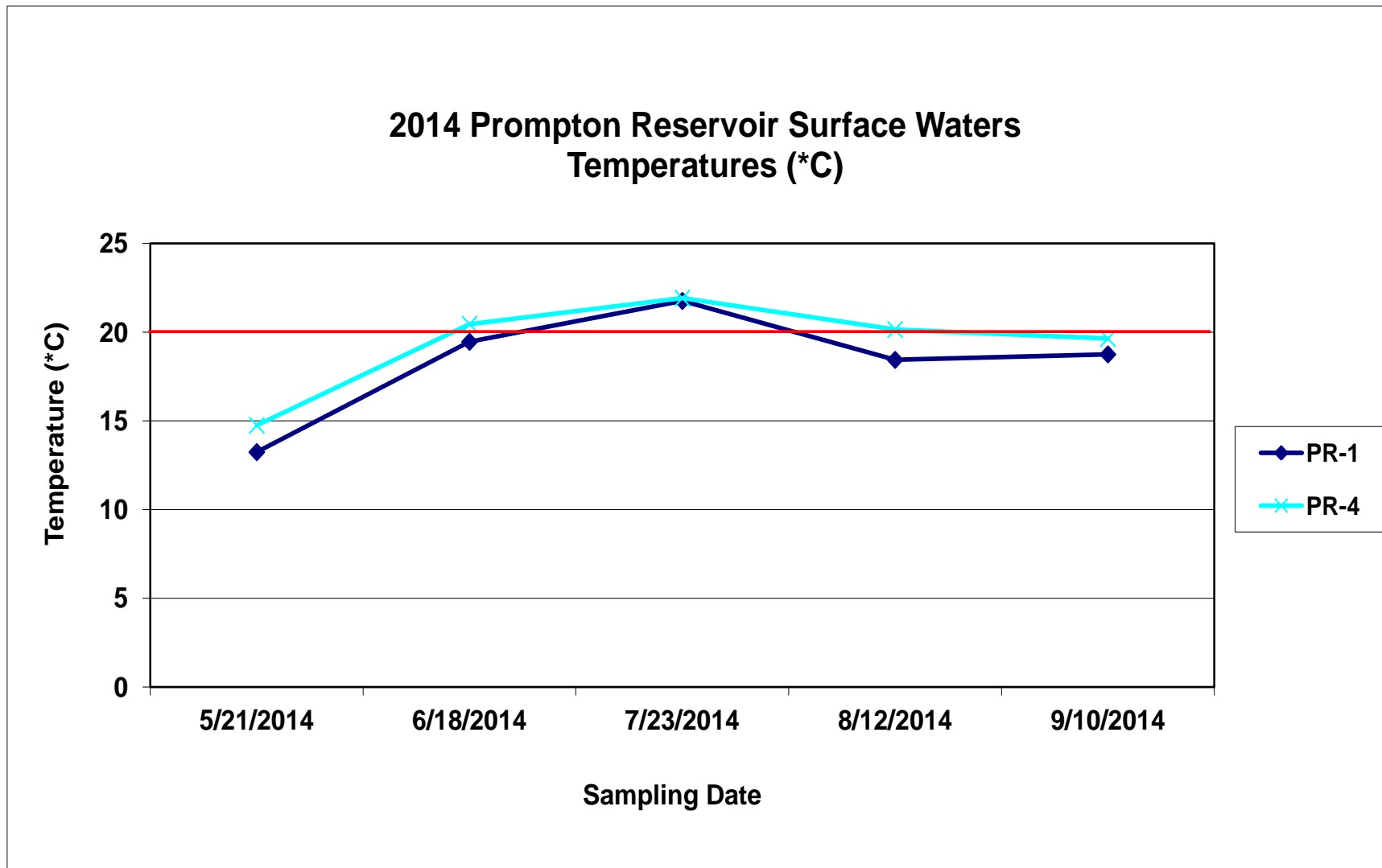


Figure 3-1. Temperature in surface waters of Prompton Reservoir during 2014. See Appendix A for a summary of plotted values.

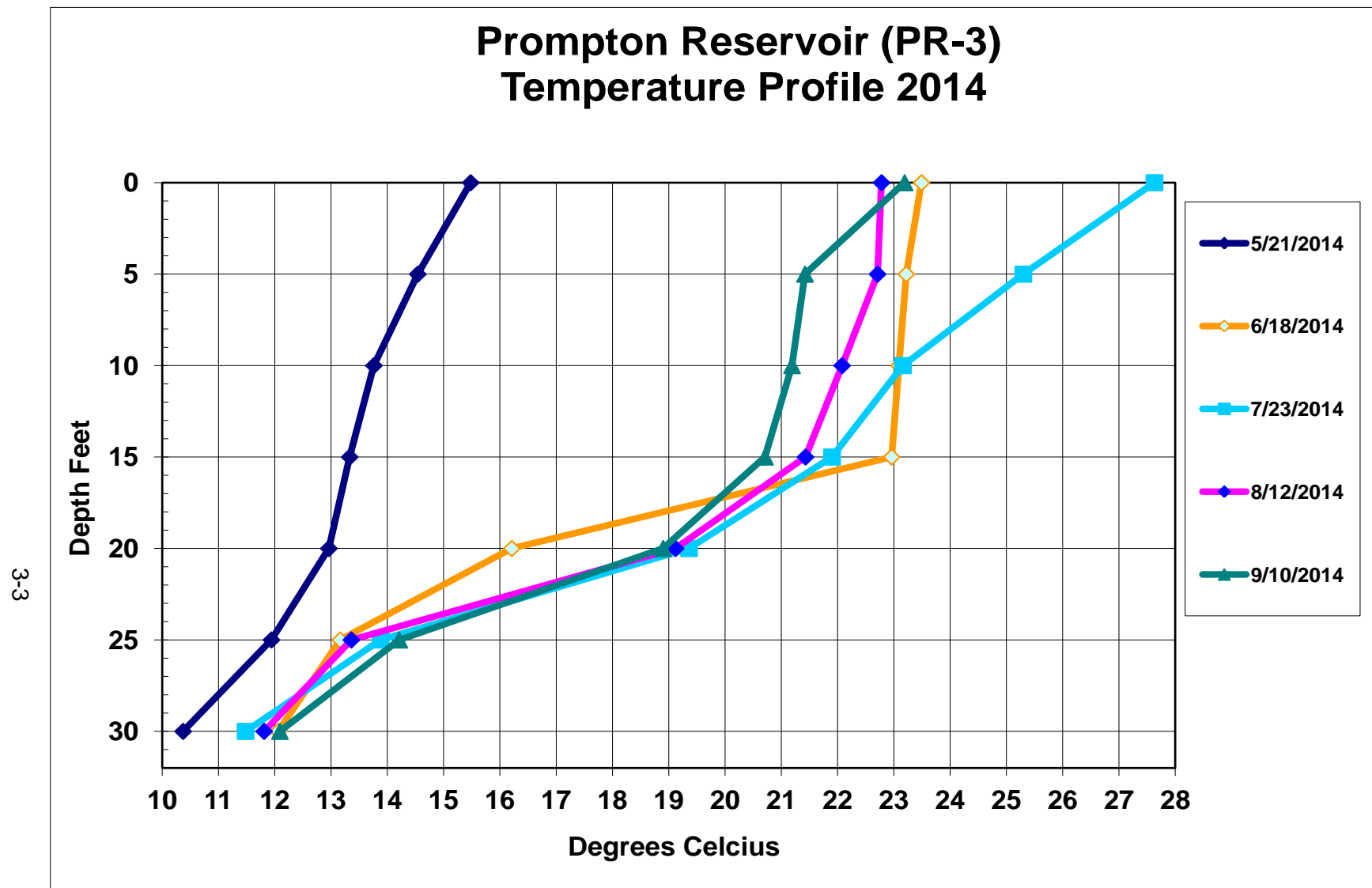


Figure 3-2. Temperature stratification of Prompton Reservoir during 2014 from water quality measured at station PR-3. See Appendix A for a summary of plotted values.

3.1.2 Dissolved Oxygen

Dissolved oxygen (DO) is the measure of the amount of DO in water. Typically, DO concentrations in surface waters are less than 10 mg/L. Dissolved Oxygen concentrations are subject to diurnal and seasonal fluctuations that can be influenced, in part, by temperature, river discharge, and photosynthetic activity. Dissolved Oxygen is essential to the respiratory metabolism of most aquatic organisms. It affects the availability and solubility of nutrients and subsequently the productivity of aquatic ecosystems. Low levels of oxygen can facilitate the release of nutrients from bottom sediments.

Dissolved oxygen (DO) in the inflow and outflow tributary surface waters of Prompton Reservoir generally followed a similar seasonal pattern throughout the 2014 sampling season (Fig. 3-3). Waters released from the reservoir and measured at station PR-4S had consistently lower dissolved oxygen levels than reservoir inflows at tributary station PR-1S. The greatest difference of DO readings was recorded on 23 July when inflow (PR-1S) DO was 8.9 mg/L and outflow (PR-4S) DO was 6.6 mg/L. Dissolved oxygen concentrations upstream (PR-1S) ranged from 10.1 mg/L in May to 8.5 mg/L in June with an average seasonal reading of 9.12 mg/L. Dissolved oxygen concentrations downstream (PR-4S) ranged from 6.6 mg/L in July to 9.6 mg/L in May with an average seasonal reading of 7.9 mg/L.

The stratification of Prompton Reservoir influenced the distribution of DO in the water column during 2014 (Fig. 3-4). In June, the influence of stratification was apparent, as DO concentrations decreased from 9.1 mg/L at the surface to 0.3 mg/L at the bottom. From June and continuing through September, the lower water column from approximately 10-15 feet to the bottom was severely depleted of oxygen with concentrations less than 5 mg/L. The release of waters downstream containing lower DO concentrations had some lowering effect on DO levels recorded at downstream station PR-1S. However, the re-aeration of the released waters through the dam conduit system elevated DO concentrations above state criteria.

DO concentrations in the water column of Prompton Reservoir were in compliance with PADEP water quality standards from May through September. The Pennsylvania water quality standard for DO is a minimum concentration of 5 mg/L in the epilimnion of stratified lakes. The epilimnion remained above this criteria throughout the sampling season at Prompton Reservoir. The health of aquatic ecosystems can be impaired by low DO concentrations in the water column. Hypoxia, or conditions of DO concentrations less than 2 mg/L, is generally accepted as the threshold at which the most severe effects on biota occur. In 2014, the lower water column of Prompton was affected by hypoxia. Hypoxic water was encountered in June through September and commonly occupied the lower half of the water column from 15 feet to the bottom. Hypoxia in the lower water column is a symptom of eutrophication. Nutrients in the water column feed explosive algal growth at the surface photic zone. Dead and decaying algae sink to lower levels of the water column and during the process of decay; oxygen is removed from the water.

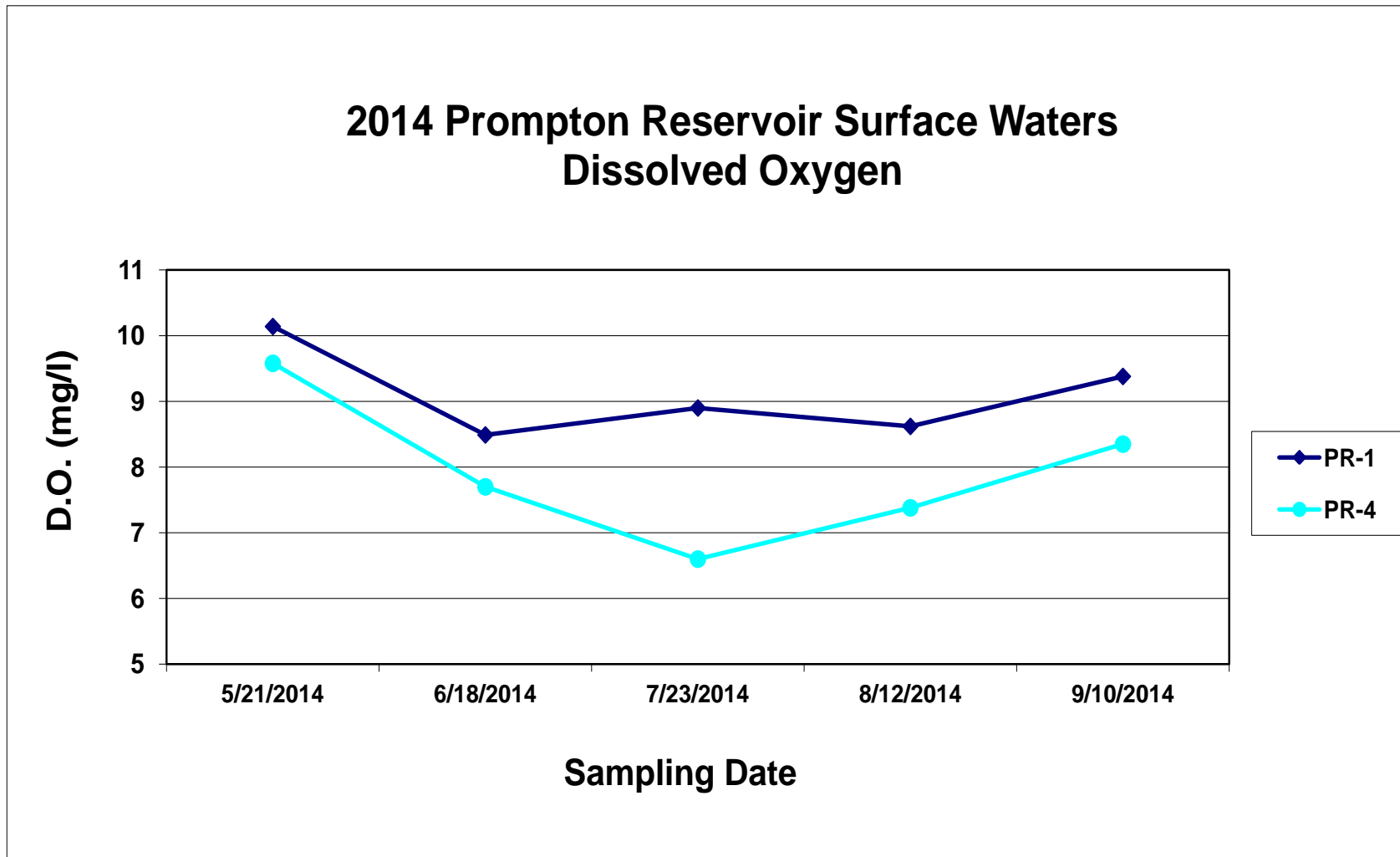


Figure 3-3. Dissolved oxygen in tributary surface waters of Prompton Reservoir during 2014. PADEP minimum DO standard is 5 mg/L. See Appendix A for a summary of plotted values.

3-6

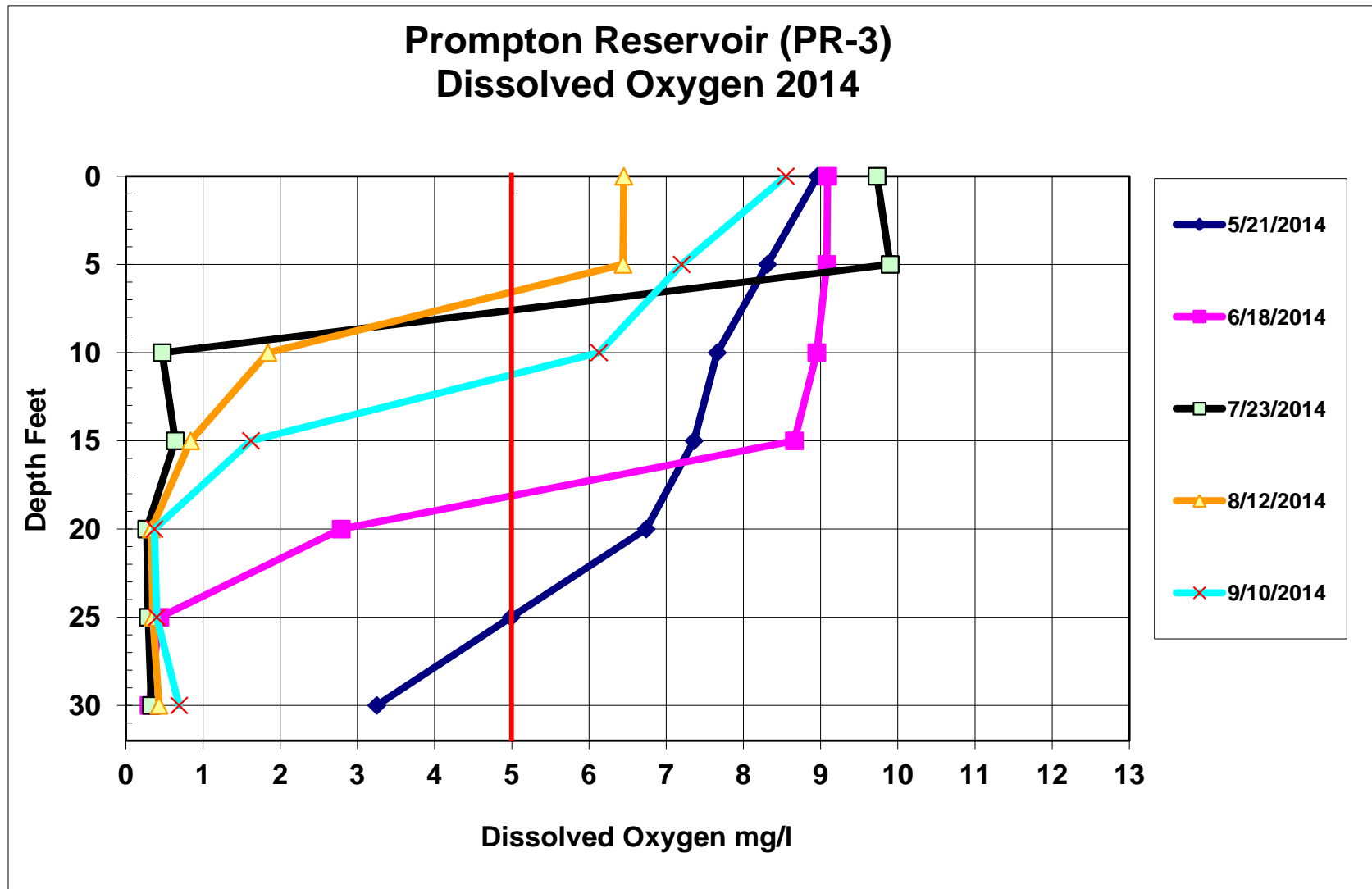


Figure 3-4. Dissolved oxygen stratification of Prompton Reservoir during 2014 from water quality measured at station PR-3. The PADEP minimum DO standard is 5 mg/L. See Appendix A for a summary of plotted value

3.1.3 pH

PH is the measure of the hydrogen –ion concentration in the water. A pH below 7 is considered acidic and a pH above 7 is basic. The pH scale is 0-14 with the lower numbers being more acidic and the higher numbers being more basic. High pH values tend to facilitate solubilization of ammonia, salts, and heavy metals. Low pH levels tend to increase carbonic acid and carbon dioxide concentrations. Lethal effects of pH on aquatic life typically occur below pH 4.5 and above pH 9.5.

Measures of pH in the surface water stations of Prompton Reservoir generally followed a similar seasonal pattern during 2014 (Fig. 3-5). At stations PR-1S and PR-4S, pH values ranged from 6.68 in May to 8.51 in September. The seasonal pH average for PR-1S and PR-4S were 7.58 and 7.25, respectively.

The water column of Prompton Reservoir maintained a relatively stable pH through most of the sampling season in 2014 with slightly higher surface water pH seen in July (Fig. 3-6). In general the development of stratification and increase in surface temperatures during this time period is reflected with an increase in pH at the surface while the lower water column remained relatively constant. This was seen especially during July when the upper water column ranged as high as 9.12 and the bottom waters had a reading of 6.87. The elevated pH in surface waters of the reservoir during summer periods is most likely due to algal blooms. As a function of increased productivity, algae remove CO₂ from the water column. Since dissolved CO₂ is slightly acidic, its reduction in the water column is manifested by an increase in pH.

The surface waters of the Prompton Reservoir lake stations were not in compliance with PADEP standards for pH during 2014. The water quality standard for pH is a range of acceptability from 6 to 9. Surface water readings in July exceeded the pH 9.0 criteria.

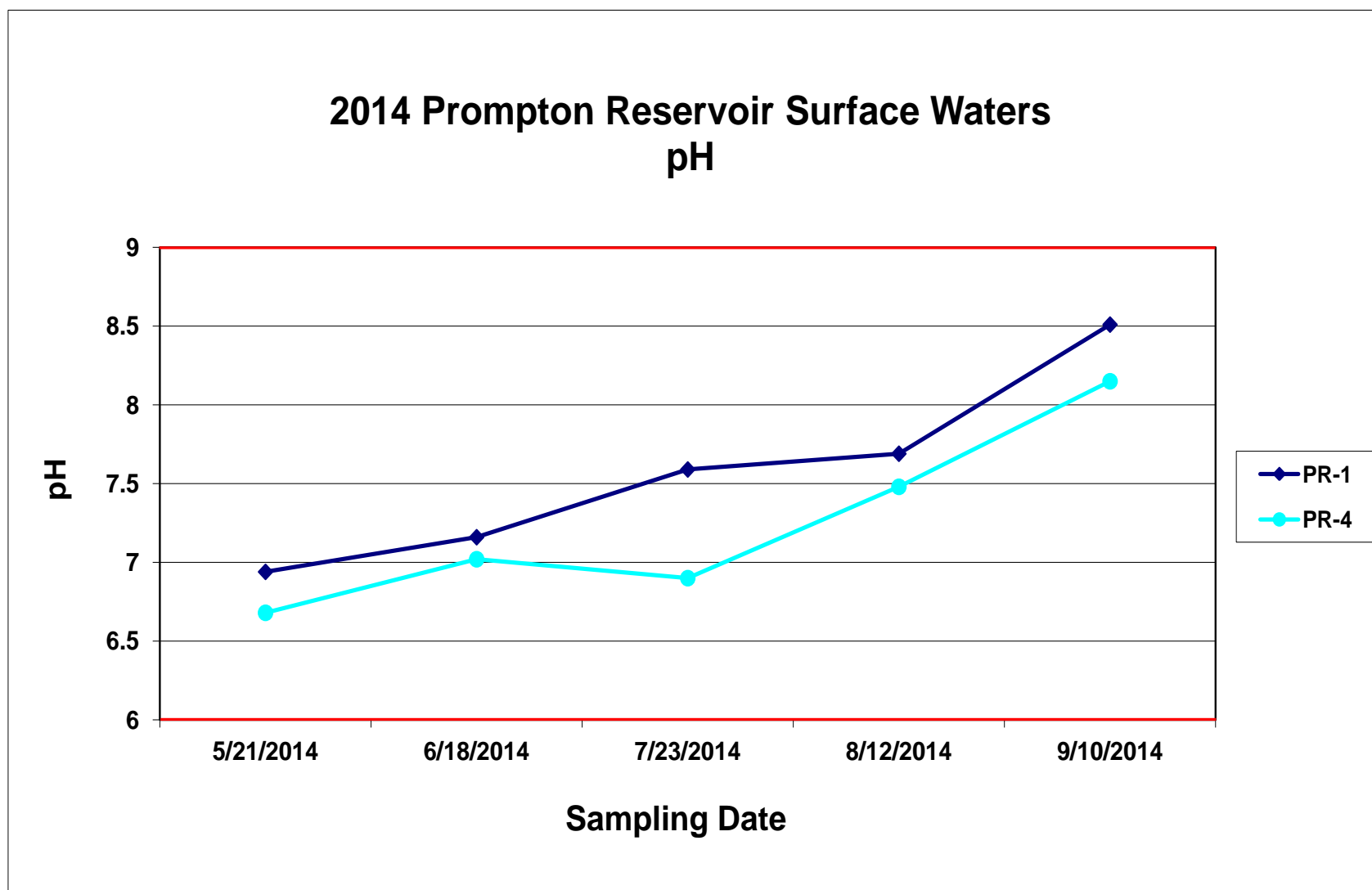


Figure 3-5. Measures of pH in tributary surface waters of Prompton Reservoir during 2014. PADEP minimum and maximum pH standards are 6 and 9, respectively. See Appendix A for a summary of plotted values.

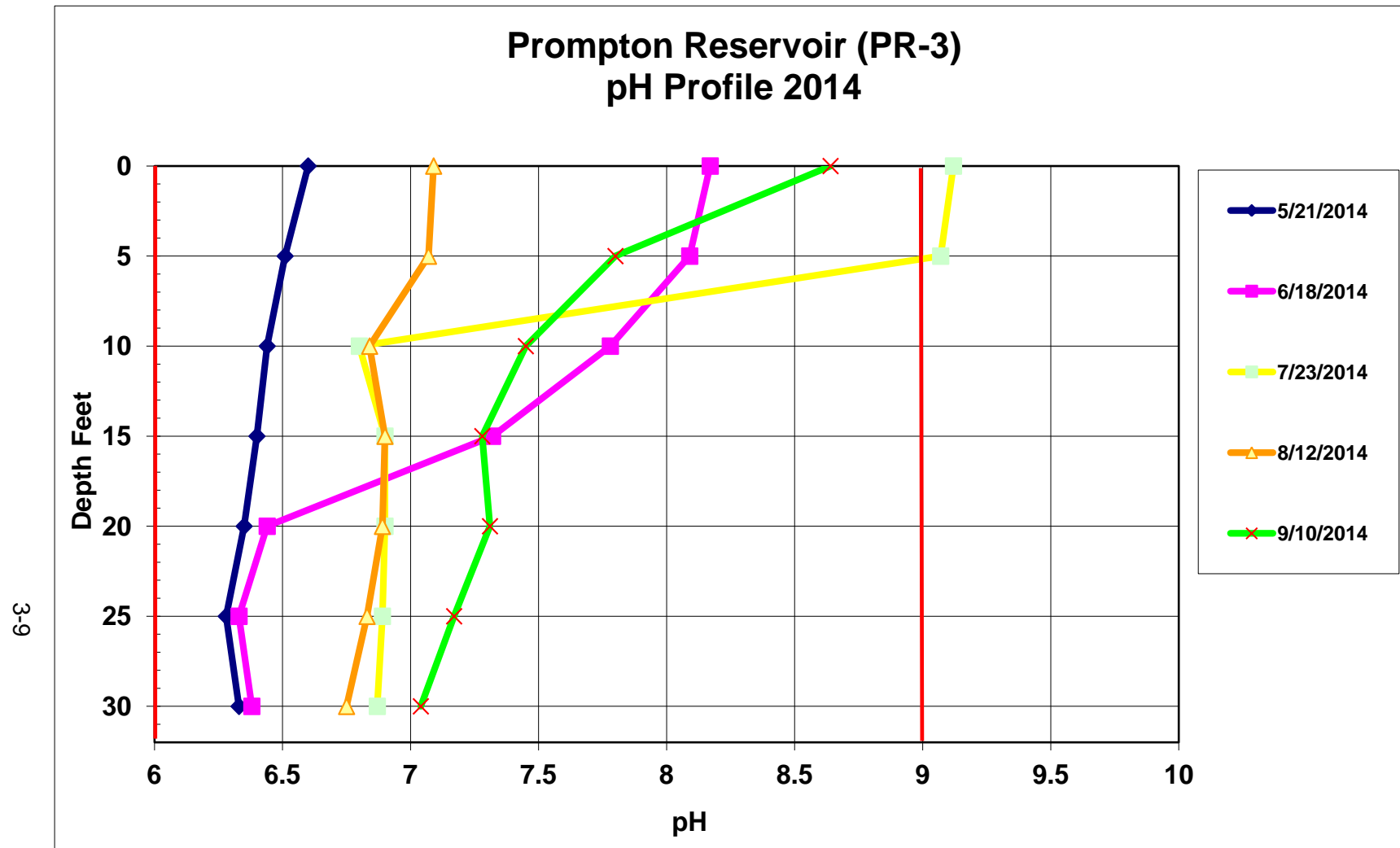


Figure 3-6. Stratification of pH at Prompton Reservoir during 2014, from water quality measured at station PR-3. PADEP minimum and maximum pH standards are 6 and 9, respectively. See Appendix A for a summary of plotted values.

3.2 WATER COLUMN CHEMISTRY MONITORING

The following sections describe temporal, spatial, and depth related patterns for water quality parameters measured at Prompton Reservoir during 2014 (Table 3-2).

3.2.1 Ammonia

Total Ammonia (NH₃) is a measure of the most reduced inorganic form of nitrogen in water and includes dissolved ammonia and the ammonium ion. Ammonia is a small component of the nitrogen cycle but as an essential plant nutrient, it contributes to the trophic status of a water body. Excess ammonia contributes to eutrophication of water bodies. This can result in excessive algal growths and impacts on recreation and drinking water supplies. In high concentrations, ammonia is toxic to aquatic life.

Ammonia in the water column of Prompton Reservoir was variable during 2014 (Table 3-2). Concentrations measured at many surface and middle water column stations were less than the reporting limit (0.05 mg/L). The highest concentration (4.52 mg/L) of ammonia was measured in September in the bottom waters of the deeper portion of the reservoir located at station PR-3B. Concentrations in the bottom waters at station PR-3B throughout the sampling season averaged 1.92 mg/L. Increased ammonia is characteristic of low dissolved oxygen environments in stratified lakes resulting from the decomposition of organic materials. Prompton Reservoir experienced these conditions from May through September of 2014 resulting in elevated levels of Ammonia in the deeper areas of the reservoir. In 2014, Prompton Reservoir was in compliance with the PADEP water quality standard for ammonia, which is dependent on temperature and pH (Table 3-1).

Table 3-1. PADEP ammonia nitrogen criteria (Pennsylvania Code, Title 25, Chapter 93, 2002). Specific ammonia criteria dependent on temperature and pH (units in mg/L).					
PH	10 °C	15 °C	20 °C	25 °C	30 °C
6.50	25.5	17.4	12.0	8.4	5.9
6.75	23.6	16.0	11.1	7.7	5.5
7.00	20.6	14.0	9.7	6.8	4.8
7.25	16.7	11.4	7.8	5.5	3.9
7.50	12.4	8.5	5.9	4.1	2.9
7.75	8.5	5.8	4.0	2.8	2.0
8.00	5.5	5.8	4.0	2.8	2.0
8.25	3.4	2.3	1.6	1.2	0.9
8.50	2.0	1.4	1.0	0.7	0.6
8.75	1.2	0.9	0.6	0.5	0.4
9.00	0.8	0.5	0.4	0.3	0.3
9.25	0.36	0.24	0.17	0.12	0.08
9.50	0.20	0.13	0.10	0.07	0.05

Table 3-2. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2014

Station	Date	ALK mg/L	BOD5 mg/L	DISS-P mg/L	NH3 mg/L	NO2 mg/L	NO3 mg/L	PO4 mg/L	TDS mg/L	TKN mg/L	TOC mg/L	TP mg/L	TSS mg/L
PR-01S	05/21/2014	16	<2	<0.05	<0.05	<0.05	0.23	<0.01	36	<0.25	2.9	0.03	<3
	06/18/2014	20	<2	<0.05	<0.05	<0.05	0.34	<0.01	50	<0.25	2.6	0.02	<3
	07/23/2014	26	<2	<0.05	<0.05	<0.05	0.18	<0.01	50	0.36	2.5	0.01	<3
	08/12/2014	23	<2	<0.05	<0.05	<0.05	0.21	<0.01	52	<0.25	2.1	0.03	<3
	09/10/2014	25	<2	<0.05	<0.05	<0.05	0.08	<0.01	22	<0.25	1.5	<0.01	<3
	Mean	22	2	0.05	0.05	0.05	0.208	0.01	42	0.272	2.32	0.02	3
	Stdev	4.062	0	0	0	0	0.094	0	12.884	0.049	0.54	0.01	0
	Max	26	2	0.05	0.05	0.05	0.34	0.01	52	0.36	2.9	0.03	3
	Min	16	2	0.05	0.05	0.05	0.08	0.01	22	0.25	1.5	0.01	3
	No. of Dects	5	0	0	0	0	5	0	5	1	5	4	0
PR-02S	05/21/2014	13	<2	<0.05	<0.05	<0.05	0.08	0.04	21	<0.25	4.9	0.05	5
	06/18/2014	19	<2	<0.05	<0.05	<0.05	0.06	0.05	54	0.41	3.7	0.06	4
	07/23/2014	20	<2	<0.05	<0.05	<0.05	<0.05	<0.01	48	0.61	3.8	0.04	9
	08/12/2014	23	3	<0.05	<0.05	<0.05	<0.05	<0.01	51	0.64	3.2	0.04	7
	09/10/2014	24	4	<0.05	<0.05	<0.05	<0.05	<0.01	25	1.15	4.3	0.08	13
	Mean	19.8	2.6	0.05	0.05	0.05	0.058	0.024	39.8	0.612	3.98	0.054	7.6
	Stdev	4.324	0.894	0	0	0	0.013	0.019	15.547	0.34	0.646	0.017	3.578
	Max	24	4	0.05	0.05	0.05	0.08	0.05	54	1.15	4.9	0.08	13
	Min	13	2	0.05	0.05	0.05	0.05	0.01	21	0.25	3.2	0.04	4
	No. of Dects	5	2	0	0	0	2	2	5	4	5	5	5

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2014

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PR-02M	05/21/2014	13	<2	<0.05	<0.05	<0.05	0.16	<0.01	23	0.43	4.3	0.03	<3
	06/18/2014	19	<2	<0.05	<0.05	<0.05	0.11	<0.01	46	0.39	4	0.01	4
	07/23/2014	24	<2	<0.05	0.07	<0.05	0.05	<0.01	46	0.56	3.1	0.05	4
	08/12/2014	23	3	<0.05	<0.05	<0.05	<0.05	<0.01	44	0.33	3	0.04	5
	09/10/2014	25	<2	<0.05	<0.05	<0.05	<0.05	<0.01	35	0.48	3.7	0.08	7
	Mean	20.8	2.2	0.05	0.054	0.05	0.084	0.01	38.8	0.438	3.62	0.042	4.6
	Stdev	4.919	0.447	0	0.009	0	0.05	0	9.935	0.088	0.563	0.026	1.517
	Max	25	3	0.05	0.07	0.05	0.16	0.01	46	0.56	4.3	0.08	7
	Min	13	2	0.05	0.05	0.05	0.05	0.01	23	0.33	3	0.01	3
	No. of Dects	5	1	0	1	0	3	0	5	5	5	5	4
PR-02B	05/21/2014	12	<2	<0.05	<0.05	<0.05	0.17	0.04	28	0.34	3.9	0.11	43
	06/18/2014	19	<2	<0.05	<0.05	<0.05	0.14	0.08	56	0.87	4.4	0.19	94
	07/23/2014	41	3	<0.05	0.86	<0.05	<0.05	<0.01	56	1.69	4.8	0.1	29
	08/12/2014	25	<2	<0.05	0.27	<0.05	<0.05	<0.01	63	0.44	2.9	<0.01	6
	09/10/2014	27	<2	<0.05	0.18	<0.05	<0.05	<0.01	33	0.6	3.5	<0.01	5
	Mean	24.8	2.2	0.05	0.282	0.05	0.092	0.03	47.2	0.788	3.9	0.084	35.4
	Stdev	10.78	0.447	0	0.336	0	0.058	0.031	15.611	0.543	0.745	0.076	36.473
	Max	41	3	0.05	0.86	0.05	0.17	0.08	63	1.69	4.8	0.19	94
	Min	12	2	0.05	0.05	0.05	0.05	0.01	28	0.34	2.9	0.01	5
	No. of Dects	5	1	0	3	0	2	2	5	5	5	3	5

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2014

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PR-03S	05/21/2014	13	<2	<0.05	<0.05	<0.05	0.09	<0.01	21	0.34	5	<0.01	<3
	06/18/2014	18	<2	<0.05	<0.05	<0.05	<0.05	<0.01	61	<0.25	3.4	<0.01	6
	07/23/2014	22	<2	<0.05	<0.05	<0.05	<0.05	<0.01	30	0.59	3.6	0.04	6
	08/12/2014	22	2	<0.05	<0.05	<0.05	<0.05	0.1	57	0.42	3.2	0.1	<3
	09/10/2014	26	3	<0.05	<0.05	<0.05	<0.05	<0.01	52	0.94	4	<0.01	9
	Mean	20.2	2.2	0.05	0.05	0.05	0.058	0.028	44.2	0.508	3.84	0.034	5.4
	Stdev	4.919	0.447	0	0	0	0.018	0.04	17.655	0.272	0.713	0.039	2.51
	Max	26	3	0.05	0.05	0.05	0.09	0.1	61	0.94	5	0.1	9
	Min	13	2	0.05	0.05	0.05	0.05	0.01	21	0.25	3.2	0.01	3
	No. of Dects	5	2	0	0	0	1	1	5	4	5	2	3
PR-03M	05/21/2014	12	<2	<0.05	<0.05	<0.05	0.14	0.01	32	0.35	4.9	0.05	<3
	06/18/2014	21	<2	<0.05	<0.05	<0.05	<0.05	0.02	37	<0.25	3.3	0.02	5
	07/23/2014	24	<2	<0.05	0.07	<0.05	0.07	<0.01	42	0.45	3.1	0.03	<3
	08/12/2014	23	<2	<0.05	0.15	<0.05	<0.05	0.01	43	0.45	2.8	0.03	4
	09/10/2014	24	2	<0.05	<0.05	<0.05	<0.05	<0.01	44	0.76	3.7	0.04	7
	Mean	20.8	2	0.05	0.074	0.05	0.072	0.012	39.6	0.452	3.56	0.034	4.4
	Stdev	5.07	0	0	0.043	0	0.039	0.004	5.03	0.191	0.817	0.011	1.673
	Max	24	2	0.05	0.15	0.05	0.14	0.02	44	0.76	4.9	0.05	7
	Min	12	2	0.05	0.05	0.05	0.05	0.01	32	0.25	2.8	0.02	3
	No. of Dects	5	1	0	2	0	2	3	5	4	5	5	3

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2014

Station	Date	ALK	BOD5	DISS-P	NH3	NO2	NO3	PO4	TDS	TKN	TOC	TP	TSS
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PR-03B	05/21/2014	17	<2	<0.05	0.16	<0.05	0.12	<0.01	39	0.53	3.2	0.07	11
	06/18/2014	22	<2	<0.05	0.23	<0.05	<0.05	0.1	26	0.28	3.3	0.1	7
	07/23/2014	64	5	0.13	2.11	<0.05	<0.05	0.18	89	3.07	9.4	0.23	11
	08/12/2014	56	14	0.29	2.58	<0.05	<0.05	0.34	97	2.8	9	0.39	12
	09/10/2014	85	13	0.64	4.52	<0.05	<0.05	0.71	143	5.05	13.6	0.76	14
	Mean	48.8	7.2	0.232	1.92	0.05	0.064	0.268	78.8	2.346	7.7	0.31	11
	Stdev	28.822	5.891	0.248	1.816	0	0.031	0.275	47.246	1.975	4.444	0.282	2.55
	Max	85	14	0.64	4.52	0.05	0.12	0.71	143	5.05	13.6	0.76	14
	Min	17	2	0.05	0.16	0.05	0.05	0.01	26	0.28	3.2	0.07	7
	No. of Dects	5	3	3	5	0	1	4	5	5	5	5	5
PR-04S	05/21/2014	12	<2	<0.05	<0.05	<0.05	0.12	0.07	29	0.43	4.5	0.07	<3
	06/18/2014	19	<2	<0.05	<0.05	<0.05	0.12	<0.01	30	0.42	3.9	0.06	21
	07/23/2014	24	<2	<0.05	0.07	<0.05	0.16	0.03	26	0.45	3.2	0.03	4
	08/12/2014	24	<2	<0.05	0.14	<0.05	0.16	0.02	49	<0.25	3	0.03	<3
	09/10/2014	26	<2	<0.05	0.06	<0.05	0.1	0.03	54	<0.25	3.4	0.04	<3
	Mean	21	2	0.05	0.074	0.05	0.132	0.032	37.6	0.36	3.6	0.046	6.8
	Stdev	5.657	0	0	0.038	0	0.027	0.023	12.896	0.101	0.604	0.018	7.95
	Max	26	2	0.05	0.14	0.05	0.16	0.07	54	0.45	4.5	0.07	21
	Min	12	2	0.05	0.05	0.05	0.1	0.01	26	0.25	3	0.03	3
	No. of Dects	5	0	0	3	0	5	4	5	3	5	5	2

< Laboratory analysis result was less than the method or reporting limits.

3.2.2 Nitrite and Nitrate

Nitrite (NO_2) is a measure of a form of nitrogen that occurs as an intermediate in the nitrogen cycle. It is unstable and can rapidly be oxidized to nitrate or reduced to nitrogen gas. Nitrite is a source of nutrients for plants and can be toxic to aquatic life in relatively low concentrations. In 2014, nitrite concentrations in the waters of Prompton Reservoir measured at all stations and depths were less than the reporting limit of 0.05 mg/L (Table 3-2).

Nitrate (NO_3) is the measure of the most oxidized and stable form of nitrogen. It is the principal form of combined nitrogen in natural waters. Nitrate is the primary form of nitrogen used by plants as a nutrient to stimulate plant growth. In 2014, nitrate concentrations in the waters of Prompton Reservoir measured at all stations and depths were often less than the reporting limit of 0.05 mg/L (Table 3-2). The maximum nitrate measure of 0.34 mg/L was collected at station PR-1S in June. This upstream tributary station also maintained the highest seasonal average concentration of 0.21 mg/L.

Prompton Reservoir was in compliance with the PADEP water quality standard for nitrite and nitrate during 2014. The standard is a summed concentration of nitrite and nitrate of less than 10 mg/L. Throughout the monitoring period, a maximum summed concentration for all stations and depths of 0.39 mg/L was measured at the upstream tributary surface water station PR-1S on 18 June.

3.2.3 Total Kjeldahl Nitrogen

Total kjeldahl nitrogen (TKN) is a measure of organic nitrogen that includes ammonia. Organic nitrogen is not immediately available for biological activity and is therefore not available for plant growth until decomposition to inorganic form occurs. For the most part, TKN was uniformly low in the water column of Prompton Reservoir during 2014 (Table 3-2) although most samples were greater than the reporting limit of 0.25 mg/L. The highest concentration of 5.05 mg/L was measured in the bottom water sample at station PR-3B on 10 September.

3.2.4 Total Phosphorus

Total phosphorus (TP) is a measure of both organic and inorganic forms of phosphorus. It is an essential plant nutrient and is often the most limiting nutrient to plant growth in freshwater systems. Inputs of phosphorus are the prime contributing factors to eutrophication in most freshwater systems. Phosphorus bound to bottom sediments in lakes can be released when oxygen levels are depleted in bottom waters. This phosphorus then becomes available for plant growth.

EPA guidance for nutrient criteria in lakes and reservoirs suggests a minimum concentration for total phosphorus of 0.01-mg/L (EPA 2000). Lakes and reservoirs exceeding this concentration are more likely to experience algal bloom problems during the growing season. Most of the measures for total phosphorus taken at all stations and depths at Prompton Reservoir were greater than the 0.01 mg/L reporting limit (Table 3-2). The highest

single concentration of 0.76 mg/L was measured in the lake bottom waters at station PR-3B on 10 September. Higher concentrations of phosphorus in the lower water column are characteristic of temperature-stratified lakes. Low DO conditions in deeper waters create a reducing chemical environment that can mobilize phosphorus from bottom sediment. Lower measurements of TP in the upper water column are likely a product of algal uptake.

3.2.5 Dissolved Phosphorus

Dissolved phosphorus (Diss P) concentrations measured at most stations and depths in the water column of Prompton Reservoir were less than the reporting limit of 0.05 mg/L (Table 3-2). Higher concentrations were seen in the lake bottom water samples during July through September. The highest concentration of dissolved phosphorus (0.64 mg/L) was in the bottom waters of the reservoir at Station PR-3B on 10 September.

3.2.6 Dissolved Phosphate

Orthophosphate (PO₄) is a measure of the inorganic oxidized form of soluble phosphorus. This form of phosphorus is the most readily available for uptake during photosynthesis. In freshwater environments, dissolved phosphate is usually a limiting nutrient and is readily taken up by freshwater plants and algae. In 2014, dissolved phosphate concentrations were low with most measured concentrations below the reporting limit of 0.01 mg/L. Higher concentrations were seen in the lake bottom water samples during June through September. The highest concentration of 0.71 mg/L was collected in the bottom of the water column at station PR-3B on 10 September.

3.2.7 Total Dissolved Solids

Total dissolved solids (TDS) is a measure of the amount of non-filterable dissolved material in the water. Dissolved salts such as sulfate, magnesium, chloride, and sodium contribute to elevated levels. Total dissolved solids in the water column of Prompton Reservoir stayed consistently low during 2014. Concentrations measured at all stations and depths ranged from 21 to 143 mg/L throughout the monitoring period (Table 3-2). Total dissolved solids measured at Prompton Reservoir in 2014 were in compliance with PADEP water quality standards. The Pennsylvania standard for TDS is concentrations less than 500 mg/L as a monthly average with a maximum concentration of 750 mg/L.

3.2.8 Total Suspended Solids

Total suspended solids (TSS) is a measure of the amount of filterable particulate matter that is suspended within the water column. High concentrations increase the turbidity of the water and can hinder photosynthetic activity, result in damage to fish gills, and cause impairment to spawning habitat (smothering). During 2014, total suspended solids (TSS) concentrations at all stations and depths ranged between less than the reporting limit of 3.0 mg/L to 94 mg/L (Table 3-2). The highest single sample measure of 94 mg/L was measured in the bottom waters of station PR-2 on 18 June. Uncharacteristically higher readings in bottom water samples can be attributed to sample collection error caused by disturbing bottom

sediments inadvertently during sampling and those suspended materials being included in the sample. The 18 June TSS sample at station PR-2B may reflect this sampling error.

3.2.9 Biochemical Oxygen Demand

Five-day biochemical oxygen demand (BOD₅) is a measure of the oxygen-depleting burden imposed by organic material present in water. It measures the rate of oxygen uptake by organisms in the water sample over a period of time. It is an indicator of the quality of a water body and the degree of pollution by biodegradable organic matter can therefore be inferred. The five-day biochemical oxygen demand and commonly accepted water quality inferences are as follows:

- 1-2 mg/L is associated with very clean water and little biodegradable wastes;
- 3-5 mg/L is associated with moderately clean water with some biodegradable wastes;
- 6-9 mg/L is associated with fairly polluted water, many bacteria, and much biodegradable wastes;
- 10+ mg/L is associated with very polluted water and large amounts of biodegradable wastes.

Biochemical oxygen demand concentrations in the waters of Prompton Reservoir were consistently low at all but one station in all months sampled (Table 3-2). Eight of forty individual samples collected during the season were greater than the 2.0 mg/L reporting limit. Three of these higher readings were collected in the bottom waters at station PR-3B. The maximum BOD measure for all stations and depths was 14.0 mg/L collected at station PR-3B on 12 August. In considering the rarity of higher readings, it is inferred that Prompton Reservoir and its associated tributaries contained very clean to moderately clean waters with little biodegradable wastes in 2014.

3.2.10 Alkalinity

Alkalinity (Alk) is a measure of the acid-neutralizing capacity of water. Waters that have high alkalinity values are considered undesirable because of excessive hardness and high concentrations of sodium salts. Water with low alkalinity has little capacity to buffer acidic inputs and is susceptible to acidification (low pH). The PADEP standard is a minimum concentration of 20-mg/L CaCO₃ except where natural conditions are less.

Alkalinity in the water's of Prompton Reservoir remained near or greater than the state minimum standard during the 2014 sampling season (Table 3-2). Concentrations measured at all stations and depths during the monitoring period ranged from 12.0 to 85.0 mg/L with lower alkalinity measures seen at most stations in May. The highest measure was taken from the bottom waters of the reservoir at station PR-3B on 10 September. The lowest measure of 12 mg/L was recorded on 21 May at stations PR-3M, PR-4S and PR-2B. The natural alkalinity of water is largely dependent on the underlying geology and soils within the surrounding watershed. The alkalinity measured at Prompton Reservoir is likely a result of the regional geology and primary productivity. The reservoir waters and surrounding tributaries were in compliance with the PADEP alkalinity criteria in 2014.

3.2.11 Total Organic Carbon

Total organic carbon (TOC) is a measure of the dissolved and particulate organic carbon in water. The bulk of organic carbon in water is composed of humic substances and partly degraded animal and plant materials. High levels of organic carbon coincide with a lowering of dissolved oxygen concentrations. Carbon is a nutrient required for biological processes. Total organic carbon in the water column of Prompton Reservoir was present in low concentrations during 2014 (Table 3-2). Concentrations of TOC at all stations and depths ranged from 1.5 mg/L to 13.6 mg/L.

3.2.12 Chlorophyll a

Chlorophyll a is the measure of the plant chlorophyll a primary pigment which helps plants get energy from light. It is found in most plants, algae, and cyanobacteria. Chlorophyll a measures increase in relation to algal densities in a water body. Chlorophyll a concentrations in the tributary stream surface waters were low relative to in-lake concentrations during 2014 (Appendix A). Concentrations measured in stream surface waters at all stations and dates averaged 2.55 ug/L. Concentrations were consistently higher at the in-lake surface stations where algal productivity would be expected to also be higher. Concentrations at lake stations PR-2 and PR-3, from 0-5 feet of depth, ranged between 3.6 ug/L and 10.6 ug/L with a seasonal average of 6.64 ug/L. The highest concentrations were seen during the May sampling event. Chlorophyll a readings were collected using a YSI 6600 V2-4 chlorophyll sensor.

3.3 TROPHIC STATE DETERMINATION

Carlson's (1977) trophic state index (TSI) is a method of quantitatively expressing the magnitude of eutrophication for a lake. The trophic state analysis calculates separate indices for eutrophication based on measures of total phosphorus, chlorophyll a, and secchi disk. Index values for each parameter range on the same scale from 0 (least enriched) to 100 (most enriched). The resulting indices can also be compared to qualitative threshold values that correspond to levels of eutrophication. Classification of Prompton Reservoir was based on a single sample taken each month at station PR-3 during the sampling season.

TSIs calculated for measures of secchi disk depth classified Prompton Reservoir as eutrophic in May (59.3), June (68.6), July (55.7), August (54.6) and September (62.3) (Fig. 3-7). TSIs calculated for measures of total phosphorus classified Prompton Reservoir as oligotrophic in May (37.4), June (37.4) and September (37.4), and eutrophic in July (57.3) and August (70.6). TSIs calculated for measures of chlorophyll a classified Prompton Reservoir as mesotrophic in May (49.3), June (46.3), July (48.2), August (47.2) and September (44.9). Chlorophyll a was measured with a YSI 6600 V2-4 chlorophyll sensor.

Carlson (1977) warned against averaging TSI values estimated for different parameters, and instead suggested giving priority to chlorophyll a in the summer and to phosphorus in the spring, fall, and winter. With this in mind, the trophic state of the reservoir based on TSI's was mesotrophic during most of the 2014 sampling period.

The EPA (1983) also provides criteria for defining the trophic conditions of lakes of the north-temperate zone based on concentrations of total phosphorus, chlorophyll *a*, and secchi depth (Table 3-3). Taking into account the general agreement between the EPA classifications with that of the Carlson (1977) calculated TSI values, the trophic condition of Prompton Reservoir was borderline mesotrophic/eutrophic during most of the sampling season.

Table 3-3. EPA trophic classification criteria and monthly measures for Prompton Reservoir in 2014.								
Water Quality Variable	Oligo-trophic	Meso-trophic	Eutrophic	21 May	18 June	23 July	12 August	10 September
Total phos. (ppb)	<10	10-20	>20	10	10	40	100	10
Chlorophyll (ppb)	<4	4-10	>10	6.75	4.95	6.05	5.45	4.30
Secchi depth (m)	>4	2-4	<2	1.05	0.55	1.35	1.45	0.85

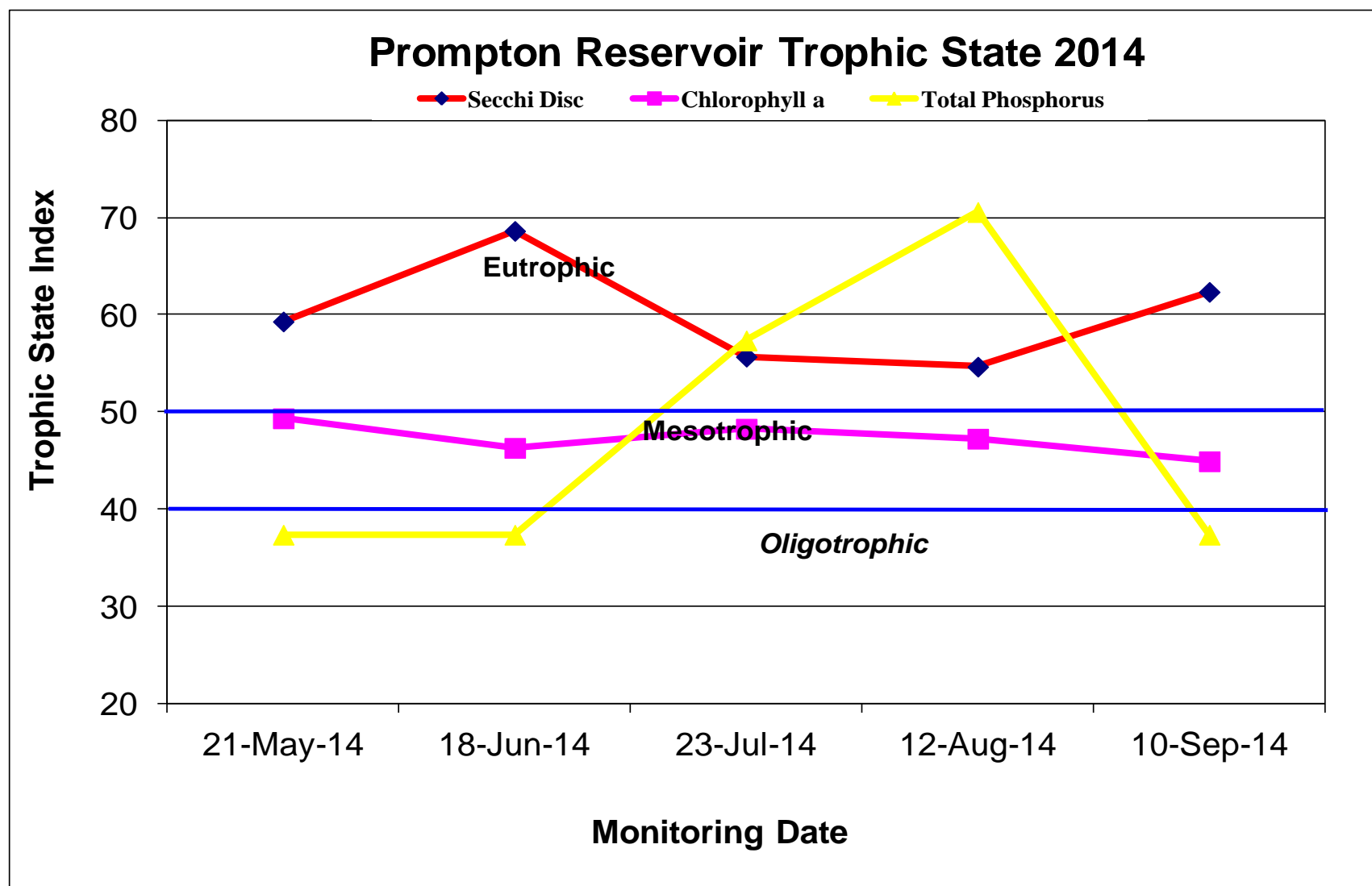


Figure 3-7. Trophic state indices calculated from secchi disk depth, concentrations of chlorophyll *a*, and total phosphorus measured in surface waters of Prompton Reservoir during 2014.

3.4 RESERVOIR BACTERIA MONITORING

Three forms of coliform bacteria contamination were monitored in the tributary and lake surface waters at Prompton Reservoir during 2014 including total and fecal coliform (Table 3-4). Total coliform includes *escherichia coliform* (*E. coli*) and related bacteria that are associated with fecal discharges. *Escherichia coliform* is used as an indicator of the presence of other potentially dangerous pathogens. Fecal coliform bacteria are a subgroup of the total coliform and are normally associated with waste derived from human and other warm-blooded animals and indicate the presence of fecal contamination but not the associated risk.

Total coliform contamination of Prompton Reservoir was relatively high during the 2014 monitoring period with many counts exceeding the method counting limit of 2400 colonies/100-ml. Total coliform values for all stations ranged from greater than the method counting limit of 2400 colonies/100-ml to 770 colonies/100-ml. The lowest count of 770 colonies/100-ml was measured in the lake surface waters at station PR-3S and PR-2S on 20 September and 23 July, respectively. Bacteria in natural waters are common and their presence in the sample is not necessarily a human health concern.

With respect to PADEP water quality standards, fecal coliform bacteria contamination was low at Prompton Reservoir during 2014. The PADEP standard for fecal coliform bacteria during the swimming season (from 1 May to 30 September) is a geometric mean not greater than 200 colonies/100-ml calculated for not less than five fecal coliform samples collected over a consecutive thirty day period. Given that our regular monitoring was completed on one day, single sample results were compared to the Pennsylvania Department of Health single sample standard of <1000 colonies/100-ml. One fecal coliform sample matched this standard at station PR-1S on 12 August.

On 12 August, e-coli sample (980 e-coli colonies/100ml) collected at the upstream station PR-1S exceeded the Environmental Protection Agency's swimming beach single sample (235 e-coli colonies/100ml) standard. Higher readings at this station indicate the presence of a source of potential bacterial contamination upstream of the reservoir. The higher upstream readings were not reflected in the reservoir surface water samples further downstream. Water contact recreation is not permitted at Prompton Reservoir.

Table 3-4. Bacteria counts (colonies/100 ml) at Prompton Reservoir during 2014. Shaded values exceed the Pennsylvania Department of Health or EPA water quality standard for bathing beaches.

STATION	DATE		Total Coliform (TC)		Fecal Coliform (FC)		Escherichia coli
PR-1S	5/21/2014		1400		33		25
	6/18/2014		2400		96		71
	7/23/2014	>	2400		44		40
	8/12/2014	>	2400		1000		980
	9/10/2014		2000		28		18
PR-2S	5/21/2014		870		56		52
	6/18/2014		920		15		7
	7/23/2014		770	<	2	<	1
	8/12/2014	>	2400	<	2		2
	9/10/2014		980	<	2	<	1
PR-3S	5/21/2014		1000		96		70
	6/18/2014		820	<	2		3
	7/23/2014		980	<	2		1
	8/12/2014		2000	<	2	<	1
	9/10/2014		770		2	<	1
PR-4S	5/21/2014		1000		72		70
	6/18/2014	>	2400		54		42
	7/23/2014	>	2400		8		8
	8/12/2014	>	2400		90		52
	9/10/2014	>	2400		10		5

4.0 REFERENCES

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APPENDIX A

STRATIFICATION DATA TABLES

2014 Prompton WQ Profile Summary

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
PR-1 Upstream	5/21/2014	11:32:23	1	13.24	96.9	10.14	6.94	-24.4	184	20.4	2.1	0.379
	6/18/2014	11:20:18	1	19.46	92.4	8.49	7.16	-36.9	151	17.7	1.4	0.194
	7/23/2014	11:33:07	1	21.76	101.3	8.9	7.59	-62	154	16.8	1.6	0.136
	8/12/2014	12:08:59	1	18.44	91.9	8.62	7.69	-67.4	88	18.6	2.4	0.115
	9/10/2014	13:44:11	1	18.75	100.6	9.38	8.51	-114	96.5	17.8	-0.5	0.122
PR-2 Mid-Lake	5/21/2014	12:48:03	0.5	15.67	96.8	9.62	6.81	-16.7	183	25.6	10.6	0.355
		12:47:23	5	15.13	92.3	9.27	6.72	-11.7	185	25.6	9.7	0.356
		12:46:25	10	13.19	82	8.6	6.64	-7.2	187	24.4	3	0.37
		12:45:30	15	12.8	79.2	8.38	6.63	-7.1	185	24.4	3.5	0.373
		12:42:52	20	12.46	4.1	0.44	6.59	-4.5	186	25.8	13.8	0.376
PR-2 Mid-Lake	6/18/2014	12:35:37	0.5	23.74	107.3	9.07	7.9	-80.4	99	19.6	5.6	0.181
		12:34:38	5	23.49	104.5	8.88	7.62	-63.8	99	19.8	7.9	0.181
		12:33:27	10	20.27	80.7	7.3	6.97	-25.8	115	19.7	8.8	0.186
		12:32:14	15	18.1	63.4	5.99	6.88	-20.8	116	21.2	6.9	0.191
		12:30:19	20	17.51	62.8	6	7.04	-30.1	98	-14.8	5.8	0.193
PR-2 Mid-Lake	7/23/2014	12:35:27	0.5	27.7	122	9.6	9.09	-151	2	18.6	4.3	0.13
		12:34:07	5	25.01	98.3	8.12	8.13	-94.1	-3	20.7	10.4	0.152
		12:32:36	10	23.55	43.9	3.72	7.26	-42.9	10	19.5	7.1	0.157
		12:31:23	15	21.71	18.1	1.59	7.28	-44.1	-11	20.2	3.2	0.169
		12:29:41	20	18.9	4.5	0.42	7.35	-47.7	-113	20.3	2.9	0.213
PR-2 Mid-Lake	8/12/2014	11:39:26	0.5	23.51	98.2	8.34	8.04	-88.4	71	23.2	7.8	0.108
		11:38:30	5	23.51	96.5	8.19	7.8	-74.2	70	23.1	8.7	0.108
		11:36:40	10	23.32	84.6	7.21	7.18	-37.9	75	23	7.1	0.109
		11:34:37	15	21.63	35.4	3.12	6.86	-19.8	83	22.1	3.4	0.114
		11:33:09	20	20.52	25.3	2.28	6.86	-19.8	77	22	2.6	0.121
PR-2 Mid-Lake	9/10/2014	11:31:32	21	20.38	28.2	2.54	6.93	-23.4	70	22.3	3.2	0.121
		13:08:17	0.5	23.53	114.3	9.71	9.28	-160	51	30.9	6.7	0.113
		13:06:51	5	21.83	99.3	8.71	8.85	-135	49.1	29.2	6.1	0.113
		13:05:30	10	21.68	84.6	7.44	8.17	-95.3	45.3	28	5.5	0.112
		13:03:12	15	20.28	10.2	0.93	7.42	-51.8	61.6	22	1.3	0.121
PR-2 Mid-Lake	9/10/2014	13:01:05	18	19.99	13.9	1.26	7.66	-65.5	50.3	22.7	1.4	0.122

2014 Prompton WQ Profile Summary

Station	Date	Time	Depth	Temp	DO	DO	pH	pHmV	ORP	Turbidity	Chloro.	SpCond
	M/D/Y	hh:mm:ss	ft	C	%	mg/L		mV	mV	NTU	ug/L	mS/cm
PR-3 Upstream of Dam Secchi 1.05 M	5/21/2014	12:25:10	0.5	15.48	89.9	8.96	6.6	-5.1	188	26.3	8.7	0.357
		12:24:21	5	14.54	81.7	8.31	6.51	-0.3	191	27	4.8	0.363
		12:23:21	10	13.76	74	7.66	6.44	4	192	27.8	4.7	0.368
		12:22:21	15	13.33	70.5	7.36	6.4	6.2	192	27.5	4	0.37
		12:21:24	20	12.96	64	6.74	6.35	8.5	191	30	4.2	0.373
		12:19:17	25	11.94	46.3	4.99	6.28	12.5	187	55	3.6	0.38
		12:17:23	30	10.37	29.1	3.25	6.33	9.7	171	47.8	3	0.397
PR-3 Upstream of Dam Secchi 0.55 M	6/18/2014	12:16:57	0.5	23.49	107	9.09	8.17	-95.7	50	19.3	3.6	0.185
		12:15:15	5	23.22	106.4	9.08	8.09	-91.3	42	19.2	6.3	0.186
		12:13:34	10	23.09	104.5	8.95	7.78	-73.1	39	19.2	6.2	0.187
		12:12:20	15	22.96	101	8.66	7.32	-46.4	40	20.4	5.9	0.186
		12:10:14	20	16.21	28.4	2.79	6.44	4.4	54	36.1	4.1	0.202
		12:08:17	25	13.16	4.2	0.44	6.33	10.2	34	1076.9	6.8	0.216
		12:06:13	30	12.06	2.7	0.3	6.38	6.7	-9	1399.1	6.2	0.224
PR-3 Upstream of Dam Secchi 1.35 M	7/23/2014	12:18:56	0.5	27.63	123.5	9.73	9.12	-153	-6	18.8	4.3	0.135
		12:18:15	5	25.3	120.5	9.9	9.07	-149	-14	19	7.8	0.138
		12:16:20	10	23.16	5.5	0.47	6.8	-16.2	-8	17.9	7.1	0.139
		12:15:21	15	21.9	7.3	0.64	6.9	-21.7	-28	17.5	3.8	0.15
		12:14:26	20	19.36	2.9	0.27	6.9	-21.9	-70	17.2	2.8	0.176
		12:12:16	25	13.88	2.8	0.29	6.89	-21.6	-103	17.4	3.2	0.211
		12:11:01	30	11.48	3	0.33	6.87	-20.5	-117	15.1	4	0.261
PR-3 Upstream of Dam Secchi 1.45	8/12/2014	11:19:40	0.5	22.78	74.9	6.45	7.09	-32.8	33	22	5.5	0.109
		11:19:01	5	22.71	74.7	6.44	7.07	-31.9	26	21.8	5.4	0.109
		11:16:17	10	22.08	21.1	1.84	6.84	-18.2	1	20	2.5	0.112
		11:14:44	15	21.43	9.4	0.84	6.9	-22.1	-38	20.1	1.3	0.115
		11:13:46	20	19.12	3.6	0.33	6.89	-21.2	-91	17.9	1.8	0.137
		11:12:21	25	13.36	3.4	0.35	6.83	-18.1	-110	15.7	2.7	0.172
		11:11:07	30	11.81	4	0.43	6.75	-14	-128	17.3	2.6	0.226
PR-3 Upstream of Dam Secchi 0.85	9/10/2014	12:49:24	0.5	23.19	100	8.55	8.64	-123	-9.2	27.2	4.2	0.112
		12:47:57	5	21.42	81.4	7.2	7.8	-74	-30	26.8	4.4	0.112
		12:47:00	10	21.19	69.1	6.13	7.45	-53.8	-8.9	25.8	3.9	0.113
		12:44:39	15	20.71	18	1.62	7.28	-43.8	-38	19.8	1.3	0.115
		12:42:53	20	18.9	3.9	0.37	7.31	-45.2	-120	18.2	2.2	0.135
		12:41:28	25	14.21	3.9	0.4	7.17	-37.1	-158	16	2.7	0.201
		12:39:18	29	12.09	6.4	0.69	7.04	-29.8	-176	17.1	2.9	0.3
PR-4 Dam Outfall	5/21/2014	11:22:09	1	14.75	94.6	9.58	6.68	-9.5	179	29.7	6.8	0.366
	6/18/2014	11:09:10	1	20.45	85.5	7.7	7.02	-28.7	140	19.1	4.4	0.184
	7/23/2014	11:21:11	0.5	21.92	75.4	6.6	6.9	-21.7	160	17.1	2	0.134
	8/12/2014	12:20:39	0.5	20.15	81.5	7.38	7.48	-55.5	102	20.6	2.3	0.112
	9/10/2014	14:03:51	1	19.64	91.3	8.35	8.15	-93.7	117	22.9	2.5	0.115

APPENDIX B

Laboratory Custody Sheets



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015787

Date Collected: 05/21/14 11:35
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	25	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
Fecal Coliform	33	/100mL	2	1	SM 9222D	05/21	18:00	PLW
Total Coliform	1400	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/22	12:00	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	14:45	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	05/28	14:15	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	00:46	JCL
Nitrogen, Nitrate	0.23	mg/L	.05	1	EPA 353.2	05/22	18:33	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:09	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	05/30	14:42	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	2.9	mg/L	1	1	SM5310 C	05/27	23:22	ALD
RESIDUES								
Solids, Total Dissolved	36	mg/L	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	16	mg/L	1	1	SM 2320 B	05/27	13:00	HRG

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Reviewed and Approved by:

Christina Kistler
Account Executive

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015787

Date Collected: 05/21/14 11:35
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
-----	-----	-----	-----	-----	-----	-----	-----

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator at 05/21/14 at 18:00.

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015788

Date Collected: 05/21/14 12:45
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	52	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
Fecal Coliform	56	/100mL	2	1	SM 9222D	05/21	18:00	PLW
Total Coliform	870	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	05/22	12:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	14:45	HRG
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	05/28	14:15	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	01:01	JCL
Nitrogen, Nitrate	0.08	mg/L	.05	1	EPA 353.2	05/22	18:34	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:10	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	05/30	14:43	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	4.9	mg/L	1	1	SM5310 C	05/27	23:35	ALD
RESIDUES								
Solids, Total Dissolved	21	mg/L	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	13	mg/L	1	1	SM 2320 B	05/27	13:00	HRG

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015788

Date Collected: 05/21/14 12:45
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator at 05/21/14 at 18:00.

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Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015789

Date Collected: 05/21/14 12:45
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/22	12:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	14:45	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	05/28	14:15	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	01:15	JCL
Nitrogen, Nitrate	0.16	mg/L	.05	1	EPA 353.2	05/22	18:35	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:10	JCL
Nitrogen, Total Kjeldahl	0.43	mg/L	.25	1	EPA 351.2	05/30	14:44	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	4.3	mg/L	1	1	SM5310 C	05/27	23:48	ALD
RESIDUES								
Solids, Total Dissolved	23	mg/L	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	13	mg/L	1	1	SM 2320 B	05/27	13:00	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015790

Date Collected: 05/21/14 12:45
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	05/22	12:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	14:45	HRG
Phosphorus as P, Total	0.11	mg/L	.01	1	SM 4500P-E	05/28	14:30	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	01:30	JCL
Nitrogen, Nitrate	0.17	mg/L	.05	1	EPA 353.2	05/22	18:38	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:13	JCL
Nitrogen, Total Kjeldahl	0.34	mg/L	.25	1	EPA 351.2	05/30	14:46	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	3.9	mg/L	1	1	SM5310 C	05/28	00:27	ALD
RESIDUES								
Solids, Total Dissolved	28	mg/L	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	43	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	05/27	13:15	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

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Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015791

Date Collected: 05/21/14 12:20
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	70	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
Fecal Coliform	96	/100mL	2	1	SM 9222D	05/21	18:15	PLW
Total Coliform	1000	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/22	12:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	14:45	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/28	14:30	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	01:45	JCL
Nitrogen, Nitrate	0.09	mg/L	.05	1	EPA 353.2	05/22	18:39	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:14	JCL
Nitrogen, Total Kjeldahl	0.34	mg/L	.25	1	EPA 351.2	05/30	14:49	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	5.0	mg/L	1	1	SM5310 C	05/28	00:52	ALD
RESIDUES								
Solids, Total Dissolved	21	mg/L	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	13	mg/L	1	1	SM 2320 B	05/27	13:15	HRG

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015791

Date Collected: 05/21/14 12:20
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator at 05/21/14 at 18:00.

Distribution of Reports:

Reviewed and Approved by:

Christina M. Kistler
Christina Kistler
Account Executive

Page 2 of 2

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015792

Date Collected: 05/21/14 12:20
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	05/22	12:15	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	14:45	HRG
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	05/28	14:30	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	02:43	JCL
Nitrogen, Nitrate	0.14	mg/L	.05	1	EPA 353.2	05/22	18:40	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:15	JCL
Nitrogen, Total Kjeldahl	0.35	mg/L	.25	1	EPA 351.2	05/30	14:50	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	4.9	mg/L	1	1	SM5310 C	05/28	01:04	ALD
RESIDUES								
Solids, Total Dissolved	32	mg/L	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	05/27	13:15	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015793

Date Collected: 05/21/14 12:20
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/l	.01	1	SM 4500P-E	05/22	12:15	HRG
Phosphorus as P, Dissolved	<.05	mg/l	.05	1	SM 4500P-E	06/02	15:00	HRG
Phosphorus as P, Total	0.07	mg/l	.01	1	SM 4500P-E	05/28	14:30	HRG
NITROGENS								
Nitrogen, Ammonia	0.16	mg/l	.05	1	D6919-03	06/05	02:58	JCL
Nitrogen, Nitrate	0.12	mg/l	.05	1	EPA 353.2	05/22	18:41	JCL
Nitrogen, Nitrite	<.05	mg/l	.05	1	EPA 353.2	05/22	17:16	JCL
Nitrogen, Total Kjeldahl	0.53	mg/l	.25	1	EPA 351.2	05/30	14:51	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/l	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	3.2	mg/l	1	1	SM5310 C	05/28	01:16	ALD
RESIDUES								
Solids, Total Dissolved	39	mg/l	5	1	SM 2540C	05/22	12:50	TMH
Solids, Total Suspended	11	mg/l	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	17	mg/l	1	1	SM 2320 B	05/27	13:30	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015794

Date Collected: 05/21/14 11:20
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	70	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
Fecal Coliform	72	/100mL	2	1	SM 9222D	05/21	18:15	PLW
Total Coliform	1000	mpn/100mL	1	1	SM 9223B	05/22	12:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.07	mg/L	.01	1	SM 4500P-E	05/22	12:30	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/02	15:00	HRG
Phosphorus as P, Total	0.07	mg/L	.01	1	SM 4500P-E	05/28	14:30	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/05	03:13	JCL
Nitrogen, Nitrate	0.12	mg/L	.05	1	EPA 353.2	05/22	18:44	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/22	17:19	JCL
Nitrogen, Total Kjeldahl	0.43	mg/L	.25	1	EPA 351.2	05/30	14:54	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/22	12:10	EMW
Total Organic Carbon	4.5	mg/L	1	1	SM5310 C	05/28	18:27	ALD
RESIDUES								
Solids, Total Dissolved	29	mg/L	5	1	SM 2540C	05/22	13:20	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/22	12:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	12	mg/L	1	1	SM 2320 B	05/27	13:30	HRG

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Christina Kistler
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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/05/14
Lab ID: 2295-14-0015794

Date Collected: 05/21/14 11:20
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 05/21/14 17:00

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator at 05/21/14 at 18:00.

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Christina Kistler
Account Executive

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Jbs
04/17/14 3:47:33 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 2295

Work Order: 004034

Project Leader: CMB

No: 236463

Customer: Gregory Wacik

Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District

Environmental Resources Branch

100 Penn Square East

Philadelphia PA 19107

Phone: 215-656-6561 Ext:

Samplers:

USACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 4

Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: *[Signature]*

15787

Sample No: 1 Desc: PR-1 Surface

PU

FC, EC, TC,

NO2-N, NO3-N, d-po4-P, o-po4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14
Time: 11:35

A - 1 X 250mL Micro P w/ Sterile/Na2S2O3;

B - 1 X 1 Bod P w/ Cool to 6 C;

C - 1 X 16oz NO2NO3 P w/ Cool to 6 C;

D - 1 X 500mL NH3 P w/ H2SO4 (PH<2);

E - 1 X 2xambervoa g w/ H3PO4/zero headspace;

F - 1 X 8oz Alk P w/

Cool to 6 C/Zero Headspace;

15788

Sample No: 2 Desc: PR-2 Surface

PU

FC, EC, TC,

NO2-N, NO3-N, d-po4-P, o-po4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14
Time: 12:45

A - 1 X 250mL Micro P w/ Sterile/Na2S2O3;

B - 1 X 1 Bod P w/ Cool to 6 C;

C - 1 X 16oz NO2NO3 P w/ Cool to 6 C;

D - 1 X 500mL NH3 P w/ H2SO4 (PH<2);

E - 1 X 2xambervoa g w/ H3PO4/zero headspace;

F - 1 X 8oz Alk P w/

Cool to 6 C/Zero Headspace;

Relinquished by: *[Signature]*

Received by: *[Signature]*

Date: 5/21/14

Time: 330

Received for laboratory by: *[Signature]*

Date: 5/21/14

Time: 1700

Sample entered by: *[Signature]*

EC

lbs
04/17/14 3:47:34 PM

M. J. REIDER ASSOCIATES, INC.

COFC.FRT
Page: 2

Chain of Custody

Account: 2295

Work Order: 004034

Project Leader: CMB

No: 236463

Customer: Gregory Wacik

Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District

Environmental Resources Branch

100 Penn Square East

Philadelphia PA 19107

Phone: 215-656-6561

Ext:

Samplers:

W3ACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 4

Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: [Signature]

15789

Sample No: 3 Desc: PR-2 Mid-Depth

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD₅

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14

Time: 1245

A - 1 X 1 Bod p w/ Cool to 6 C;

B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;

C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);

D - 1 X 2xambervoa g w/ H3PO4/zero headspace;

E - 1 X 8oz Alk p w/

Cool to 6 C/Zero Headspace;

15790

Sample No: 4 Desc: PR-2 Deep

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD₅

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14

Time: 1245

A - 1 X 1 Bod p w/ Cool to 6 C;

B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;

C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);

D - 1 X 2xambervoa g w/ H3PO4/zero headspace;

E - 1 X 8oz Alk p w/

Cool to 6 C/Zero Headspace;

15791

Sample No: 5 Desc: PR-3 Surface

FC, EC, TC, H₂O H₂O

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD₅

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14

Time: 1220

A - 1 X 250mlMicro P w/ Sterile/Na2S2O3;

B - 1 X 1 Bod p w/ Cool to 6 C;

C - 1 X 16ozNO2NO3 p w/ Cool to 6 C;

D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);

E - 1 X 2xambervoa g w/ H3PO4/zero headspace;

F - 1 X 8oz Alk p w/

Cool to 6 C/Zero Headspace;

Relinquished by: [Signature]

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 5/21/14

Time: 330

Date: 5/21/14

Time: 1700

Sample entered by:

CC

jbs
04/17/14 3:47:34 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 3

Chain of Custody

Account: 2295

Work Order: 004034

Project Leader: CMB

No: 236463

Customer: Gregory Wack

Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Phone: 215-656-6561 Ext:

Samplers:

WACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 4

Approved By: 425

Deg C. If Temp Unacceptable, On Ice? Y N

15792

Sample No: 6 Desc: PR-3 Mid-Depth

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14
Time: 1220

15793

Sample No: 7 Desc: PR-3 Deep

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14
Time: 1220

15794

Sample No: 8 Desc: PR-4 Surface

FC, EC, TC, Hg, Hg, BOD

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 5/21/14
Time: 1120

- A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;
B - 1 X 1 Bod P w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 P w/ Cool to 6 C;
D - 1 X 500ml NH3 P w/ H2SO4 (pH<2);
E - 1 X 2xamber voca g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk P w/
Cool to 6 C/zero Headspace;

Relinquished by: [Signature]

Received by: [Signature]

Date: 5/21/14

Time: 330

Received for Laboratory by: [Signature]

Date: 5/21/14

Time: 1700

Sample entered by: ECC



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019436

Date Collected: 06/18/14 11:25
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	71	mpn/100mL	1	1	SM 9223B	06/19	12:00	DAD
Fecal Coliform	96	/100mL	2	1	SM 9222D	06/18	17:50	PLW
Total Coliform	2400	mpn/100mL	1	1	SM 9223B	06/19	12:00	DAD
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/19	09:30	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:30	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	06/19	13:45	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	11:58	JCL
Nitrogen, Nitrate	0.34	mg/L	.05	1	EPA 353.2	06/19	18:25	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:42	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	06/23	16:24	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	2.6	mg/L	1	1	SM5310 C	06/19	17:08	ALD
RESIDUES								
Solids, Total Dissolved	50	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	20	mg/L	1	1	SM 2320 B	06/23	09:30	HRG

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Reviewed and Approved by:

Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019436

Date Collected: 06/18/14 11:25
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 06/18/14 at 17:45.

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Reviewed and Approved by:

Christina M. Kistler
Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019437

Date Collected: 06/18/14 12:30
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Escherichia coli	7	mpn/100mL	1	1	SM 9223B	06/19	12:00	DAD
Fecal Coliform	15	/100mL	2	1	SM 9222D	06/18	17:50	PLW
Total Coliform	920	mpn/100mL	1	1	SM 9223B	06/19	12:00	DAD
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	0.05	mg/L	.01	1	SM 4500P-E	06/19	09:30	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:30	HRG
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	06/19	13:45	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	12:41	JCL
Nitrogen, Nitrate	0.06	mg/L	.05	1	EPA 353.2	06/19	18:26	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:43	JCL
Nitrogen, Total Kjeldahl	0.41	mg/L	.25	1	EPA 351.2	06/23	16:27	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	3.7	mg/L	1	1	SM5310 C	06/19	17:52	ALD
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	19	mg/L	1	1	SM 2320 B	06/23	09:30	HRG

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019437

Date Collected: 06/18/14 12:30
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
-----	-----	-----	-----	-----	-----	-----	-----

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H₂SO₄ to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 06/18/14 at 17:45.

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Reviewed and Approved by:

Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019438

Date Collected: 06/18/14 12:30
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/19	09:35	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:30	HRG
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	06/19	13:45	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	12:56	JCL
Nitrogen, Nitrate	0.11	mg/L	.05	1	EPA 353.2	06/19	18:27	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:46	JCL
Nitrogen, Total Kjeldahl	0.39	mg/L	.25	1	EPA 351.2	06/23	16:28	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	4.0	mg/L	1	1	SM5310 C	06/19	18:39	ALD
RESIDUES								
Solids, Total Dissolved	46	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	19	mg/L	1	1	SM 2320 B	06/23	09:45	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019439

Date Collected: 06/18/14 12:30
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.08	mg/L	.01	1	SM 4500P-E	06/19	09:35	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:30	HRG
Phosphorus as P, Total	0.19	mg/L	.01	1	SM 4500P-E	06/19	13:50	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	13:11	JCL
Nitrogen, Nitrate	0.14	mg/L	.05	1	EPA 353.2	06/19	18:28	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:47	JCL
Nitrogen, Total Kjeldahl	0.87	mg/L	.25	1	EPA 351.2	06/23	16:29	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	4.4	mg/L	1	1	SM5310 C	06/19	18:55	ALD
RESIDUES								
Solids, Total Dissolved	56	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	94	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	19	mg/L	1	1	SM 2320 B	06/23	09:45	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Reviewed and Approved by:

Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019440

Date Collected: 06/18/14 00:12
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Escherichia coli	3	mpn/100ml	1	1	SM 9223B	06/19	12:00	DAD
Fecal Coliform	<2	/100mL	2	1	SM 9222D	06/18	18:05	PLW
Total Coliform	820	mpn/100ml	1	1	SM 9223B	06/19	12:00	DAD
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/19	09:35	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:30	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	06/19	13:50	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	13:25	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/19	18:30	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:48	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	06/23	16:30	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	3.4	mg/L	1	1	SM5310 C	06/19	19:10	ALD
RESIDUES								
Solids, Total Dissolved	61	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	18	mg/L	1	1	SM 2320 B	06/23	09:45	HRG

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Reviewed and Approved by:

Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019440

Date Collected: 06/18/14 00:12
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 06/18/14 at 17:45.

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019441

Date Collected: 06/18/14 12:00
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/19	09:40	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:30	HRG
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	06/19	13:50	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	13:40	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/19	18:31	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:48	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	06/19	14:29	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	06/19	19:25	ALD
RESIDUES								
Solids, Total Dissolved	37	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	21	mg/L	1	1	SM 2320 B	06/23	09:45	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019442

Date Collected: 06/18/14 12:00
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.10	mg/L	.01	1	SM 4500P-E	06/19	09:40	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:35	HRG
Phosphorus as P, Total	0.10	mg/L	.01	1	SM 4500P-E	06/19	13:50	HRG
NITROGENS								
Nitrogen, Ammonia	0.23	mg/L	.05	1	D6919-03	06/19	13:54	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/19	18:32	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:49	JCL
Nitrogen, Total Kjeldahl	0.28	mg/L	.25	1	EPA 351.2	06/19	14:30	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	06/19	19:40	ALD
RESIDUES								
Solids, Total Dissolved	26	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	22	mg/L	1	1	SM 2320 B	06/23	09:45	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019443

Date Collected: 06/18/14 11:10
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Escherichia coli	42	mpn/100ml	1	1	SM 9223B	06/19	12:00	DAD
Fecal Coliform	54	/100mL	2	1	SM 9222D	06/18	18:05	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	06/19	12:00	DAD
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	06/19	09:40	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/19	13:35	HRG
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	06/19	13:50	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/19	14:09	JCL
Nitrogen, Nitrate	0.12	mg/L	.05	1	EPA 353.2	06/19	18:33	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/19	16:50	JCL
Nitrogen, Total Kjeldahl	0.42	mg/L	.25	1	EPA 351.2	06/19	14:32	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/19	11:45	EMW
Total Organic Carbon	3.9	mg/L	1	1	SM5310 C	06/19	19:56	ALD
RESIDUES								
Solids, Total Dissolved	30	mg/L	5	1	SM 2540C	06/20	12:45	TMH
Solids, Total Suspended	21	mg/L	3	1	SM 2540D	06/20	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	19	mg/L	1	1	SM 2320 B	06/23	10:00	HRG

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 06/30/14
Lab ID: 2295-14-0019443

Date Collected: 06/18/14 11:10
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 06/18/14 17:10

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
-----	-----	-----	-----	-----	-----	-----	-----

COMMENTS

01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

02 The total coliform sample was placed in the incubator on 06/18/14 at 17:45.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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jbs
05/12/14 1:05:00 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Account: 2295

Work Order: 004034

Project Leader: CMB

No: 237774

Customer: Gregory Wack

Work Order Description: Prompton Reservoir

Chain of Custody

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Phone: 215-656-6561 Ext:

Samplers:

WACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 8 Deg C. If Temp Unacceptable, On Ice? ☒ N

Approved By: JWS

19436

Sample No: 1 Desc: PR-1 Surface

FC, EC, TC, DAP

NO2-N, NO3-N, d-pO4-P, oP4, BOD

NH3-N, tkm, Alk, tds, tss, pO4-P, toc,

Matrix: 0

Date: 6/18/14

Time: 1125

A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;

B - 1 X 1 L Bod P w/ Cool to 6 C;

C - 1 X 16oz NO2NO3 P w/ Cool to 6 C;

D - 1 X 500ml NH3 P w/ H2SO4 (pH<2);

E - 1 X 2xamberova g w/ H3PO4/zero headspace;

F - 1 X 8oz Alk P w/ Cool to 6 C/Zero Headspace;

Matrix: 0

Date: 6/18/14

Time: 1230

A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;

B - 1 X 1 L Bod P w/ Cool to 6 C;

C - 1 X 16oz NO2NO3 P w/ Cool to 6 C;

D - 1 X 500ml NH3 P w/ H2SO4 (pH<2);

E - 1 X 2xamberova g w/ H3PO4/zero headspace;

F - 1 X 8oz Alk P w/ Cool to 6 C/Zero Headspace;

19437

Sample No: 2 Desc: PR-2 Surface

FC, EC, TC, DAP

NO2-N, NO3-N, d-pO4-P, oP4, BOD

NH3-N, tkm, Alk, tds, tss, pO4-P, toc,

Relinquished by:

Received by:

Date: 6-18-14

Time: 6/18/14

Date: 6-18-14

Time: 1710

Received for laboratory by:

Sample entered by:

jbs
05/12/14 1:05:00 PM

M. J. REIDER ASSOCIATES, INC.

CORC.PRT
Page: 2

Chain of Custody

Account: 2295

Work Order: 004034

Project leader: CMB

No: 237774

Customer: Gregory Wacik

Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District

Environmental Resources Branch

100 Penn Square East

Philadelphia PA 19107

Phone: 215-656-6561

Ext:

Samplers:

WACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 8 Deg C. If Temp Unacceptable, On Ice?

Approved By: JBS

3 N

19438

Sample No: 3 Desc: PR-2 Mid-Depth

NO2-N, NO3-N, d-pO4-P, o-Po4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 6/18/14

Time: 1230

A - 1 X 1 Bod P w/ Cool to 6 C;

B - 1 X 16ozNO2NO3 P w/ Cool to 6 C;

C - 1 X 500ml NH3 P w/ H2SO4 (pH<2);

D - 1 X 2xambervoa g w/ H3PO4/zero headspace;

E - 1 X 8oz Alk P w/

Cool to 6 C/Zero Headspace;

19439

Sample No: 4 Desc: PR-2 Deep

NO2-N, NO3-N, d-pO4-P, o-Po4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 6/18/14

Time: 1230

A - 1 X 1 Bod P w/ Cool to 6 C;

B - 1 X 16ozNO2NO3 P w/ Cool to 6 C;

C - 1 X 500ml NH3 P w/ H2SO4 (pH<2);

D - 1 X 2xambervoa g w/ H3PO4/zero headspace;

E - 1 X 8oz Alk P w/

Cool to 6 C/Zero Headspace;

19440

Sample No: 5 Desc: PR-3 Surface

NO2-N, NO3-N, d-pO4-P, o-Po4, BOD

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

NH3-N, tkm, Alk, tds, tss, po4-P, toc,

Matrix: 0

Date: 6/18/14

Time: 1200

A - 1 X 250mlMicro P w/ Sterile/Na2S2O3;

B - 1 X 1 Bod P w/ Cool to 6 C;

C - 1 X 16ozNO2NO3 P w/ Cool to 6 C;

D - 1 X 500ml NH3 P w/ H2SO4 (pH<2);

E - 1 X 2xambervoa g w/ H3PO4/zero headspace;

F - 1 X 8oz Alk P w/

Cool to 6 C/Zero Headspace;

Relinquished by: [Signature]

Received by: [Signature]

Date: 6-18-14

Time: 6/18/14 3:30

Received for Laboratory by: [Signature]

Date: 6-18-14

Time: 7:50 1710 JBS 6-18-14

Sample entered by: [Signature]

jbs
05/12/14 1:05:00 PM

M. J. REIDER ASSOCIATES, INC.

CORC.PRT
Page: 3

Chain of Custody

Account: 2295

Work Order: 004034

Project Leader: CMB

No: 237774

Customer: Gregory Wacik

Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Phone: 215-656-6561 Ext:

Total Sampling Time (hours):

Bottle Prep by:

Samplers:

CMACIK

Laboratory Receipt Temp: 8 Deg C. If Temp Unacceptable, On Ice? ☒ N

Approved By: JWS

Sample No: 6 Desc: PR-3 Mid-Depth

NO2-N, NO3-N, d-po4-p, o₂-po4, BOD
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: 0

Date: 6/18/14

Time: 1200

A - 1 X 1 L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: 0

Date: 6/18/14

Time: 1200

A - 1 X 1 L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: 0

Date: 6/18/14

Time: 1100

A - 1 X 250mlMicro p w/ Sterile/Na2S2O3;
B - 1 X 1 L Bod p w/ Cool to 6 C;
C - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Sample No: 8 Desc: PR-4 Surface

NO2-N, NO3-N, d-po4-p, o₂-po4, BOD
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Relinquished by:

Received by:

Date: 6-18-14

Time: 6/18/14

Received for Laboratory by:

Date: 6-18-14

Time: 7:50 PM

Sample entered by:



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023420

Date Collected: 07/23/14 11:40
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	40	mpn/100ml	1	1	SM 9223B	07/24	13:10	PLW
Fecal Coliform	44	/100ml	2	1	SM 9222D	07/23	19:20	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/24	13:10	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/24	09:55	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/24	15:25	HRG
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	07/25	14:32	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/24	15:21	JCL
Nitrogen, Nitrate	0.18	mg/L	.05	1	EPA 353.2	07/24	17:17	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:15	JCL
Nitrogen, Total Kjeldahl	0.36	mg/L	.25	1	EPA 351.2	07/29	14:59	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	07/24	22:00	ALD
RESIDUES								
Solids, Total Dissolved	50	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	26	mg/L	1	1	SM 2320 B	07/24	11:00	HRG

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Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023420

Date Collected: 07/23/14 11:40
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/23/14 at 19:10.

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Christina Kistler
Account Executive

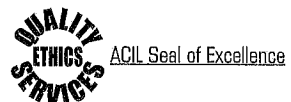
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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023421

Date Collected: 07/23/14 12:40
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100mL	1	1	SM 9223B	07/24	13:10	PLW
Fecal Coliform	<2	/100mL	2	1	SM 9222D	07/23	19:20	PLW
Total Coliform	770	mpn/100mL	1	1	SM 9223B	07/24	13:10	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/24	09:55	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/24	15:25	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	07/25	14:32	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/24	15:36	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/24	17:20	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:16	JCL
Nitrogen, Total Kjeldahl	0.61	mg/L	.25	1	EPA 351.2	07/29	15:02	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	3.8	mg/L	1	1	SM5310 C	07/24	22:17	ALD
RESIDUES								
Solids, Total Dissolved	48	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	9	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	20	mg/L	1	1	SM 2320 B	07/24	11:00	HRG

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Christina Kistler
Account Executive

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023421

Date Collected: 07/23/14 12:40
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/23/14 at 19:10.

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023422

Date Collected: 07/23/14 12:40
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/24	09:55	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/24	15:25	HRG
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	07/25	14:32	HRG
NITROGENS								
Nitrogen, Ammonia	0.07	mg/L	.05	1	D6919-03	07/24	15:50	JCL
Nitrogen, Nitrate	0.05	mg/L	.05	1	EPA 353.2	07/24	17:21	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:17	JCL
Nitrogen, Total Kjeldahl	0.56	mg/L	.25	1	EPA 351.2	07/29	15:03	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	3.1	mg/L	1	1	SM5310 C	07/24	23:06	ALD
RESIDUES								
Solids, Total Dissolved	46	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	24	mg/L	1	1	SM 2320 B	07/24	11:00	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Reviewed and Approved by:

Christina Kistler
Account Executive

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Reported To: USACE, Philadelphia District
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100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023423

Date Collected: 07/23/14 12:40
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/24	09:55	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/24	15:20	HRG
Phosphorus as P, Total	0.10	mg/L	.01	1	SM 4500P-E	07/25	14:36	HRG
NITROGENS								
Nitrogen, Ammonia	0.86	mg/L	.05	1	D6919-03	07/24	16:49	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/24	17:22	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:19	JCL
Nitrogen, Total Kjeldahl	1.69	mg/L	.25	1	EPA 351.2	07/29	15:04	ALD
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	4.8	mg/L	1	1	SM5310 C	07/24	23:24	ALD
RESIDUES								
Solids, Total Dissolved	56	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	29	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	41	mg/L	1	1	SM 2320 B	07/24	11:15	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

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Christina Kistler
Account Executive

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Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023424

Date Collected: 07/23/14 12:15
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Escherichia coli	1	mpn/100ml	1	1	SM 9223B	07/24	13:10	PLW
Fecal Coliform	<2	/100mL	2	1	SM 9222D	07/23	19:20	PLW
Total Coliform	980	mpn/100ml	1	1	SM 9223B	07/24	13:10	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/24	09:55	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/24	15:25	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	07/25	14:36	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/24	17:03	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/24	17:23	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:20	JCL
Nitrogen, Total Kjeldahl	0.59	mg/L	.25	1	EPA 351.2	07/29	15:04	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	3.6	mg/L	1	1	SM5310 C	07/25	00:28	ALD
RESIDUES								
Solids, Total Dissolved	30	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	22	mg/L	1	1	SM 2320 B	07/24	11:15	HRG

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023424

Date Collected: 07/23/14 12:15
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/23/14 at 19:10.

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Account Executive

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023425

Date Collected: 07/23/14 12:15
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/24	09:58	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/24	15:25	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/25	14:36	HRG
NITROGENS								
Nitrogen, Ammonia	0.07	mg/L	.05	1	D6919-03	07/24	17:18	JCL
Nitrogen, Nitrate	0.07	mg/L	.05	1	EPA 353.2	07/24	17:26	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:21	JCL
Nitrogen, Total Kjeldahl	0.45	mg/L	.25	1	EPA 351.2	07/29	15:05	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	3.1	mg/L	1	1	SM5310 C	07/25	01:01	ALD
RESIDUES								
Solids, Total Dissolved	42	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	24	mg/L	1	1	SM 2320 B	07/24	11:15	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Account Executive

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023426

Date Collected: 07/23/14 12:15
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.18	mg/L	.01	1	SM 4500P-E	07/24	09:58	HRG
Phosphorus as P, Dissolved	0.13	mg/L	.05	1	SM 4500P-E	07/24	15:27	HRG
Phosphorus as P, Total	0.23	mg/L	.01	1	SM 4500P-E	07/25	14:36	HRG
NITROGENS								
Nitrogen, Ammonia	2.11	mg/L	.05	1	D6919-03	07/24	17:33	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/24	17:26	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:22	JCL
Nitrogen, Total Kjeldahl	3.07	mg/L	.25	1	EPA 351.2	07/29	15:06	ALD
OTHER								
Biochemical Oxygen Demand	5	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	9.4	mg/L	1	1	SM5310 C	07/25	01:20	ALD
RESIDUES								
Solids, Total Dissolved	89	mg/L	5	1	SM 2540C	07/28	13:35	TMH
Solids, Total Suspended	11	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	64	mg/L	1	1	SM 2320 B	07/24	11:30	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023426

Date Collected: 07/23/14 12:15
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
02	The SM 5210B sample did not have a DO depletion of at least 2 mg/L.							

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Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023427

Date Collected: 07/23/14 11:25
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	8	mpn/100ml	1	1	SM 9223B	07/24	13:10	PLW
Fecal Coliform	8	/100ml	2	1	SM 9222D	07/23	19:20	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/24	13:10	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	07/24	09:58	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/25	14:10	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	07/25	14:40	HRG
NITROGENS								
Nitrogen, Ammonia	0.07	mg/L	.05	1	D6919-03	07/24	17:47	JCL
Nitrogen, Nitrate	0.16	mg/L	.05	1	EPA 353.2	07/24	17:27	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/24	15:25	JCL
Nitrogen, Total Kjeldahl	0.45	mg/L	.25	1	EPA 351.2	07/29	15:07	ALD
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/24	13:15	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	07/25	01:35	ALD
RESIDUES								
Solids, Total Dissolved	26	mg/L	5	1	SM 2540C	07/28	14:00	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/28	13:35	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	24	mg/L	1	1	SM 2320 B	07/24	11:30	HRG

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Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 07/31/14
Lab ID: 2295-14-0023427

Date Collected: 07/23/14 11:25
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 07/23/14 18:45

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 07/23/14 at 19:10.

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06/05/14 1:30:24 PM

M. J. REIDER ASSOCIATES, INC.

Chain of Custody

Account: 2295 Work Order: 004034 Project Leader: CMB No: 239132
Customer: Gregory Wacik Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107
Phone: 215-656-6561 Ext: WACIK

Samplers: WACIK

Total Sampling Time (hours): _____ Bottle Prep by: _____

Laboratory Receipt Temp: 6 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RAC

Sample No: 23420 1 Desc: PR-1 Surface
FC, EC, TC, HC
NO₂-N, NO₃-N, d-po₄-p, o-po₄, BOD W
NH₃-N, tkm, Alk, tds, tss, po₄-p, toc,

Sample No: 23421 2 Desc: PR-2 Surface
FC, EC, TC, HC
NO₂-N, NO₃-N, d-po₄-p, o-po₄, BOD W
NH₃-N, tkm, Alk, tds, tss, po₄-p, toc,

Matrix: O Date: 7/23/14
Time: 1140
A - 1 X 250ml Micro p w/ Sterile/Na₂S₂O₃;
B - 1 X 1 Bod p w/ Cool to 6 C;
C - 1 X 16oz NO₂NO₃ p w/ Cool to 6 C;
D - 1 X 500ml NH₃ p w/ H₂SO₄ (pH<2);
E - 1 X 2xambervoa g w/ H₃PO₄/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: O Date: 7/23/14
Time: 1240
A - 1 X 250ml Micro p w/ Sterile/Na₂S₂O₃;
B - 1 X 1 Bod p w/ Cool to 6 C;
C - 1 X 16oz NO₂NO₃ p w/ Cool to 6 C;
D - 1 X 500ml NH₃ p w/ H₂SO₄ (pH<2);
E - 1 X 2xambervoa g w/ H₃PO₄/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Relinquished by: [Signature] Received by: Rafael QuijadaReceived for Laboratory by: Rafael QuijadaDate: 7/23/14 Time: 3:30Date: 7/23/14 Time: 1845Sample entered by: [Signature]

M. J. REIDER ASSOCIATES, INC.

jbs
06/05/14 1:30:24 PM

Chain of Custody

Account: 2295 Work Order: 004034 Project Leader: CMB No: 239132
Customer: Gregory Wacik Work Order Description: Prompton Reservoir
Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107
Phone: 215-656-9561 Ext: WACIK
Bottle Prep by: _____
Total Sampling Time (hours): _____
Laboratory Receipt Temp: 6 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RAC

Remarks:

=====

Sample No: 3 Desc: PR-2 Mid-Depth
NO2-N, NO3-N, d-po4-p, o-po4, BOD g
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: O Date: 7/23/14
Time: 1240
A - 1 X 1 L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Sample No: 4 Desc: PR-2 Deep
NO2-N, NO3-N, d-po4-p, o-po4, BOD g
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: O Date: 7/23/14
Time: 1240
A - 1 X 1 L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Sample No: 5 Desc: PR-3 Surface
FC, EC, TC, g
NO2-N, NO3-N, d-po4-p, o-po4, BOD g
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: O Date: 7/23/14
Time: 1215
A - 1 X 250mlMicro P w/ Sterile/Na2S2O3;
B - 1 X 1 L Bod p w/ Cool to 6 C;
C - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Relinquished by: Rafael Quijada Received by: Rafael Quijada
Date: 7/23/14 Time: 3:30
1725

Received for laboratory by: Rafael Quijada
Date: 7/23/14 Time: 1735 RAC
1845 7/23/14
Sample entered by: R

jbs

06/05/14 1:30:24 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 3

Chain of Custody

Account: 2295 Work Order: 004034 Project Leader: CMB No: 239132
Customer: Gregory Wacik Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107
Phone: 215-656-6561 Ext: Samplers: WACIKTotal Sampling Time (hours): Bottle Prep by: Laboratory Receipt Temp: 6 Deg F. If Temp Unacceptable, On Ice? (Y) N
Approved By: WACIKSample No: 6 Desc: PR-3 Mid-Depth
NO2-N, NO3-N, d-po4-p, o-po4, BOD₅
NH3-N, tkm, Alk, tds, tss, po4-p, toc,Sample No: 7 Desc: PR-3 Deep
NO2-N, NO3-N, d-po4-p, o-po4, BOD₅
NH3-N, tkm, Alk, tds, tss, po4-p, toc,Sample No: 8 Desc: PR-4 Surface
FC, EC, TC,
NO2-N, NO3-N, d-po4-p, o-po4, BOD₅
NH3-N, tkm, Alk, tds, tss, po4-p, toc,Matrix: 0 Date: 7/23/14
Time: 1215
A - 1 X L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;Matrix: 0 Date: 7/23/14
Time: 1215
A - 1 X L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;Matrix: 0 Date: 7/23/14
Time: 1225
A - 1 X 250mlMicro p w/ Sterile/Na2S2O3;
B - 1 X L Bod p w/ Cool to 6 C;
C - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;Relinquished by: Rafael QuijadaReceived by: Rafael QuijadaReceived for laboratory by: Rafael QuijadaDate: 7/23/14 Time: 3:30
1725

Date: 7/23/14 Time: 1845

Sample entered by: (R)



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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030889

Date Collected: 08/12/14 12:20
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	980	mpn/100ml	1	1	SM 9223B	08/13	11:15	PLW
Fecal Coliform	1000	/100ml	2	1	SM 9222D	08/12	17:15	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	08/13	11:15	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/13	09:00	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:30	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	08/13	13:48	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/12	22:31	JCL
Nitrogen, Nitrate	0.21	mg/L	.05	1	EPA 353.2	08/13	17:46	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:46	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	08/14	16:58	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	2.1	mg/L	1	1	SM5310 C	08/13	13:54	ALD
RESIDUES								
Solids, Total Dissolved	52	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	08/18	10:00	HRG

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030889

Date Collected: 08/12/14 12:20
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/12/14 at 17:15.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030890

Date Collected: 08/12/14 11:40
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	2	mpn/100ml	1	1	SM 9223B	08/13	11:15	PLW
Fecal Coliform	<2	/100ml	2	1	SM 9222D	08/12	17:25	PLW
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	08/13	11:15	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/13	09:00	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:30	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	08/13	13:48	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/12	22:45	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/13	17:47	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:47	JCL
Nitrogen, Total Kjeldahl	0.64	mg/L	.25	1	EPA 351.2	08/14	17:01	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	08/13	14:11	ALD
RESIDUES								
Solids, Total Dissolved	51	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	08/18	10:15	HRG

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030890

Date Collected: 08/12/14 11:40
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/12/14 at 17:15.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030891

Date Collected: 08/12/14 11:40
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/13	09:03	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:30	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	08/13	13:53	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/12	23:00	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/13	17:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:48	JCL
Nitrogen, Total Kjeldahl	0.33	mg/L	.25	1	EPA 351.2	08/14	17:02	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	08/13	14:28	ALD
RESIDUES								
Solids, Total Dissolved	44	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	08/18	10:15	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030892

Date Collected: 08/12/14 11:40
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/13	09:03	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:35	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/13	13:53	HRG
NITROGENS								
Nitrogen, Ammonia	0.27	mg/L	.05	1	D6919-03	08/12	23:14	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/13	17:49	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:51	JCL
Nitrogen, Total Kjeldahl	0.44	mg/L	.25	1	EPA 351.2	08/14	17:03	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	2.9	mg/L	1	1	SM5310 C	08/13	14:45	ALD
RESIDUES								
Solids, Total Dissolved	63	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	25	mg/L	1	1	SM 2320 B	08/18	10:15	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030893

Date Collected: 08/12/14 11:10
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Escherichia coli	<1	mpn/100mL	1	1	SM 9223B	08/13	11:15	PLW
Fecal Coliform	<2	/100mL	2	1	SM 9222D	08/12	17:25	PLW
Total Coliform	2000	mpn/100mL	1	1	SM 9223B	08/13	11:15	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.10	mg/L	.01	1	SM 4500P-E	08/13	09:03	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:35	HRG
Phosphorus as P, Total	0.10	mg/L	.01	1	SM 4500P-E	08/13	13:53	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/12	23:29	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/13	17:52	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:52	JCL
Nitrogen, Total Kjeldahl	0.42	mg/L	.25	1	EPA 351.2	08/14	17:04	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	08/13	15:01	ALD
RESIDUES								
Solids, Total Dissolved	57	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	22	mg/L	1	1	SM 2320 B	08/18	10:15	HRG

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Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030893

Date Collected: 08/12/14 11:10
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/12/14 at 17:15.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the Laboratory.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030894

Date Collected: 08/12/14 11:10
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/13	09:03	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:35	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	08/13	13:53	HRG
NITROGENS								
Nitrogen, Ammonia	0.15	mg/L	.05	1	D6919-03	08/13	00:28	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/13	17:53	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:53	JCL
Nitrogen, Total Kjeldahl	0.45	mg/L	.25	1	EPA 351.2	08/14	17:05	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	08/13	16:15	ALD
RESIDUES								
Solids, Total Dissolved	43	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	08/18	10:30	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030895

Date Collected: 08/12/14 11:10
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.34	mg/L	.01	1	SM 4500P-E	08/13	09:03	HRG
Phosphorus as P, Dissolved	0.29	mg/L	.05	1	SM 4500P-E	08/13	13:35	HRG
Phosphorus as P, Total	0.39	mg/L	.01	1	SM 4500P-E	08/13	13:53	HRG
NITROGENS								
Nitrogen, Ammonia	2.58	mg/L	.05	1	D6919-03	08/13	00:43	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/13	17:56	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:54	JCL
Nitrogen, Total Kjeldahl	2.80	mg/L	.25	1	EPA 351.2	08/14	17:06	JCL
OTHER								
Biochemical Oxygen Demand	14	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	9.0	mg/L	1	1	SM5310 C	08/13	16:51	ALD
RESIDUES								
Solids, Total Dissolved	97	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	12	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	56	mg/L	1	1	SM 2320 B	08/18	10:30	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030896

Date Collected: 08/12/14 12:30
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	52	mpn/100mL	1	1	SM 9223B	08/13	11:15	PLW
Fecal Coliform	90	/100mL	2	1	SM 9222D	08/12	17:25	PLW
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	08/13	11:15	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/13	09:03	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/13	13:35	HRG
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	08/13	13:53	HRG
NITROGENS								
Nitrogen, Ammonia	0.14	mg/L	.05	1	D6919-03	08/13	00:58	JCL
Nitrogen, Nitrate	0.16	mg/L	.05	1	EPA 353.2	08/13	17:57	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/13	15:55	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	08/14	17:07	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/13	14:15	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	08/13	17:41	ALD
RESIDUES								
Solids, Total Dissolved	49	mg/L	5	1	SM 2540C	08/16	12:20	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/16	12:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	24	mg/L	1	1	SM 2320 B	08/18	10:30	HRG

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 08/21/14
Lab ID: 2295-14-0030896

Date Collected: 08/12/14 12:30
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 08/12/14 16:20

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 08/12/14 at 17:15.
- 02 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

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M. J. REIDER ASSOCIATES, INC.

raq
07/16/14 4:26:52 PM

Chain of Custody

No: 241684

Project Leader: CMB

Work Order: 004034

Work Order Description: Prompton Reservoir

Customer: Gregory Wacik

Remarks:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Phone: 215-656-6561 Ext:

Samplers: WACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 8 Deg C. If Temp Unacceptable, On Ice? (C) N

Approved By: JRS

30889 Sample No: 1 Desc: PR-1 Surface
FC, EC, TC, W
NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: O Date: 8/12/14
Time: 12:36
A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;
B - 1 X L Bod p w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xamber vial g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

30890 Sample No: 2 Desc: PR-2 Surface
FC, EC, TC, W
NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: O Date: 8/12/14
Time: 11:40
A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;
B - 1 X L Bod p w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xamber vial g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 8/12/14 Time: 3:00

Date: 8-12-14 Time: 1630

Sample entered by: DSM

M. J. REIDER ASSOCIATES, INC.

raq
07/16/14 4:26:52 PM

Chain of Custody

No: 241684

Work Order: 004034
Project Leader: CMB
Work Order Description: Prompton Reservoir

Account: 2295
Customer: Gregory Wacik

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107
Phone: 215-656-6561 Ext:
Samplers: WACIK

Remarks: _____

Total Sampling Time (hours): 8 Bottle Prep by: _____
Laboratory Receipt Temp: 8 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: JRS

30891 Sample No: 3 Desc: PR-2 Mid-Depth
NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

30892 Sample No: 4 Desc: PR-2 Deep
NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

30893 Sample No: 5 Desc: PR-3 Surface
FC, EC, TC,
NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Matrix: 0 Date: 8/12/14
Time: 1140
A - 1 X 1 L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: 0 Date: 8/12/14
Time: 1140
A - 1 X 1 L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: 0 Date: 8/12/14
Time: 1110
A - 1 X 250mlMicro p w/ Sterile/Na2S2O3;
B - 1 X 1 L Bod p w/ Cool to 6 C;
C - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Relinquished by: [Signature] Received by: [Signature]

Received for laboratory by: [Signature]

Date: 8/12/14 Time: 3:50

Date: 8-12-14 Time: 1620

Sample entered by: DSM

Chain of Custody

Account: 2295 Work Order: 004034 Project Leader: CMB No: 241684
Customer: Gregory Wacik Work Order Description: Prompton Reservoir

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Phone: 215-656-6561 Ext: 215-656-6561

Sample No: 6 Desc: PR-3 Mid-Depth

NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tdkn, Alk, tds, tss, po4-p, toc,

Sample No: 7 Desc: PR-3 Deep

NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tdkn, Alk, tds, tss, po4-p, toc,

Sample No: 8 Desc: PR-4 Surface

FC, EC, TC,
NO2-N, NO3-N, d-po4-p, o-po4, BOD,
NH3-N, tdkn, Alk, tds, tss, po4-p, toc,

Matrix: O Date: 8/12/14
Time: 1110

Matrix: O Date: 8/12/14
Time: 1110

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Matrix: O Date: 8/12/14
Time: 1230

Remarks:

Total Sampling Time (hours):

Laboratory Receipt Temp: 8 Deg C. If Temp Unacceptable, On Ice? N

Approved By: [Signature]

Received for laboratory by: [Signature]

Date: 8-12-14

Time: 1620

Sample entered by: [Signature]



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034270

Date Collected: 09/10/14 13:50
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Escherichia coli	18	mpn/100mL	1	1	SM 9223B	09/11	11:50	PLW
Fecal Coliform	28	/100mL	2	1	SM 9222D	09/10	17:55	PLW
Total Coliform	2000	mpn/100mL	1	1	SM 9223B	09/11	11:50	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/11	09:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:40	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/11	12:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/11	00:55	JCL
Nitrogen, Nitrate	0.08	mg/L	.05	1	EPA 353.2	09/11	16:07	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:42	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	09/11	18:12	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	1.5	mg/L	1	1	SM5310 C	09/12	11:06	ALD
RESIDUES								
Solids, Total Dissolved	22	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	25	mg/L	1	1	SM 2320 B	09/15	09:30	HRG

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M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034270

Date Collected: 09/10/14 13:50
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/10/14 at 17:40.

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034271

Date Collected: 09/10/14 13:00
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100ml	1	1	SM 9223B	09/11	11:50	PLW
Fecal Coliform	<2	/100ml	2	1	SM 9222D	09/10	17:55	PLW
Total Coliform	980	mpn/100ml	1	1	SM 9223B	09/11	11:50	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/11	09:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:40	HRG
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	09/11	12:20	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/11	01:10	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/11	16:08	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:43	JCL
Nitrogen, Total Kjeldahl	1.15	mg/L	.25	1	EPA 351.2	09/11	18:13	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	4.3	mg/L	1	1	SM5310 C	09/12	11:54	ALD
RESIDUES								
Solids, Total Dissolved	25	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	13	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	24	mg/L	1	1	SM 2320 B	09/15	09:30	HRG

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034271

Date Collected: 09/10/14 13:00
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/10/14 at 17:40.

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Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034272

Date Collected: 09/10/14 13:00
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/11	09:45	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:45	HRG
Phosphorus as P, Total	0.08	mg/L	.01	1	SM 4500P-E	09/11	12:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/11	01:55	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/11	16:09	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:44	JCL
Nitrogen, Total Kjeldahl	0.48	mg/L	.25	1	EPA 351.2	09/11	18:14	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	3.7	mg/L	1	1	SM5310 c	09/12	12:28	ALD
RESIDUES								
Solids, Total Dissolved	35	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	25	mg/L	1	1	SM 2320 B	09/15	09:30	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Reported To: USACE, Philadelphia District
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100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034273

Date Collected: 09/10/14 13:00
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/11	09:47	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:45	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/11	12:25	HRG
NITROGENS								
Nitrogen, Ammonia	0.18	mg/L	.05	1	D6919-03	09/11	02:10	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/11	16:10	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:47	JCL
Nitrogen, Total Kjeldahl	0.60	mg/L	.25	1	EPA 351.2	09/11	18:15	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	3.5	mg/L	1	1	SM5310 C	09/12	14:28	ALD
RESIDUES								
Solids, Total Dissolved	33	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	27	mg/L	1	1	SM 2320 B	09/15	09:30	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Reported To: USACE, Philadelphia District
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100 Penn Square East
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Date of Report: 09/18/14
Lab ID: 2295-14-0034274

Date Collected: 09/10/14 13:00
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Escherichia coli	<1	mpn/100mL	1	1	SM 9223B	09/11	11:50	PLW
Fecal Coliform	2	/100mL	2	1	SM 9222D	09/10	17:55	PLW
Total Coliform	770	mpn/100mL	1	1	SM 9223B	09/11	11:50	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/11	09:47	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:45	HRG
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/11	12:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/11	02:25	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/11	16:13	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:48	JCL
Nitrogen, Total Kjeldahl	0.94	mg/L	.25	1	EPA 351.2	09/11	18:17	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	4.0	mg/L	1	1	SM5310 C	09/12	14:44	ALD
RESIDUES								
Solids, Total Dissolved	52	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	9	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	26	mg/L	1	1	SM 2320 B	09/15	09:30	HRG

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Account Executive

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Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034274

Date Collected: 09/10/14 13:00
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/10/14 at 17:40.

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Christina Kistler
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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034275

Date Collected: 09/10/14 12:30
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/11	09:47	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:45	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	09/11	12:25	HRG
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/11	02:40	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/11	16:14	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:49	JCL
Nitrogen, Total Kjeldahl	0.76	mg/L	.25	1	EPA 351.2	09/11	18:18	JCL
OTHER								
Biochemical Oxygen Demand	2.00	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	3.7	mg/L	1	1	SM5310 c	09/12	15:00	ALD
RESIDUES								
Solids, Total Dissolved	44	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	24	mg/L	1	1	SM 2320 B	09/15	09:45	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Christina M. Kistler

Christina Kistler
Account Executive

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034275

Date Collected: 09/10/14 12:30
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
02	The SM 5210B sample did not have a DO depletion of at least 2 mg/L.							

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Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034276

Date Collected: 09/10/14 12:30
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.71	mg/L	.01	1	SM 4500P-E	09/11	09:47	HRG
Phosphorus as P, Dissolved	0.64	mg/L	.05	1	SM 4500P-E	09/11	12:45	HRG
Phosphorus as P, Total	0.76	mg/L	.01	1	SM 4500P-E	09/11	12:25	HRG
NITROGENS								
Nitrogen, Ammonia	4.52	mg/L	.05	1	D6919-03	09/11	02:55	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/11	16:17	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:50	JCL
Nitrogen, Total Kjeldahl	5.05	mg/L	.25	1	EPA 351.2	09/11	18:19	JCL
OTHER								
Biochemical Oxygen Demand	13	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	13.6	mg/L	1	1	SM5310 C	09/12	15:20	ALD
RESIDUES								
Solids, Total Dissolved	143	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	14	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	85	mg/L	1	1	SM 2320 B	09/15	09:45	HRG

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.

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Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034277

Date Collected: 09/10/14 14:10
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Escherichia coli	5	mpn/100mL	1	1	SM 9223B	09/11	11:50	PLW
Fecal Coliform	10	/100mL	2	1	SM 9222D	09/10	18:05	PLW
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	09/11	11:50	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	09/11	09:47	HRG
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/11	12:45	HRG
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	09/11	12:25	HRG
NITROGENS								
Nitrogen, Ammonia	0.06	mg/L	.05	1	D6919-03	09/11	03:10	JCL
Nitrogen, Nitrate	0.10	mg/L	.05	1	EPA 353.2	09/11	16:18	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/11	14:51	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	09/11	18:20	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/11	11:30	ALD
Total Organic Carbon	3.4	mg/L	1	1	SM5310 C	09/12	16:36	ALD
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	09/12	12:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/12	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	26	mg/L	1	1	SM 2320 B	09/15	09:45	HRG

Distribution of Reports:

Reviewed and Approved by:


Christina Kistler
Account Executive

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: Gregory Wacik
Reported To: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Date of Report: 09/18/14
Lab ID: 2295-14-0034277

Date Collected: 09/10/14 14:10
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 09/10/14 17:15

PWSID: 3130843

Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The Ortho-phosphate was filtered and the dissolved phosphorous was filtered and preserved w/ H2SO4 to pH <2 after the sample was received at the laboratory.
- 02 The total coliform sample was placed in the incubator on 09/10/14 at 17:40.

Distribution of Reports:

Reviewed and Approved by:

Christina Kistler
Account Executive

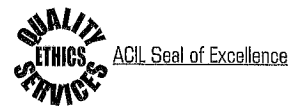
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Account: 2295 Work Order: 004034
Customer: Gregory Wacik Work Order Description: Prompton Reservoir

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107

Phone: 215-656-6561 Ext: 215-656-6561

Samplers: WACIK

Sample No: 1 Desc: PR-1 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 2 Desc: PR-2 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 3 Desc: PR-3 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 4 Desc: PR-4 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 5 Desc: PR-5 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 6 Desc: PR-6 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 7 Desc: PR-7 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 8 Desc: PR-8 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 9 Desc: PR-9 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 10 Desc: PR-10 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 11 Desc: PR-11 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 12 Desc: PR-12 Surface

FC, EC, TC, *WACIK*
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, *WACIK*
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 13 Desc: PR-13 Surface

Project Leader: CMB No: 242815

Chain of Custody

Remarks: On ice

Total Sampling Time (hours): Bottle Prep by:

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? *Y* N

Approved By: *RAC*

Matrix: O Date: 9/10/14 Time: 1350

A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;
B - 1 X 16oz Bod p w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/ Cool to 6 C/Zero Headspace;

Matrix: O Date: 9/10/14 Time: 1350

A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;
B - 1 X 16oz Bod p w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/ Cool to 6 C/Zero Headspace;

Matrix: O Date: 9/10/14 Time: 1350

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B - 1 X 16oz Bod p w/ Cool to 6 C;
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Matrix: O Date: 9/10/14 Time: 1350

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Matrix: O Date: 9/10/14 Time: 1350

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Matrix: O Date: 9/10/14 Time: 1350

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E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
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Matrix: O Date: 9/10/14 Time: 1350

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B - 1 X 16oz Bod p w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/ Cool to 6 C/Zero Headspace;

Matrix: O Date: 9/10/14 Time: 1350

A - 1 X 250ml Micro P w/ Sterile/Na2S2O3;
B - 1 X 16oz Bod p w/ Cool to 6 C;
C - 1 X 16oz NO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/ Cool to 6 C/Zero Headspace;

Matrix: O Date: 9/10/14 Time: 1350

Received for laboratory by: Rafael Quijada

Date: 9/10/14 Time: 1715

Sample entered by: *OSM*

M. J. REIDER ASSOCIATES, INC.

jbs
08/06/14 12:22:11 PM

Chain of Custody

Account: 2295 Work Order: 004034 Project Leader: CMB No: 242815
Customer: Gregory Wacik Work Order Description: Prompton Reservoir

Remarks:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107
Phone: 215-656-6561 Ext:
Samplers: WACIK

Total Sampling Time (hours): on ice Bottle Prep by: on ice

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Q N
Approved By: PAQ

Sample No: 3 Desc: PR-2 Mid-Depth
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, W
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 4 Desc: PR-2 Deep
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, W
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No: 5 Desc: PR-3 Surface
FC, EC, TC, W
NO2-N, NO3-N, d-pO4-p, o-pO4, BOD, W
NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Relinquished by: [Signature] Received by: [Signature]

Date: 9/10/14 Time: 330
1545

Received for laboratory by: Rafael Quijada

Date: 9/10/14 Time: 1715

Sample entered by: Q

Matrix: 0 Date: 9/10/14
Time: 1300
A - 1 X L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: 0 Date: 9/10/14
Time: 1300
A - 1 X L Bod p w/ Cool to 6 C;
B - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
C - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
D - 1 X 2xambervoa g w/ H3PO4/zero headspace;
E - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Matrix: 0 Date: 9/10/14
Time: 1230
A - 1 X 250mlMicro p w/ Sterile/Na2S2O3;
B - 1 X L Bod p w/ Cool to 6 C;
C - 1 X 16ozNO2NO3 p w/ Cool to 6 C;
D - 1 X 500ml NH3 p w/ H2SO4 (pH<2);
E - 1 X 2xambervoa g w/ H3PO4/zero headspace;
F - 1 X 8oz Alk p w/
Cool to 6 C/Zero Headspace;

Rafael Quijada

Rafael Quijada

Account:	2295	Work Order: 004034
		Work Order Description:

Address: USACE, Philadelphia District
Environmental Resources Branch
100 Penn Square East
Philadelphia PA 19107
Phone: 215-656-6561 **Ext:**

samplers: WAGIK

Chain of Custody

Project Leader: CMB
No: 242815

Remarks:

on ice

Total Sampling Time (hours): _____ Bottle Prep by: _____

Bottle Prep by:

Laboratory Receipt Temp: 13 Deg C. If Temp Unacceptable, On Ice? Y
Approved By: RAC

Sample No:	6	Desc:	PR-3 Mid-Depth
<p> </p>			

NO2-N, NO3-N, d-PO4-P, o-PO4, BOD,

NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No:	7	Desc:	PR-3 Deep

NO2-N, NO3-N, d-pO4-P, o-pO4, BOD,

NH3-N, tkm, Alk, tds, tss, po4-p, toc,

Sample No:	8	Desc:	PR-4 Surface
<p>1. <u>Location</u> _____</p> <p>2. <u>Area</u> _____</p> <p>3. <u>Remarks</u> _____</p>			

FC, EC, TC, TC

2

Relinquished by: [Signature]

9/10/16 / 337

15

Received for Laboratory by:

9/10/14

Time: 1715

Sample entered by: