

**2016 WATER QUALITY MONITORING
PROMPTON RESERVOIR
PROMPTON, PENNSYLVANIA**



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

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**2016 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 2016.

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 2016 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 11 May and 13 September 2016 (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 11 May and 13 September 2016 (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 2016 monitoring period. Laboratory reporting sheet are provided in Appendix B.

Table 2-1. Prompton Reservoir water quality monitoring schedule for 2016				
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)
11 May	X	X	X	X
07 June	X	X	X	X
19 July	X	X	X	X
17 August	X	X	X	X
13 September	X	X	X	X

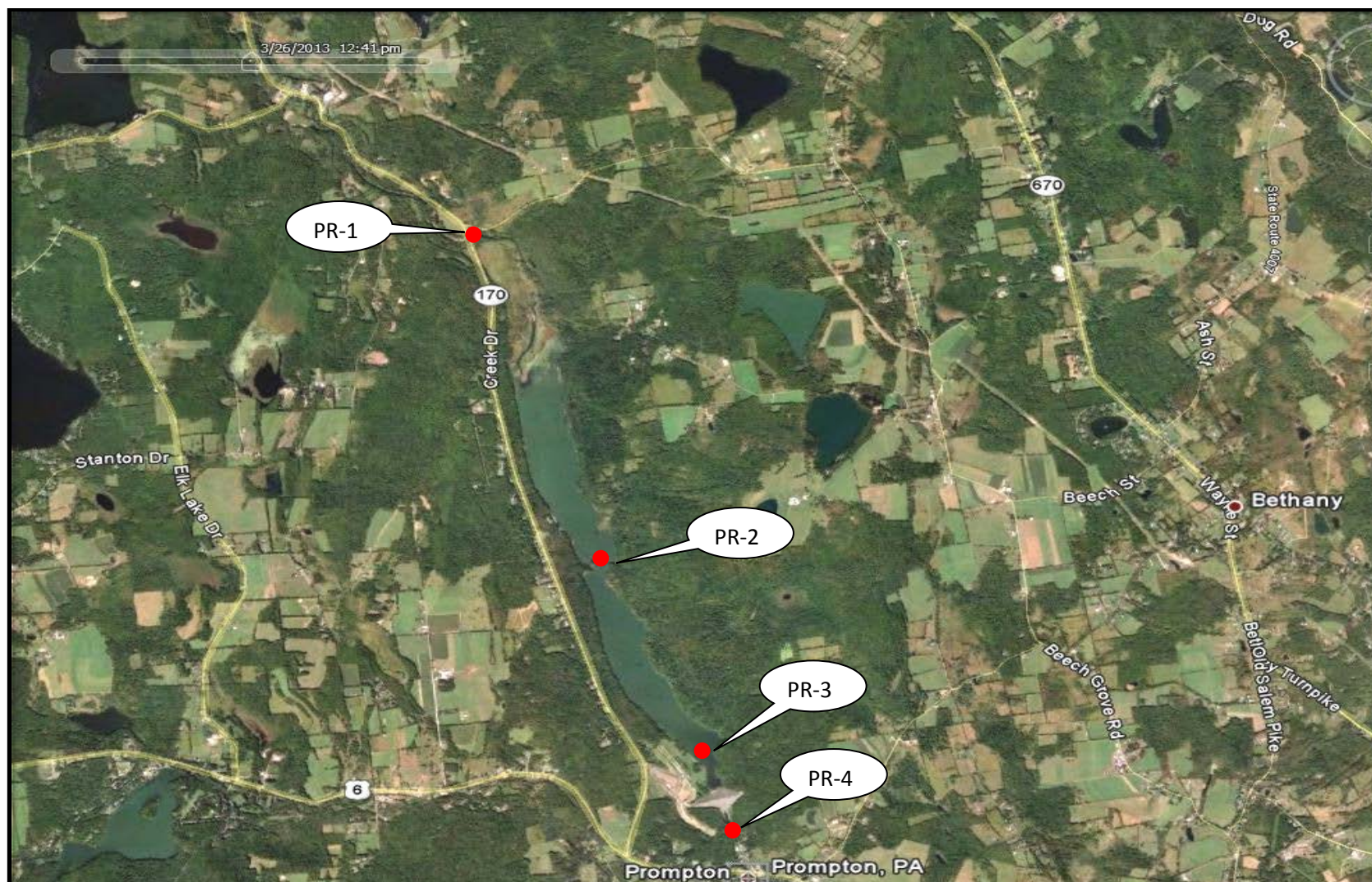


Figure 2-1. Location map for Prompton Reservoir and water quality monitoring stations in 2016.

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 2016.

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 2016

2.3 TROPHIC STATE DETERMINATION

The trophic state of Prompton Reservoir was determined by methods outlined by Carlson (1977) and EPA (1983). In general, these methods calculate 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 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 11 May and 13 September 2016. 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 2016. 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 2016

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 2016. Maximum temperatures were recorded during the August sampling (Fig. 3-1). Upstream temperatures at station PR-1S were cooler than downstream release temperatures with an average temperature of 18.22°C and range from 12.35°C in May to 21.44°C in July. Downstream temperatures at station PR-4S averaged 20.02°C and ranged from 12.84°C in May to 24.45°C in August. 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. Surface temperatures for the sampling period at reservoir body station PR-3 near the outlet works of the dam averaged 22.92°C and ranged from 26.77°C in August to 12.47°C in May.

Prompton Reservoir was stratified with respect to temperature in 2016 (Fig. 3-2). In May, the onset of stratification was observed with surface temperatures (15.26°C) approximately 5.55°C warmer than the lower water column (9.71°C). The onset of de-stratification was evident in early September. September sampling showed a noticeable cooling of surface waters.

3-2

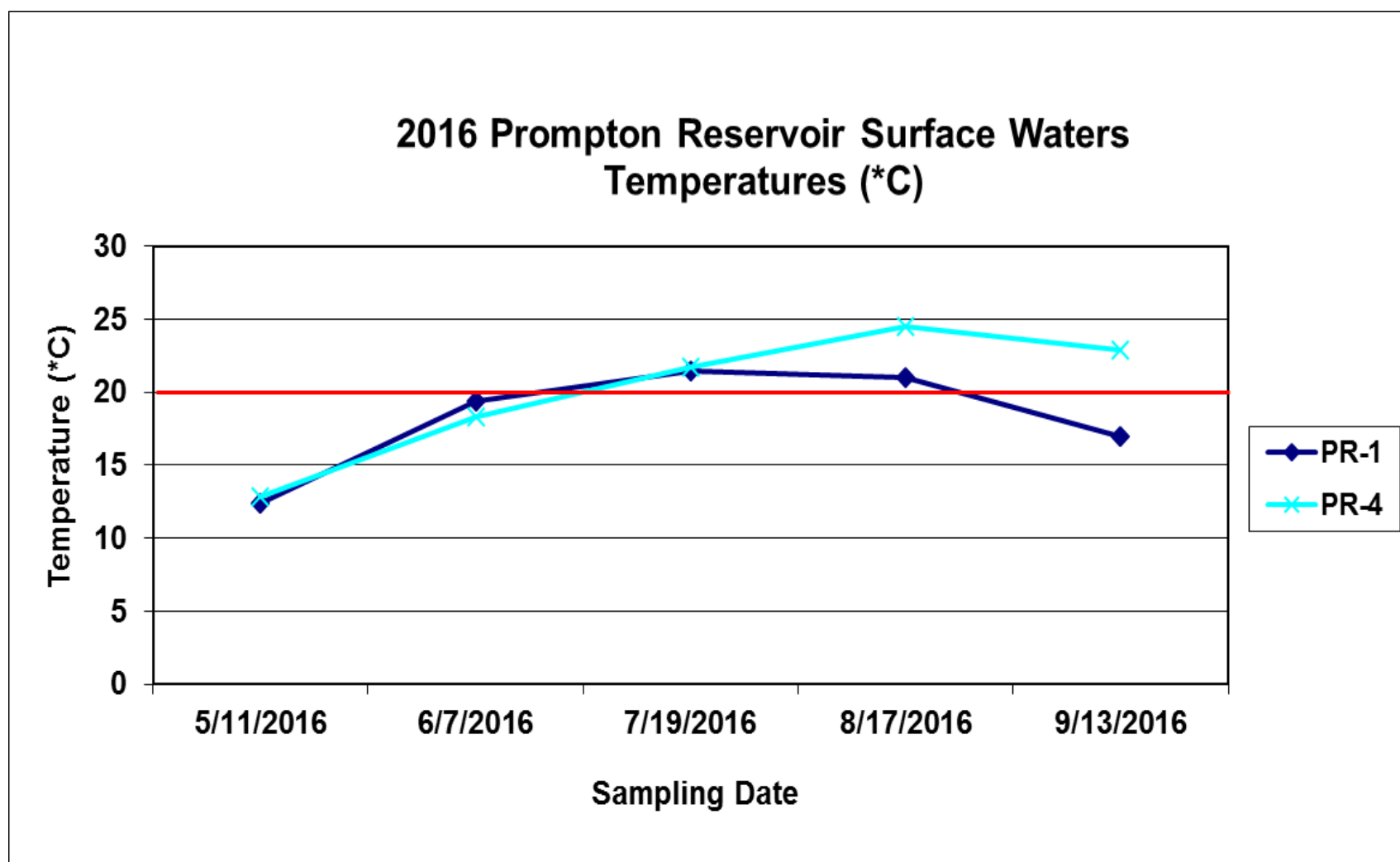


Figure 3-1. Temperature in tributary and outflow surface waters of Prompton Reservoir during 2016. See Appendix A for a summary of plotted values. The coldwater species preference temperature of 20°C is shown as a red line comparison.

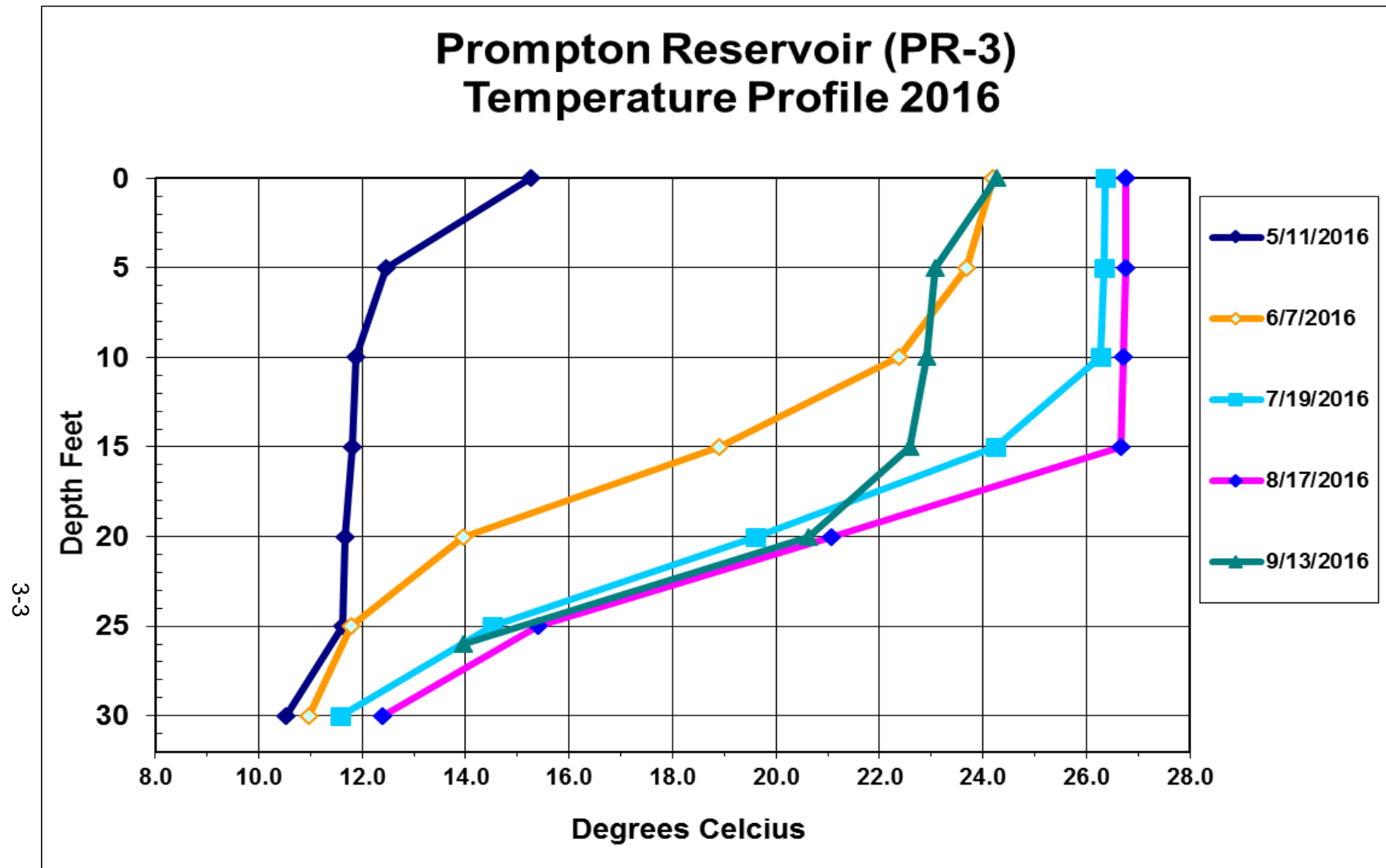


Figure 3-2. Temperature stratification of Prompton Reservoir during 2016 from water quality measured at station PR-3. See Appendix A for a summary of plotted values.

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 2016 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 13 September when inflow (PR-1S) DO was 9.31 mg/L and outflow (PR-4S) DO was 6.97 mg/L. Dissolved oxygen concentrations upstream (PR-1S) ranged from 11.32 mg/L in May to 8.22 mg/L in July with an average seasonal reading of 9.51 mg/L. Dissolved oxygen concentrations downstream (PR-4S) ranged from 6.18 mg/L in July to 10.60 mg/L in May with an average seasonal reading of 7.98 mg/L.

The stratification of Prompton Reservoir influenced the distribution of DO in the water column during 2016 (Fig. 3-4). In May, the influence of stratification was apparent, as DO concentrations decreased from 11.53 mg/L at the surface to 2.50 mg/L at the bottom. From June and continuing through September, the lower water column from approximately 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 August. September sampling showed DO levels in the epilimnion less than the state criteria. The Pennsylvania water quality standard for DO is a minimum concentration of 5 mg/L in the epilimnion of stratified lakes. 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 2016, 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 20 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.

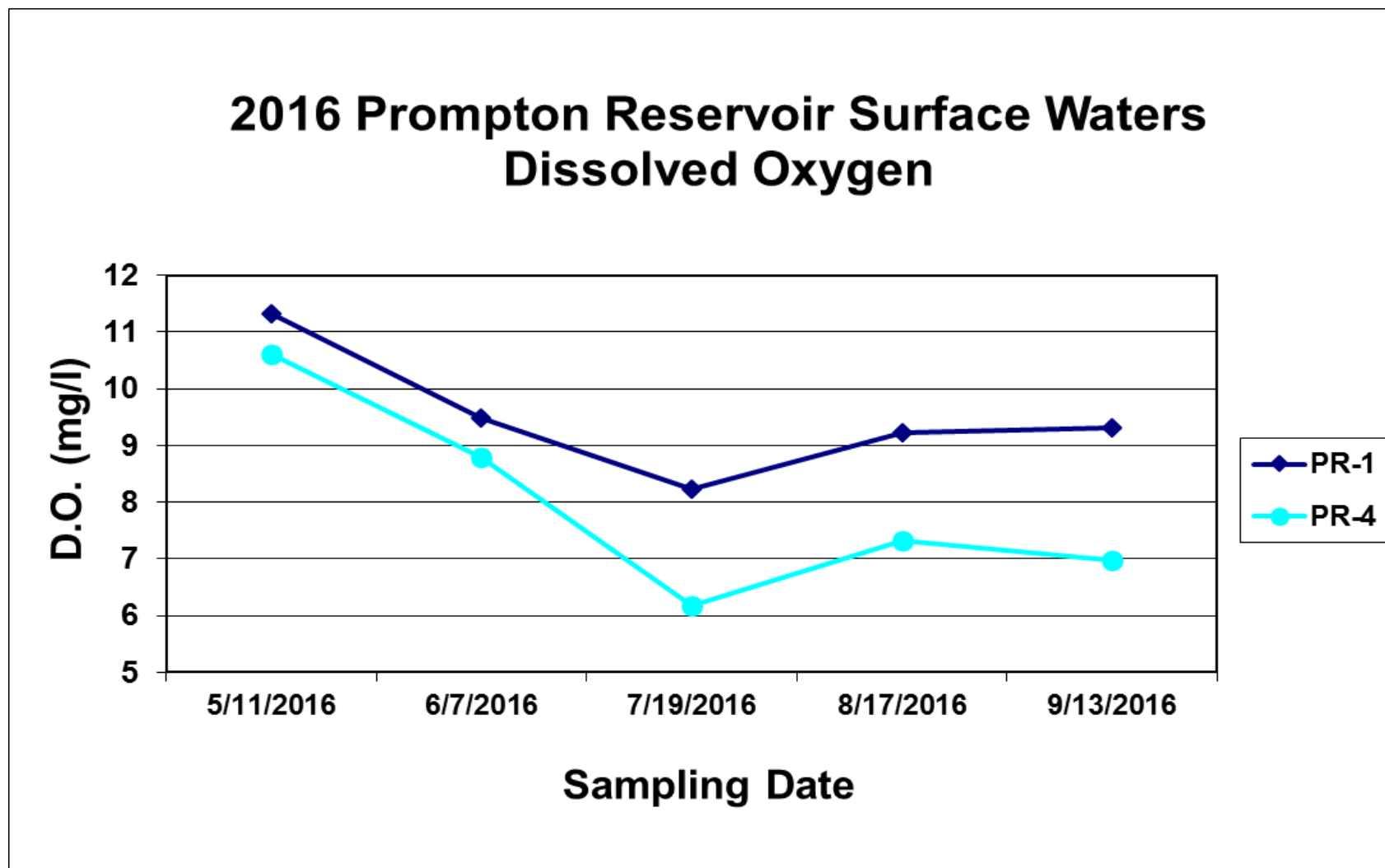


Figure 3-3. Dissolved oxygen in tributary surface waters of Prompton Reservoir during 2016. PADEP minimum DO standard is 5 mg/L. See Appendix A for a summary of plotted values.

3-6

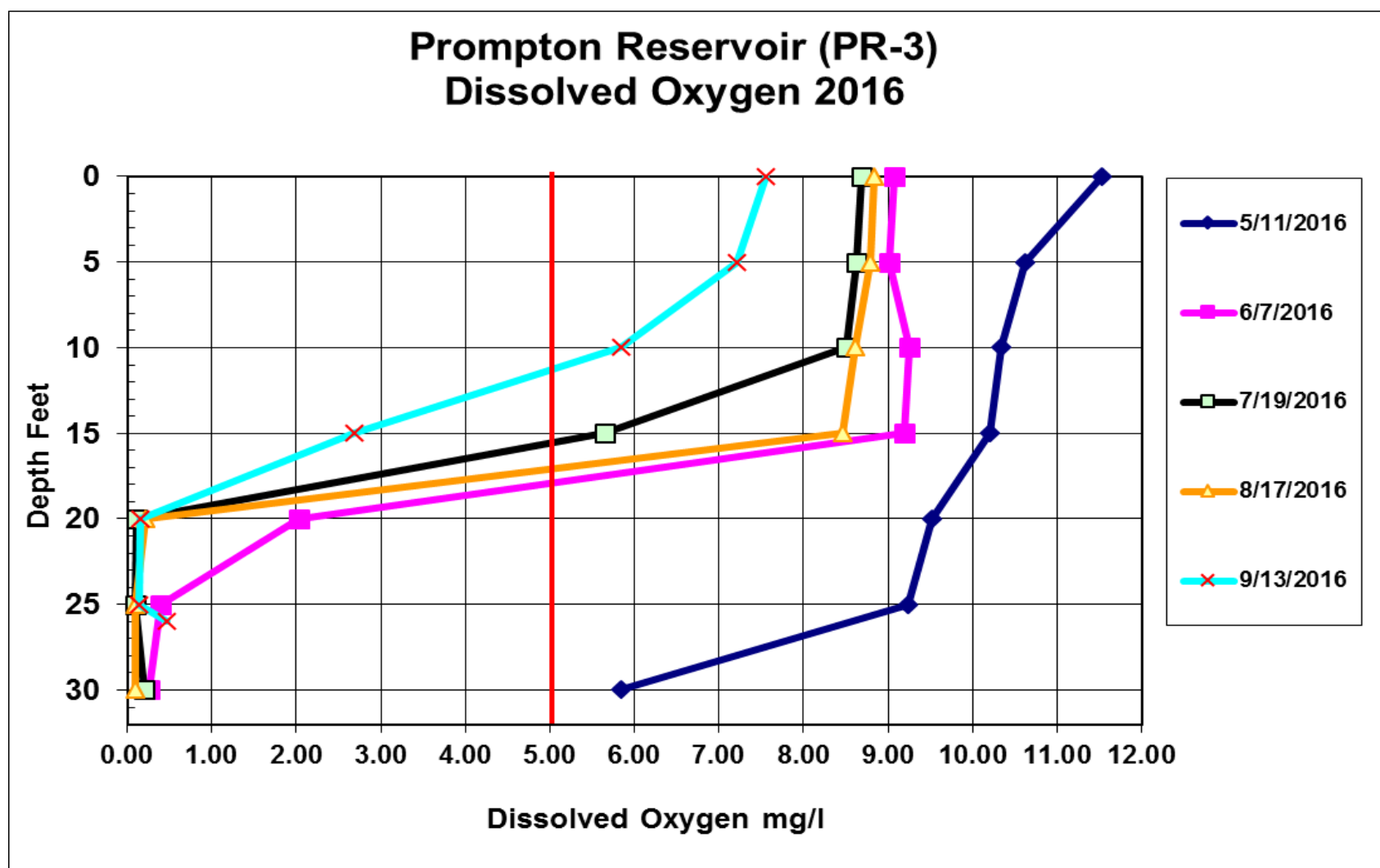


Figure 3-4. Dissolved oxygen stratification of Prompton Reservoir during 2016 from water quality measured at station PR-3. The PADEP minimum DO standard is 5 mg/L. See Appendix A for a summary of plotted value

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 tributary stations PR-1S and PR-4S at Prompton Reservoir ranged from 6.77 in early June to 8.30 in May (Fig. 3-5). The seasonal pH average for PR-1S and PR-4S were 7.93 and 7.17, respectively.

The water column of Prompton Reservoir maintained a relatively stable pH through most of the sampling season in 2016 with higher lake surface water pH seen in July and August (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 9.31 and the bottom waters had a reading of 7.13. 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 2016. The water quality standard for pH is a range of acceptability from 6 to 9. Near surface water readings in July and August exceeded the pH 9.0 criteria.

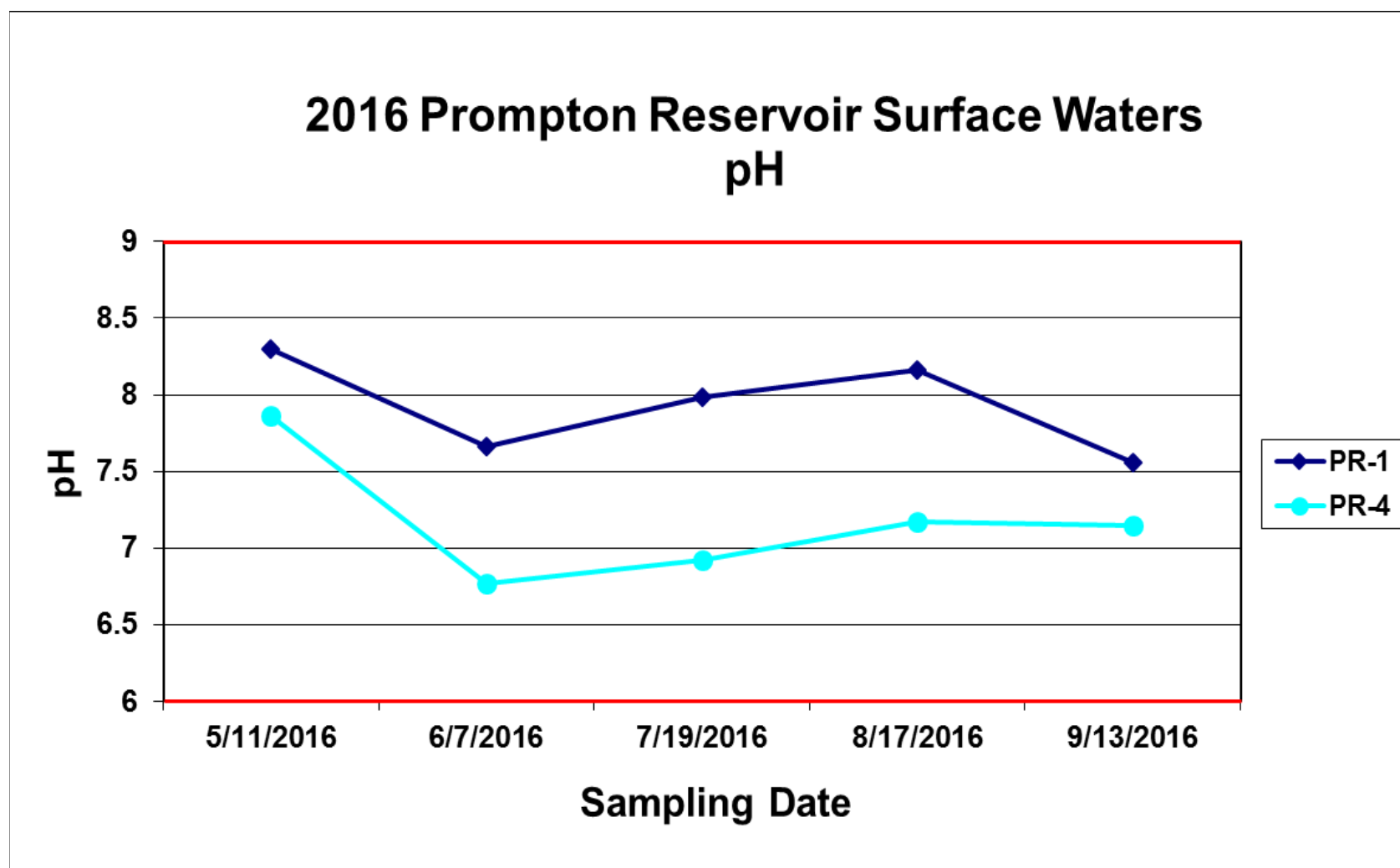


Figure 3-5. Measures of pH in tributary and outflow surface waters of Prompton Reservoir during 2016. PADEP minimum and maximum pH standards are 6 and 9, respectively. See Appendix A for a summary of plotted values.

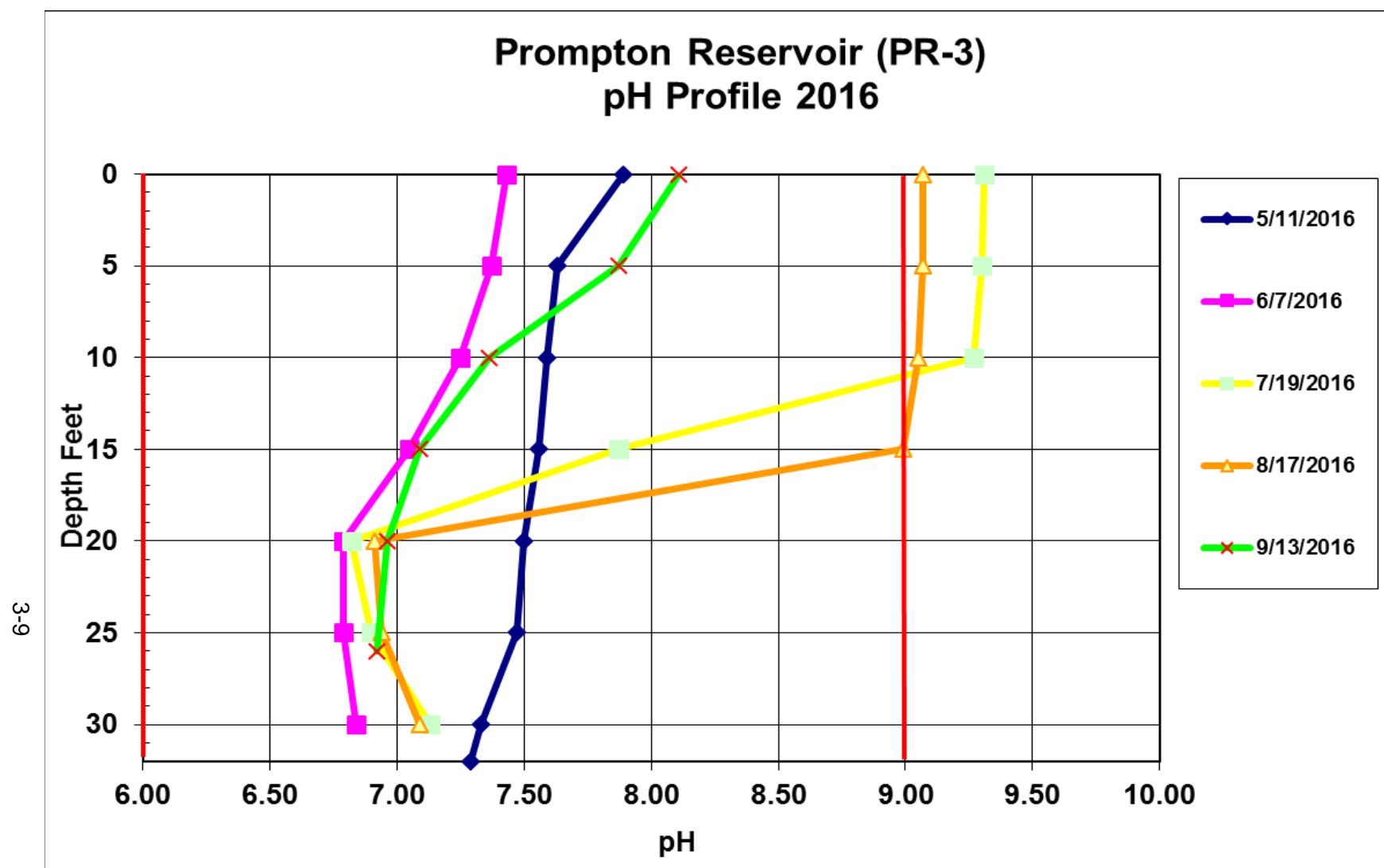


Figure 3-6. Stratification of pH at Prompton Reservoir during 2016, from water quality measured at station PR-3. PADEP minimum and maximum pH standards are 6 and 9, respectively. See Appendix A for a summary of plotted values.

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 2016 (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 low during 2016 (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 (4.72 mg/L) 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 1.28 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 early June through September of 2016 resulting in elevated levels of Ammonia in the deeper areas of the reservoir. In 2016, 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 2016

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-1S	5/11/2016	17	<2	<.05	<.05	<.05	0.09	<.01	34	0.32	2.5	0.01	<3
	6/7/2016	23	<2	<.05	<.05	<.05	0.24	0.02	57	0.57	3.8	0.02	<3
	7/19/2016	274	<2	<.05	<.05	<.05	0.1	0.01	53	0.42	3.2	0.01	<3
	8/17/2016	30	<2	<.05	<.05	<.05	0.09	0.01	71	0.35	3.7	<.01	<3
	9/13/2016	32	<2	0.06	<.05	<.05	0.08	<.01	69	<.25	1.7	0.07	5
	Mean	75.2	2	0.05	0.050	0.05	0.12	0.01	57	0.38	3.0	0.02	3.4
	Stdev	111.3	0	0.004	0	0	0.07	0.004	15	0.12	0.9	0.03	0.9
	Max	274	2	0.06	0.05	0.05	0.24	0.02	71	0.57	3.8	0.07	5
	Min	17	2	0.05	0.05	0.05	0.08	0.01	34	0.25	1.7	0.01	3
	No. of Det	5	0	1	0	0	5	3	5	4	5	4	1
PR-2S	5/11/2016	15	4	<.05	<.05	<.05	<.05	<.01	34	0.73	3.9	0.03	4
	6/7/2016	19	<2	0.09	<.05	<.05	<.05	0.01	54	0.5	3.5	0.09	<3
	7/19/2016	56	4	<.05	<.05	<.05	<.05	0.01	49	0.74	3.6	0.01	5
	8/17/2016	26	<2	<.05	<.05	<.05	<.05	0.02	58	0.53	3.9	<.01	3
	9/13/2016	29	3	<.05	<.05	<.05	<.05	<.01	69	0.74	3.8	<.01	6
	Mean	29	3	0.06	0.05	0.05	0.05	0.01	53	0.65	3.7	0.03	4
	Stdev	16	1	0.02	0	0	0	0.004	13	0.12	0.2	0.03	1
	Max	56	4	0.09	0.05	0.05	0.05	0.02	69	0.74	3.9	0.09	6
	Min	15	2	0.05	0.05	0.05	0.05	0.01	34	0.5	3.5	0.01	3
	No. of Det	5	3	1	0	0	0	3	5	5	5	3	4

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2016

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-2M	5/11/2016	15	<2	<.05	<.05	<.05	0.06	<.01	34	0.36	3.3	<.01	28
	6/7/2016	23	<2	<.05	<.05	<.05	0.14	0.02	54	0.54	3.2	0.03	<3
	7/19/2016	46	3	<.05	<.05	<.05	<.05	0.01	44	0.67	3.4	0.02	4
	8/17/2016	27	<2	<.05	0.08	<.05	<.05	0.02	53	0.44	3.4	<.01	<3
	9/13/2016	29	3	<.05	<.05	<.05	<.05	<.01	57	0.62	3.5	0.04	7
	Mean	28	2	0.05	0.06	0.05	0.07	0.01	48	0.53	3.4	0.02	9
	Stdev	11	1	0	0.01	0	0.04	0.01	9	0.13	0.1	0.01	11
	Max	46	3	0.05	0.08	0.05	0.14	0.02	57	0.67	3.5	0.04	28
	Min	15	2	0.05	0.05	0.05	0.05	0.01	34	0.36	3.2	0.01	3
	No. of Det	5	2	0	1	0	2	3	5	5	5	3	3
PR-2B	5/11/2016	17	<2	<.05	<.05	<.05	0.08	<.01	55	0.38	3	<.01	<3
	6/7/2016	23	<2	<.05	0.14	<.05	0.05	0.03	51	0.92	3.3	0.03	28
	7/19/2016	48	<2	<.05	0.15	<.05	<.05	<.01	76	0.66	3.5	0.02	<3
	8/17/2016	31	<2	0.08	0.22	<.05	<.05	0.04	72	1.44	5.2	0.25	21
	9/13/2016	30	<2	0.06	0.08	<.05	<.05	0.02	77	0.71	2.7	0.06	139
	Mean	30	2	0.06	0.13	0.05	0.06	0.02	66	0.82	3.5	0.07	39
	Stdev	12	0	0.01	0.07	0	0.01	0.01	12	0.40	1.0	0.10	57
	Max	48	2	0.08	0.22	0.05	0.08	0.04	77	1.44	5.2	0.25	139
	Min	17	2	0.05	0.05	0.05	0.05	0.01	51	0.38	2.7	0.01	3
	No. of Det	5	0	2	4	0	2	3	5	5	5	4	3

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2016

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-3S	5/11/2016	15	<2	<.05	<.05	<.05	<.05	<.01	50	0.48	3.4	<.01	<3
	6/7/2016	18	<2	<.05	<.05	<.05	<.05	0.03	52	0.45	2.8	0.04	<3
	7/19/2016	54	3	<.05	<.05	<.05	<.05	0.01	35	0.67	3.5	<.01	4
	8/17/2016	26	2	<.05	<.05	<.05	<.05	0.01	68	0.54	4	<.01	3
	9/13/2016	29	2	<.05	<.05	<.05	<.05	<.01	74	0.54	4.5	<.01	5
	Mean	28	2.2	0.05	0.05	0.05	0.05	0.014	56	0.54	3.6	0.02	4
	Stdev	15	0.4	0	0	0	0	0.009	15	0.08	0.6	0.01	1
	Max	54	3	0.05	0.05	0.05	0.05	0.03	74	0.67	4.5	0.04	5
	Min	15	2	0.05	0.05	0.05	0.05	0.01	35	0.45	2.8	0.01	3
	No. of Det	5	3	0	0	0	0	3	5	5	5	1	3
PR-3M	5/11/2016	14	<2	0.05	<.05	<.05	0.05	<.01	47	0.43	3.1	0.06	<3
	6/7/2016	18	<2	<.05	<.05	<.05	<.05	0.03	41	0.44	2.8	0.05	<3
	7/19/2016	41	3	<.05	<.05	<.05	<.05	0.02	54	0.6	3.3	<.01	4
	8/17/2016	25	<2	<.05	<.05	<.05	<.05	<.01	65	0.57	3.8	<.01	5
	9/13/2016	29	<2	<.05	<.05	<.05	<.05	<.01	73	0.5	3.5	<.01	3
	Mean	25	2.2	0.05	0.05	0.05	0.050	0.016	56	0.51	3.3	0.03	4
	Stdev	11	0.4	0	0	0	0	0.009	13	0.08	0.4	0.02	1
	Max	41	3	0.05	0.05	0.05	0.05	0.03	73	0.6	3.8	0.06	5
	Min	14	2	0.05	0.05	0.05	0.05	0.01	41	0.43	2.8	0.01	3
	No. of Det	5	1	1	0	0	1	2	5	5	5	2	3

Table 3-2 continued. Summary of surface, middle, and bottom water quality monitoring data for Prompton Reservoir in 2016

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-3B	5/11/2016	16	<2	<.05	<.05	<.05	0.06	<.01	47	0.49	3	0.02	24
	6/7/2016	21	<2	<.05	<.05	<.05	<.05	0.03	61	0.58	3.1	0.03	4
	7/19/2016	53	3	<.05	0.62	<.05	<.05	0.02	68	1.24	4.4	0.06	68
	8/17/2016	51	6	0.06	0.94	<.05	<.05	0.01	84	1.58	5.5	0.13	6
	9/13/2016	102	29	0.8	4.72	<.05	<.05	0.6	155	6.58	14.3	0.85	69
	Mean	49	8	0.20	1.28	0.05	0.05	0.13	83	2.09	6.1	0.22	34
	Stdev	34	12	0.33	1.96	0	0.004	0.26	42	2.55	4.7	0.36	32
	Max	102	29	0.8	4.72	0.05	0.06	0.6	155	6.58	14.3	0.85	69
	Min	16	2	0.05	0.05	0.05	0.05	0.01	47	0.49	3	0.02	4
	No. of Det	5	3	2	3	0	1	4	5	5	5	5	5
PR-4S	5/11/2016	16	2	<.05	<.05	<.05	<.05	<.01	42	0.48	3.3	0.03	15
	6/7/2016	18	<2	<.05	0.52	<.05	0.05	0.01	19	1.14	2.8	0.01	27
	7/19/2016	62	2	<.05	0.08	<.05	0.13	<.01	47	0.52	3.8	<.01	7
	8/17/2016	26	<2	0.25	<.05	<.05	<.05	0.01	63	0.81	4.5	0.28	3
	9/13/2016	28	<2	<.05	<.05	<.05	<.05	0.02	37	0.37	3.6	<.01	<3
	Mean	30	2	0.09	0.15	0.05	0.07	0.012	42	0.66	3.6	0.07	11
	Stdev	19	0	0.09	0.21	0	0.04	0.004	16	0.31	0.6	0.12	10
	Max	62	2	0.25	0.52	0.05	0.13	0.02	63	1.14	4.5	0.28	27
	Min	16	2	0.05	0.05	0.05	0.05	0.01	19	0.37	2.8	0.01	3
	No. of Det	5	2	1	2	0	2	3	5	5	5	3	4

< 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 2016, 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 2016, nitrate concentrations in the lake 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). Higher readings were seen in the lake tributary inflow waters (PR-1s). The maximum nitrate measure of 0.24 mg/L was collected at station PR-1S in early June. This upstream tributary station also maintained the highest seasonal mean concentration of 0.12 mg/L.

Prompton Reservoir was in compliance with the PADEP water quality standard for nitrite and nitrate during 2016. 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 0.29 mg/L was measured at the upstream tributary surface water station PR-1S on 07 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. Total kjeldahl nitrogen was uniformly low in the water column of Prompton Reservoir during 2016 (Table 3-2) although all samples except one were greater than the reporting limit of 0.25 mg/L. The highest single sample concentration of 6.58 mg/L and seasonal mean concentration of 2.09 mg/L were measured in the bottom water sample at station PR-3B.

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 0.85 mg/L was measured in the lake bottom waters at station PR-3B on 13 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. Prompton Reservoir experiences these conditions annually. Lower measurements of TP in lake surface waters are likely a product of algal uptake but still routinely remained greater than the 0.01 mg/L recommended threshold.

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 or slightly exceeding the reporting limit of 0.05 mg/L (Table 3-2). Higher concentrations were seen in the lake bottom water samples in August and September. The highest concentration of dissolved phosphorus (0.25 mg/L) was in the surface water grab sample at Station PR-4S on 17 August.

3.2.6 Dissolved Phosphate

Orthophosphate (PO_4) 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 2016, dissolved phosphate concentrations were low with most measured concentrations below or slightly exceeding the reporting limit of 0.01 mg/L. The highest concentrations were seen during the May sampling event. The highest concentration of 0.04 mg/L was collected in the bottom of the water column at station PR-2B on 17 August.

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 2016. Concentrations measured at all stations and depths ranged from 19 to 155 mg/L throughout the monitoring period (Table 3-2). Total dissolved solids measured at Prompton Reservoir in 2016 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 2016, total suspended solids (TSS)

concentrations at all stations and depths ranged between less than the reporting limit of 3.0 mg/L to 139 mg/L (Table 3-2). The highest single sample measure of 139 mg/L was measured in the bottom waters of station PR-2B on 13 September. 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 13 September 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). Ten 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 29.0 mg/L collected at station PR-3B on 13 September. The next closest sample result of 6 mg/L was also collected at this station. In considering the rarity overall and frequency at one bottom sampling station of higher readings, it is inferred that Prompton Reservoir and its associated tributaries contained moderately clean waters with some biodegradable wastes in 2016.

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 2016 sampling season (Table 3-2). Concentrations measured at all stations and depths during the monitoring period ranged from 14.0 to 274.0 mg/L. The highest measure was taken from the surface tributary waters of the reservoir at station PR-1S on 19 July. In the month of July, a spike in alkalinity readings was seen across all sampling

stations. The reason for this spike was not determined, however it did correlate with recent rain fall events on that sampling date. 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 2016.

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 2016 (Table 3-2). Concentrations of TOC at all stations and depths ranged from 1.7 mg/L to 14.3 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 readings were not collected in the months of May and June as a result of equipment failure. In all other months sampled in 2016, chlorophyll a concentrations in the tributary and outflow stream surface waters were low relative to in-lake concentrations (Appendix A). Concentrations measured in stream surface waters at all stations and dates averaged 0.67 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 0.8 ug/L and 8.7 ug/L with a seasonal average of 3.18 ug/L. The highest concentrations were seen during the September 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 mesotrophic in early June (42.67) and eutrophic in May (52.96), July (54.75), August (56.78) and September (55.68) (Fig. 3-7). TSIs calculated for measures of total phosphorus classified Prompton Reservoir as oligotrophic in early May (37.35), July (37.35), August (37.35), and

September (37.35) and eutrophic in June (57.34). TSI's for chlorophyll *a* were not measured in May and June due to equipment failure. For the remainder of the sampling season, TSI's calculated for measures of chlorophyll *a* classified Prompton Reservoir as oligotrophic in July (35.63) and August (32.63), and mesotrophic in September (40.34). 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 in the mesotrophic range during most of the 2016 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 considered in the mesotrophic range during most of the sampling season.

Table 3-3. EPA trophic classification criteria and monthly measures for Prompton Reservoir in 2016. "EF"- Equipment Failure								
Water Quality Variable	Oligo-trophic	Meso-trophic	Eutrophic	03 June	30 June	22 July	12 August	01 September
Total phos. (ppb)	<10	10-20	>20	<10	40	<10	<10	<10
Chlorophyll (ppb)	<4	4-10	>10	EF	EF	1.67	1.23	2.7
Secchi depth (m)	>4	2-4	<2	1.63	3.33	1.44	1.25	1.35

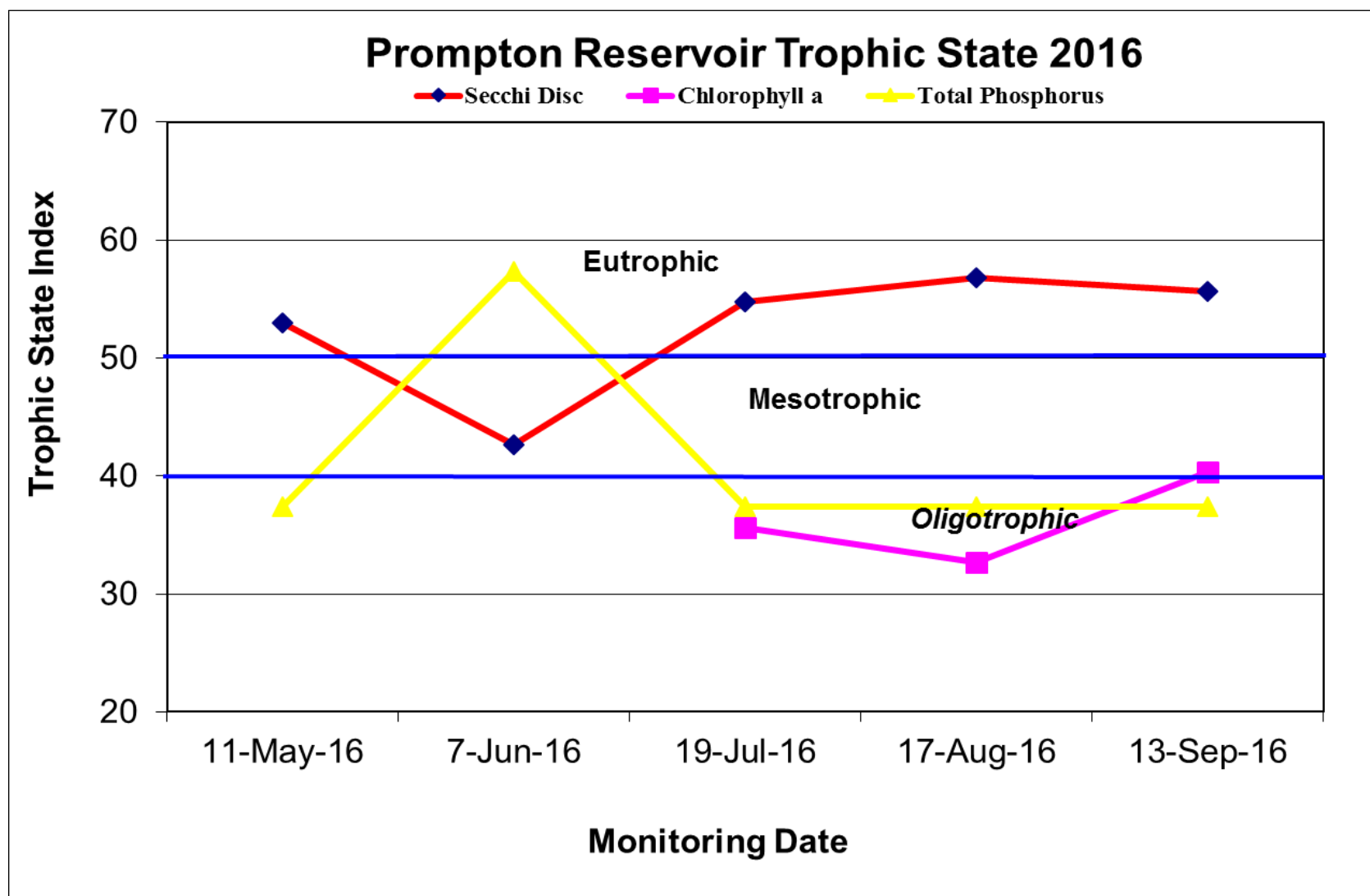


Figure 3-7. Trophic state indices calculated from secchi disk depth, concentrations of chlorophyll *a*, and total phosphorus measured in surface waters of Prompton Reservoir during 2016.

3.4 RESERVOIR BACTERIA MONITORING

Two forms of coliform bacteria contamination were monitored in the tributary and lake surface waters at Prompton Reservoir during 2016 including total and fecal coliform (Table 3-4). Total coliform includes *escherichia coliform* (*E. coli*) and related bacteria that are associated with fecal discharges. 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 2016 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 16 colonies/100-ml. Higher counts were typically measured in the lake tributary and outflow waters. 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 2016. 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. No fecal coliform samples exceeded this standard. Routinely higher readings were seen at the upstream tributary station (PR-1S) and downstream outflow station (PR-4S). The higher upstream readings were not reflected in the reservoir surface water samples within the lake. Water contact recreation is not permitted at Prompton Reservoir.

Table 3-4. Bacteria counts (colonies/100 ml) at Prompton Reservoir during 2016. Shaded values exceed the Pennsylvania Department of Health water quality standard for bathing beaches. NS = Not Sampled in 2016

STATION	DATE		Total Coliform (TC)		Fecal Coliform (FC)		Escherichia coli
PR-1S	5/11/2016		23		2		NS
	6/7/2016	>	2400		160		NS
	7/19/2016	>	2400		24		NS
	8/17/2016	>	2400		730		NS
	9/13/2016		2400		28		NS
PR-2S	5/11/2016		16	<	2		NS
	6/7/2016	>	2400	<	2		NS
	7/19/2016	>	2400		3		NS
	8/17/2016		2000		3		NS
	9/13/2016		490	<	2		NS
PR-3S	5/11/2016		170	<	2		NS
	6/7/2016		1700		20		NS
	7/19/2016		2000	<	2		NS
	8/17/2016	>	2400		5		NS
	9/13/2016		870		2		NS
PR-4S	5/11/2016		31	<	2		NS
	6/7/2016	>	2400		8		NS
	7/19/2016	>	2400		34		NS
	8/17/2016	>	2400		200		NS
	9/13/2016		2400		6		NS

4.0 REFERENCES

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APPENDIX A

STRATIFICATION DATA TABLES

2016 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-1S Upstream	5/11/2016	13:13:07	0.5	12.35	105.9	11.32	8.3	-126	103.8	NA	NA	NA
	6/7/2016	13:10:45	0.5	19.36	103	9.48	7.66	-90.5	125.4	NA	NA	NA
	7/19/2016	13:44:26	0.5	21.44	93	8.22	7.98	-78.3	97.3	2.9	1.2	0.104
	8/17/2016	11:26:22	0.5	21.01	103.5	9.22	8.16	-89	137.9	1.4	0.3	0.098
	9/13/2016	12:45:33	0.5	16.94	96.2	9.31	7.56	-53.7	212.4	0.4	0.2	0.089
PR-2 Mid-Lake	5/11/2016	12:43:05	0.5	15.38	116.7	11.67	8.26	-124	74.2	NA	NA	NA
		12:41:52	5	12.57	108.5	11.54	8.06	-112	74.9	NA	NA	NA
		12:40:56	10	12.19	102.5	10.99	7.9	-103	80.5	NA	NA	NA
		12:39:58	15	11.74	96.3	10.44	7.85	-100	81.4	NA	NA	NA
		12:38:58	20	11.13	96.4	10.59	7.87	-101	73.3	NA	NA	NA
		12:38:07	22	10.62	98.2	10.92	7.89	-103	65.7	NA	NA	NA
PR-2 Mid-Lake	6/7/2016	12:40:23	0.5	24.24	103.4	8.66	7.3	-70.4	102.6	NA	NA	NA
		12:39:26	5	23.75	101.9	8.62	7.24	-66.6	100.5	NA	NA	NA
		12:38:15	10	20.37	80.7	7.28	7.05	-55.5	108.3	NA	NA	NA
		12:36:32	15	17.12	49.9	4.81	6.95	-49.8	108	NA	NA	NA
		12:35:13	20	15.28	19.1	1.91	6.91	-47.8	105.8	NA	NA	NA
PR-2 Mid-Lake	7/19/2016	13:04:23	0.5	26.25	109.3	8.82	9.35	-161	18.7	14.3	3.1	0.095
		13:03:08	5	26	106.7	8.66	9.32	-159	9.1	16.6	4	0.094
		13:01:29	10	22.63	5.8	0.5	6.68	-2.4	3.8	4.9	1.4	0.093
		13:00:04	15	21.7	3.4	0.3	6.72	-5.1	-9	6.8	1.1	0.096
		12:58:02	20	20.59	2.2	0.2	7.11	-27.6	-64.1	7.5	1.7	0.103
PR-2 Mid-Lake	8/17/2016	12:44:34	0.5	26.65	101.7	8.15	8.57	-115	48.5	7.7	3.4	0.097
		12:41:43	5	26.56	95.9	7.7	8.41	-105	27.1	7.2	5.3	0.097
		12:40:34	10	24.63	14.7	1.22	6.8	-9.3	50.6	7.2	0.7	0.097
		12:39:23	15	24	5.3	0.45	6.79	-8.8	29	5.5	1	0.097
		12:38:25	20	22.8	3.9	0.34	6.88	-14.2	2	3.9	1.4	0.104
PR-2 Mid-Lake	9/13/2016	14:07:31	0.5	24.5	101.8	8.49	8.74	-124	79.1	11.2	3	0.095
		14:06:24	5	23.01	93.2	7.99	8.36	-101	83.3	12.1	8.7	0.092
		14:05:32	10	22.67	85.8	7.4	7.7	-62.2	90.7	10.5	6.3	0.091
		14:04:03	15	22.34	60.3	5.24	7.06	-24.8	104.5	15.1	4.1	0.091
		14:02:41	19	20.29	57.4	5.19	6.86	-12.9	109.5	39.7	1.9	0.094

2016 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 1.63 m	5/11/2016	12:27:51	0.5	15.26	115	11.53	7.89	-103	73.5	NA	NA	NA
		12:26:19	5	12.47	99.6	10.62	7.63	-88	91.2	NA	NA	NA
		12:25:34	10	11.89	95.7	10.34	7.59	-86	91.9	NA	NA	NA
		12:24:38	15	11.82	94.3	10.2	7.56	-84.1	90.4	NA	NA	NA
		12:23:19	20	11.66	87.7	9.52	7.5	-80.7	87.9	NA	NA	NA
		12:22:33	25	11.63	85	9.24	7.47	-79.1	85.9	NA	NA	NA
		12:20:30	30	10.53	52.4	5.84	7.33	-71.4	78.5	NA	NA	NA
		12:18:50	32	9.71	22	2.5	7.29	-68.6	59.8	NA	NA	NA
PR-3 Upstream of Dam Secchi 3.33 M	6/7/2016	12:24:29	0.5	24.19	108.3	9.08	7.43	-77.7	82.8	NA	NA	NA
		12:23:26	5	23.69	106.4	9.01	7.37	-74.2	81.5	NA	NA	NA
		12:21:58	10	22.38	106.6	9.25	7.25	-67.4	82	NA	NA	NA
		12:20:09	15	18.9	98.9	9.19	7.05	-55.7	84.9	NA	NA	NA
		12:18:13	20	13.95	19.7	2.03	6.79	-40.5	82	NA	NA	NA
		12:16:45	25	11.79	3.6	0.39	6.79	-41.1	61.8	NA	NA	NA
		12:15:09	30	10.98	2.3	0.26	6.84	-43.7	4.8	NA	NA	NA
PR-3 Upstream of Dam Secchi 1.44 M	7/19/2016											
		12:46:34	0.5	26.37	107.8	8.68	9.31	-158	27.5	8.1	1.1	0.095
		12:45:08	5	26.33	107.1	8.63	9.3	-158	23	9.1	2	0.095
		12:43:30	10	26.27	105.4	8.51	9.27	-156	14.3	9.2	1.9	0.094
		12:41:46	15	24.23	67.4	5.65	7.87	-72.9	25.1	32.1	4.4	0.093
		12:39:01	20	19.59	1.2	0.11	6.82	-10.8	-118	1.7	2.4	0.103
		12:37:04	25	14.51	1	0.1	6.9	-15.3	-142	2.2	2.1	0.134
		12:35:11	30	11.58	1.8	0.2	7.13	-28.4	-114	9.6	4.1	0.210
PR-3 Upstream of Dam Secchi 1.25	8/17/2016											
		12:24:40	0.5	26.77	110.3	8.83	9.07	-145	20.6	8.4	0.8	0.097
		12:23:53	5	26.76	109.9	8.79	9.07	-145	16.2	9.5	1	0.097
		12:22:27	10	26.72	107.6	8.61	9.05	-143	1.3	9.5	1.9	0.097
		12:21:34	15	26.67	105.6	8.47	8.99	-140	-15.2	9	1.4	0.097
		12:19:35	20	21.06	2.3	0.21	6.91	-16	-92.6	2.8	2.2	0.108
		12:18:22	25	15.4	1	0.1	6.94	-17.8	-125	23.2	3.4	0.13
		12:16:21	30	12.4	0.9	0.1	7.09	-26.5	-177	202.8	0.5	0.179
PR-3 Upstream of Dam Secchi 1.35	9/13/2016											
		13:44:08	0.5	24.27	90.2	7.55	8.11	-86.6	19.2	13	1.8	0.094
		13:42:15	5	23.07	84.2	7.21	7.87	-72.2	19.9	14.2	3.9	0.092
		13:41:13	10	22.92	68	5.84	7.36	-42.4	28.6	13.5	2.4	0.092
		13:38:32	15	22.59	31.1	2.69	7.09	-26.5	-33.8	10.5	2.1	0.093
		13:37:50	20	20.63	1.7	0.15	6.96	-18.8	-92.1	5.2	1.7	0.111
		13:36:00	26	13.96	1.3	0.14	6.92	-16.8	-116	10.3	3	0.18
PR-4S Dam Outfall												
	5/11/2016	11:31:47	0.5	12.84	100.2	10.6	7.86	-101	163.7	NA	NA	NA
	6/7/2016	11:39:29	0.5	18.26	93.5	8.8	6.77	-39.3	213.1	NA	NA	NA
	7/19/2016	11:55:37	0.5	21.67	70.2	6.18	6.92	-16.4	191.3	1.9	0.7	0.091
	8/17/2016	11:15:09	0.5	24.45	87.8	7.33	7.17	-31.5	134.3	5.8	0.9	0.093
	9/13/2016	12:31:56	0.5	22.89	81.1	6.97	7.15	-30.3	189.7	6.6	0.7	0.093

APPENDIX B

LABORATORY CUSTODY SHEETS

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016761

Date Collected: 05/11/16 13:20
Collected By: Client

Sample Desc: PR-1 Surface

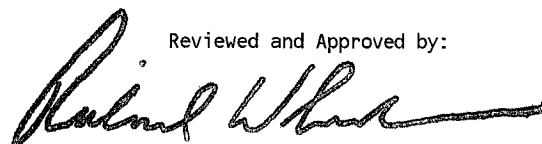
Date Received: 05/11/16 16:40

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100ml	2	1	SM 9222D	05/11	17:13	TNS
Total Coliform	23	mpn/100ml	1	1	SM 9223B	05/12	11:45	KAW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:30	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	19:49	JCL
Nitrogen, Nitrate	0.09	mg/L	.05	1	EPA 353.2	05/12	17:25	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	15:56	JCL
Nitrogen, Total Kjeldahl	0.32	mg/L	.25	1	EPA 351.2	05/18	16:59	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	2.5	mg/L	1	1	SM5310 C	05/13	20:28	ALD
RESIDUES								
Solids, Total Dissolved	34	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	17	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016761

Date Collected: 05/11/16 13:20
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 05/11/16 16:40

PWSID: 3130843

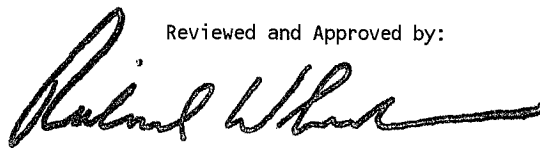
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/11/2016 at 17:35.
- 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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Gregory Wacik - USACE (Beltzville Dam)

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016762

Date Collected: 05/11/16 12:50
Collected By: Client

Sample Desc: PR-2 Surface

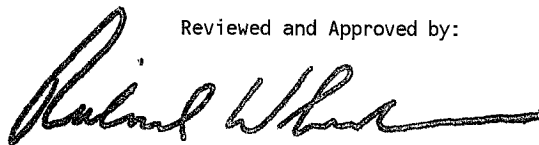
Date Received: 05/11/16 16:40

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	05/11	17:13	TNS
Total Coliform	16	mpn/100ml	1	1	SM 9223B	05/12	11:45	KAW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:30	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	20:47	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	05/12	17:26	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	15:57	JCL
Nitrogen, Total Kjeldahl	0.73	mg/L	.25	1	EPA 351.2	05/18	16:59	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.9	mg/L	1	1	SM5310 C	05/13	21:16	ALD
RESIDUES								
Solids, Total Dissolved	34	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	15	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

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M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016762

Date Collected: 05/11/16 12:50
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 05/11/16 16:40

PWSID: 3130843

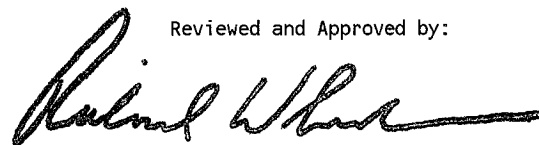
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/11/2016 at 17:35.
- 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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1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016763

Date Collected: 05/11/16 12:50
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 05/11/16 16:40

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	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:30	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	21:02	JCL
Nitrogen, Nitrate	0.06	mg/L	.05	1	EPA 353.2	05/12	17:27	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	15:58	JCL
Nitrogen, Total Kjeldahl	0.36	mg/L	.25	1	EPA 351.2	05/18	17:00	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	05/13	21:29	ALD
RESIDUES								
Solids, Total Dissolved	34	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	28	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	15	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

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: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016764

Date Collected: 05/11/16 12:50
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 05/11/16 16:40

PWSID: 3130843

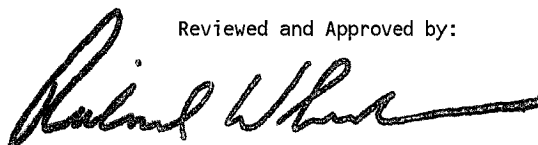
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:30	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	21:16	JCL
Nitrogen, Nitrate	0.08	mg/L	.05	1	EPA 353.2	05/12	17:30	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	16:01	JCL
Nitrogen, Total Kjeldahl	0.38	mg/L	.25	1	EPA 351.2	05/18	17:01	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	05/13	21:54	ALD
RESIDUES								
Solids, Total Dissolved	55	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	17	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

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:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016765

Date Collected: 05/11/16 12:20
Collected By: Client

Sample Desc: PR-3 Surface

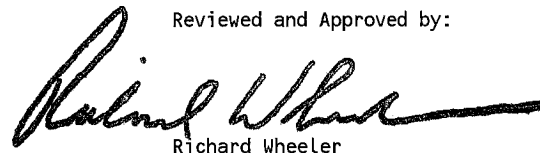
Date Received: 05/11/16 16:40

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	05/11	17:13	TNS
Total Coliform	170	mpn/100mL	1	1	SM 9223B	05/12	11:45	KAW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:30	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	21:31	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	05/12	17:31	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	16:02	JCL
Nitrogen, Total Kjeldahl	0.48	mg/L	.25	1	EPA 351.2	05/18	17:02	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.4	mg/L	1	1	SM5310 C	05/13	22:30	ALD
RESIDUES								
Solids, Total Dissolved	50	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	15	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016765

Date Collected: 05/11/16 12:20
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 05/11/16 16:40

PWSID: 3130843

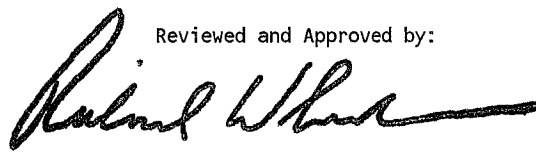
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 05/11/2016 at 17:35.
- 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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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ACIL Seal of Excellence

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016766

Date Collected: 05/11/16 12:20
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 05/11/16 16:40

PWSID: 3130843

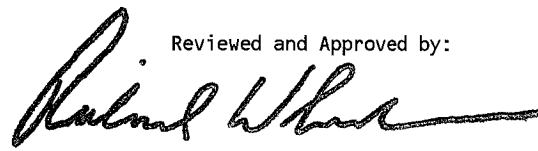
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	0.05	mg/L	.05	1	SM 4500P-E	05/12	17:30	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	21:46	JCL
Nitrogen, Nitrate	0.05	mg/L	.05	1	EPA 353.2	05/12	17:32	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	16:03	JCL
Nitrogen, Total Kjeldahl	0.43	mg/L	.25	1	EPA 351.2	05/18	17:03	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.1	mg/L	1	1	SM5310 C	05/13	22:42	ALD
RESIDUES								
Solids, Total Dissolved	47	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	14	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016767

Date Collected: 05/11/16 12:20
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 05/11/16 16:40

PWSID: 3130843

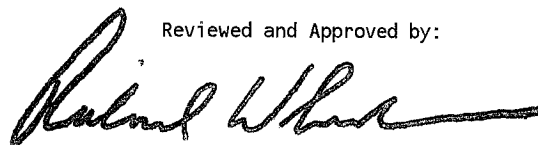
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:35	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	22:00	JCL
Nitrogen, Nitrate	0.06	mg/L	.05	1	EPA 353.2	05/12	17:33	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	16:04	JCL
Nitrogen, Total Kjeldahl	0.49	mg/L	.25	1	EPA 351.2	05/18	17:04	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.0	mg/L	1	1	SM5310 C	05/13	22:54	ALD
RESIDUES								
Solids, Total Dissolved	47	mg/L	5	1	SM 2540C	05/13	13:30	TMH
Solids, Total Suspended	24	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	16	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

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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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016768

Date Collected: 05/11/16 11:30
Collected By: Client

Sample Desc: PR-4 Surface

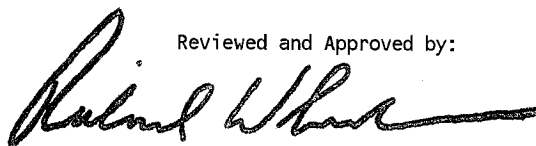
Date Received: 05/11/16 16:40

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	05/11	17:25	TNS
Total Coliform	31	mpn/100ml	1	1	SM 9223B	05/12	11:45	KAW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	05/12	09:55	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	05/12	17:35	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	05/12	17:50	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	05/12	22:15	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	05/12	17:36	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	05/12	16:06	JCL
Nitrogen, Total Kjeldahl	0.48	mg/L	.25	1	EPA 351.2	05/18	17:07	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	05/12	11:45	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	05/13	23:07	ALD
RESIDUES								
Solids, Total Dissolved	42	mg/L	5	1	SM 2540C	05/13	13:50	TMH
Solids, Total Suspended	15	mg/L	3	1	SM 2540D	05/13	13:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	16	mg/L	1	1	SM 2320 B	05/16	12:05	AEH

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Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 05/24/16
Lab ID: 3157-16-0016768

Date Collected: 05/11/16 11:30
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 05/11/16 16:40

PWSID: 3130843

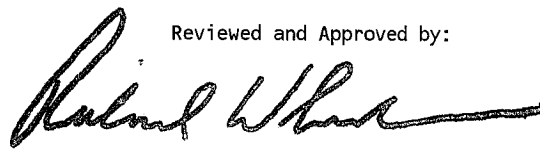
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.
- 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.
- 03 The total coliform sample was placed in the incubator on 05/11/2016 at 17:35.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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nag
05/11/16 4:59:59 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers: WACOK

Project Leader: rxw No: 275238

Remarks:

Total Sampling Time (hours):

Bottle Prep by:

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

16761 Sample No: 1 Desc: PR-1 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc,
TNS

16762 Sample No: 2 Desc: PR-2 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc,
TNS

16763 Sample No: 3 Desc: PR-2 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc,
TNS

Matrix: O Date: 5/11/16
Time: 1320
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: O Date: 5/11/16
Time: 1250
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: O Date: 5/11/16
Time: 1250
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

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

Received for laboratory by: [Signature]

Date: 5/11/16 Time: 1130

Date: 5/11/16 Time: 1515

Date: 5/11/16 Time: 1640

Sample entered by: OSM

nag
05/11/16 4:59:59 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 2

Chain of Custody

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers: WACIK

Project Leader: rxw
No: 275238

Remarks:

Total Sampling Time (hours):

Bottle Prep by:

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

Approved By: RES

16764 Sample No: 4 Desc: PR-2 Deep
nh3-n, tkm, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
fc, tc, NA

16765 Sample No: 5 Desc: PR-3 Surface
nh3-n, tkm, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
fc, tc, NA

16766 Sample No: 6 Desc: PR-3 Mid-Depth
nh3-n, tkm, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
fc, tc, NA

Matrix: o Date: 5/11/16
Time: 1250
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by: [Signature]

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 5/11/16

Time: 1130

5/11/16 1515

Date: 5/11/16

Time: 1640

Sample entered by: oym

nag
05/11/16 4:59:59 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 3

Chain of Custody

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltsville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

WACIK

Total Sampling Time (hours):

Bottle Prep by:

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

Approved By: RGS

Sample No: 7 Desc: PR-3 Deep
nh3-n, tkm, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc, TNS

Sample No: 8 Desc: PR-4 Surface
nh3-n, tkm, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc, TNS

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 5/11/16
Time: 1130
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 5/11/16 Time: 1130

Received for laboratory by: [Signature]
Date: 5/11/16 Time: 1640

Sample entered by: OSM

Account: 3157 Work Order: 006225 Project Leader: rxw No: 274495

Customer: David Wertz Work Order Description: Prompton Reservoir

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers: WACIK

Chain of Custody

Remarks:

Total Sampling Time (hours): Bottle Prep by:

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

Sample No: 1 Desc: PR-1 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc,
Sample No: 2 Desc: PR-2 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, tc,
Sample No: 3 Desc: PR-2 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,

Matrix: o Date: 5/11/16
Time: 1250
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 5/11/16
Time: 1250
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature]
Date: 5/11/16 Time: 1530

Received by: _____
Date: _____ Time: _____

Sample entered by: _____

ixw

04/26/16 12:24:25 PM

M. J. REIDER ASSOCIATES, INC.

COFC.
Page:

Chain of Custody

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

No: 274495

Project Leader: rxw

Phone: 703-387-5516 Ext: 2
Samplers: WACIK

Remarks:

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

Sample No: 4 Desc: PR-2 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,

Sample No: 5 Desc: PR-3 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,

Sample No: 6 Desc: PR-3 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by: [Signature]
Date: 5/11/16 Time: 1530

Received for laboratory by:
Date: Time:

Sample entered by:

rxw
04/26/16 12:24:25 PM

M. J. REIDER ASSOCIATES, INC.

COFC.
Page:

Chain of Custody

Account: 3157 Work Order: 006225

Project Leader: rxw

No: 274495

Customer: David Wertz

Work Order Description: Prompton Reservoir

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Remarks:

Phone: 703-387-5516 Ext:

Total Sampling Time (hours):

Bottle Prep by:

Samplers: WACIK

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

16767

Sample No: 7 Desc: PR-3 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,

16768

Sample No: 8 Desc: PR-4 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,

fc, tc,

Matrix: o Date: 5/11/16
Time: 1220
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 5/11/16
Time: 1150
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: _____

Received for laboratory by: _____

Date: 5/11/16 Time: 1530

Date: _____ Time: _____

Sample entered by: _____

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018023

Date Collected: 06/07/16 13:00
Collected By: Client

Sample Desc: PR-1 Surface

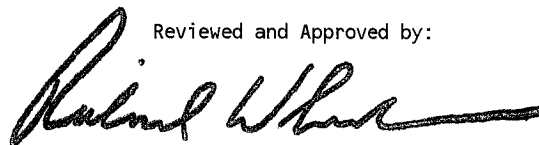
Date Received: 06/07/16 16:30

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
MICROBIOLOGY								
Fecal Coliform	160	/100ml	2	1	SM 9222D	06/07	17:05	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	06/08	11:25	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	16:55	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	06/08	17:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/08	22:11	JCL
Nitrogen, Nitrate	0.24	mg/L	.05	1	EPA 353.2	06/08	16:10	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:32	JCL
Nitrogen, Total Kjeldahl	0.57	mg/L	.25	1	EPA 351.2	06/16	17:41	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	3.8	mg/L	1	1	SM5310 C	06/10	01:36	HRG
RESIDUES								
Solids, Total Dissolved	57	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018023

Date Collected: 06/07/16 13:00
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 06/07/16 16:30

PWSID: 3130843

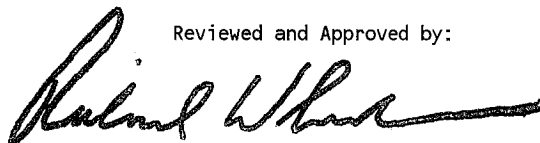
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/07/2016 at 17:00.
- 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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018024

Date Collected: 06/07/16 12:30
Collected By: Client

Sample Desc: PR-2 Surface

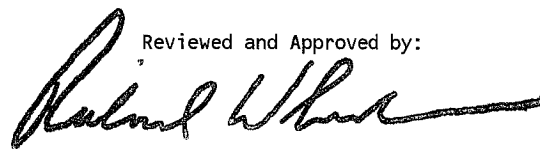
Date Received: 06/07/16 16:30

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	06/07	17:05	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	06/08	11:25	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	0.09	mg/L	.05	1	SM 4500P-E	06/08	16:55	AEH
Phosphorus as P, Total	0.09	mg/L	.01	1	SM 4500P-E	06/08	17:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/08	22:26	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/08	16:11	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:33	JCL
Nitrogen, Total Kjeldahl	0.50	mg/L	.25	1	EPA 351.2	06/16	17:42	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	3.5	mg/L	1	1	SM5310 C	06/10	01:48	HRG
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	19	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

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Reviewed and Approved by:



Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018024

Date Collected: 06/07/16 12:30
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 06/07/16 16:30

PWSID: 3130843

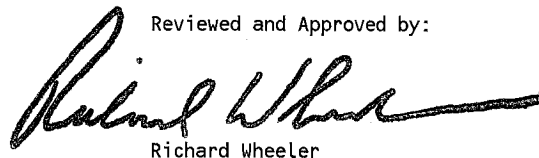
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/07/2016 at 17:00.
- 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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Gregory Wacik - USACE (Beltzville Dam)

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Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018025

Date Collected: 06/07/16 12:30
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 06/07/16 16:30

PWSID: 3130843

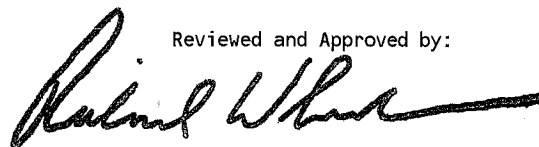
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	16:55	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	06/08	17:20	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/08	22:40	JCL
Nitrogen, Nitrate	0.14	mg/L	.05	1	EPA 353.2	06/08	16:14	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:34	JCL
Nitrogen, Total Kjeldahl	0.54	mg/L	.25	1	EPA 351.2	06/16	17:43	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	06/10	02:00	HRG
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

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:



Richard Wheeler

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M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 06/21/16
 Lab ID: 3157-16-0018026

Date Collected: 06/07/16 12:30
 Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 06/07/16 16:30

PWSID: 3130843

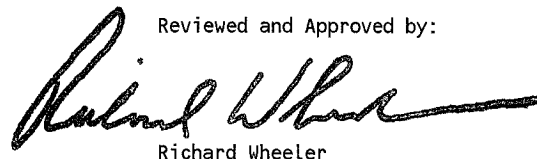
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	16:55	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	06/08	17:25	AEH
NITROGENS								
Nitrogen, Ammonia	0.14	mg/L	.05	1	D6919-03	06/08	22:55	JCL
Nitrogen, Nitrate	0.05	mg/L	.05	1	EPA 353.2	06/08	16:15	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:37	JCL
Nitrogen, Total Kjeldahl	0.92	mg/L	.25	1	EPA 351.2	06/16	17:44	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	06/10	02:13	HRG
RESIDUES								
Solids, Total Dissolved	51	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	28	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	23	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

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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Reviewed and Approved by:


 Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018027

Date Collected: 06/07/16 12:10
Collected By: Client

Sample Desc: PR-3 Surface

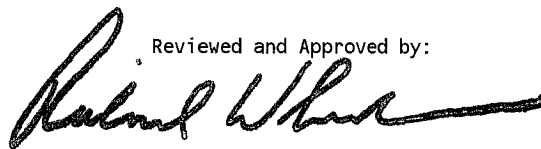
Date Received: 06/07/16 16:30

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	20	/100ml	2	1	SM 9222D	06/07	17:17	TNS
Total Coliform	1700	mpn/100ml	1	1	SM 9223B	06/08	11:25	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	16:55	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	06/08	17:25	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/08	23:10	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/08	16:16	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:38	JCL
Nitrogen, Total Kjeldahl	0.45	mg/L	.25	1	EPA 351.2	06/16	17:47	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	06/10	02:25	HRG
RESIDUES								
Solids, Total Dissolved	52	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	18	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:



Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018027

Date Collected: 06/07/16 12:10
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 06/07/16 16:30

PWSID: 3130843

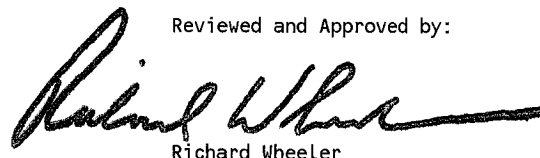
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/07/2016 at 17:00.
- 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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018028

Date Collected: 06/07/16 12:10
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 06/07/16 16:30

PWSID: 3130843

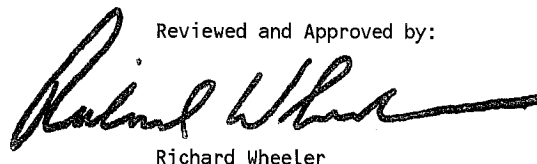
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	16:55	AEH
Phosphorus as P, Total	0.05	mg/L	.01	1	SM 4500P-E	06/08	17:25	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/08	23:24	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/08	16:17	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:39	JCL
Nitrogen, Total Kjeldahl	0.44	mg/L	.25	1	EPA 351.2	06/16	17:48	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	06/10	02:37	HRG
RESIDUES								
Solids, Total Dissolved	41	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	18	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 06/21/16
 Lab ID: 3157-16-0018029

Date Collected: 06/07/16 12:10
 Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 06/07/16 16:30

PWSID: 3130843

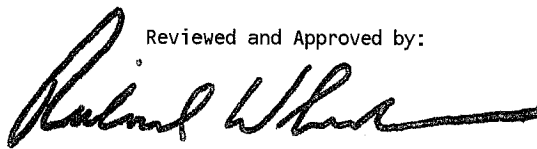
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.03	mg/L	.01	1	SM 4500P-E	06/08	14:30	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	17:00	AEH
Phosphorus as P, Total	0.03	mg/L	.01	1	SM 4500P-E	06/08	17:25	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	06/08	23:39	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	06/08	16:18	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:40	JCL
Nitrogen, Total Kjeldahl	0.58	mg/L	.25	1	EPA 351.2	06/16	17:49	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	3.1	mg/L	1	1	SM5310 C	06/10	02:49	HRG
RESIDUES								
Solids, Total Dissolved	61	mg/L	5	1	SM 2540C	06/10	12:45	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	21	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

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:
 Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


 Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018030

Date Collected: 06/07/16 11:20
Collected By: Client

Sample Desc: PR-4 Surface

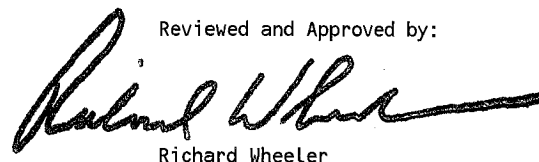
Date Received: 06/07/16 16:30

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	8	/100mL	2	1	SM 9222D	06/07	17:17	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	06/08	11:25	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	06/08	14:40	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	06/08	17:00	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	06/08	17:25	AEH
NITROGENS								
Nitrogen, Ammonia	0.52	mg/L	.05	1	D6919-03	06/09	00:37	JCL
Nitrogen, Nitrate	0.05	mg/L	.05	1	EPA 353.2	06/08	16:20	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	06/08	14:43	JCL
Nitrogen, Total Kjeldahl	1.14	mg/L	.25	1	EPA 351.2	06/16	17:50	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	06/08	13:15	EMW
Total Organic Carbon	2.8	mg/L	1	1	SM5310 C	06/13	11:12	ALD
RESIDUES								
Solids, Total Dissolved	19	mg/L	5	1	SM 2540C	06/10	13:15	TMH
Solids, Total Suspended	27	mg/L	3	1	SM 2540D	06/10	12:45	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	18	mg/L	1	1	SM 2320 B	06/17	13:30	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 06/21/16
Lab ID: 3157-16-0018030

Date Collected: 06/07/16 11:20
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 06/07/16 16:30

PWSID: 3130843

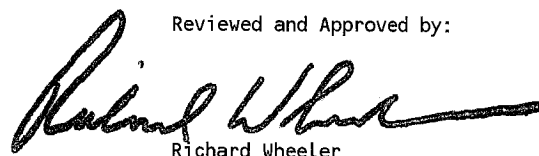
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The total coliform sample was placed in the incubator on 06/07/2016 at 17:00.
- 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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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rxw
05/10/16 10:57:26 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Chain of Custody

Account: 3157 Work Order: 006225

Project Leader: rxw

No: 275162

Customer: David Wertz

Work Order Description: Prompton Reservoir

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Remarks:

Phone: 703-387-5516 Ext:

Total Sampling Time (hours):

Bottle Prep by:

Samplers:

Laboratory Receipt Temp: 3 Deg C If Temp Unacceptable, On Ice? Y N
Approved By: RES

18023 Sample No: 1 Desc: PR-1 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod₅

fc, tc, RES

18024 Sample No: 2 Desc: PR-2 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod₅

fc, tc, RES

18025 Sample No: 3 Desc: PR-2 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod₅

Matrix: O Date: 6/7/16
Time: 1300

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: O Date: 6/7/16
Time: 1230

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: O Date: 6/7/16
Time: 1230

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by: [Signature]

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/7/16 Time: 3:00

Date: 6/7/16 Time: 1630

Sample entered by: [Signature]

Chain of Custody

Account: 3157 Work Order: 006225

Project Leader: rxw

No: 275162

Customer: David Wertz

Work Order Description: Prompton Reservoir

Remarks:

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers: WAK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 3 Deg C. If Temp Unacceptable, On Ice? Y

Approved By: RES

18026 Sample No: 4 Desc: PR-2 Deep

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AM

18027 Sample No: 5 Desc: PR-3 Surface

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AM

fc, RES

18028 Sample No: 6 Desc: PR-3 Mid-Depth

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, AM

Matrix: o

Date: 6/7/16

Time: 1230

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o

Date: 6/7/16

Time: 1210

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o

Date: 6/7/16

Time: 1210

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by: [Signature]

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 6/7/16

Time: 3:00

Date: 6/7/16

Time: 1630

Sample entered by: [Signature]

TXW
05/10/16 10:57:27 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 3

Chain of Custody

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

No: 275162

Project Leader: rxw

Remarks:

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

Phone: 703-387-5516 Ext: _____

Samplers: WACIK

Laboratory Receipt Temp: 3 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: RES

Sample No: 7 Desc: PR-3 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
WACIK

Matrix: O Date: 6/7/16
Time: 12:10
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Sample No: 8 Desc: PR-4 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod₅
fc, ttc, *WACIK*

Matrix: O Date: 6/7/16
Time: 11:20
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: [Signature] Received by: [Signature]
Date: 6/7/16 Time: 3:00

Received for Laboratory by: [Signature]
Date: 6/7/16 Time: 1630

Sample entered by: [Signature]

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018945

Date Collected: 07/19/16 13:40
Collected By: Client

Sample Desc: PR-1 Surface

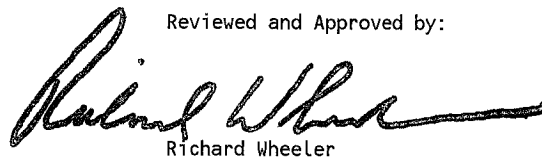
Date Received: 07/19/16 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	24	/100ml	2	1	SM 9222D	07/19	17:40	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/20	12:00	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:35	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/20	16:02	JCL
Nitrogen, Nitrate	0.10	mg/L	.05	1	EPA 353.2	07/20	16:28	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:31	JCL
Nitrogen, Total Kjeldahl	0.42	mg/L	.25	1	EPA 351.2	07/28	15:18	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.2	mg/L	1	1	SM5310 C	07/20	18:58	ALD
RESIDUES								
Solids, Total Dissolved	53	mg/L	5	1	SM 2540C	07/21	13:50	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/21	13:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	274	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018945

Date Collected: 07/19/16 13:40
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 07/19/16 17:15

PWSID: 3130843

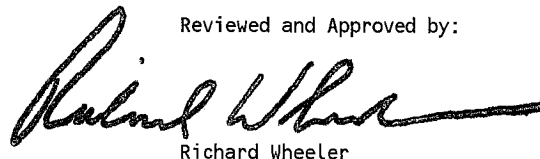
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 07/19/2016 at 17:50.
- 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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018946

Date Collected: 07/19/16 12:55
Collected By: Client

Sample Desc: PR-2 Surface

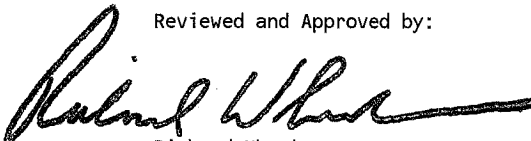
Date Received: 07/19/16 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Fecal Coliform	3	/100mL	2	1	SM 9222D	07/19	17:40	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	07/20	12:00	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:35	AEH
Phosphorus as P, Total	0.01	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/20	16:17	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/20	16:29	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:32	JCL
Nitrogen, Total Kjeldahl	0.74	mg/L	.25	1	EPA 351.2	07/28	15:19	JCL
OTHER								
Biochemical Oxygen Demand	4	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.6	mg/L	1	1	SM5310 C	07/20	19:11	ALD
RESIDUES								
Solids, Total Dissolved	49	mg/L	5	1	SM 2540C	07/21	13:50	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	07/21	13:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	56	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018946

Date Collected: 07/19/16 12:55
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 07/19/16 17:15

PWSID: 3130843

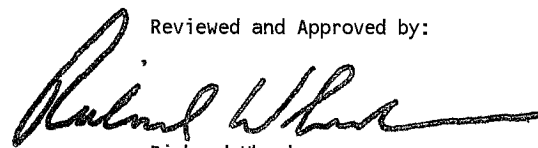
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

COMMENTS

- 01 The total coliform sample was placed in the incubator on 07/19/2016 at 17:50.
- 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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018947

Date Collected: 07/19/16 12:55
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 07/19/16 17:15

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	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:35	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/20	16:32	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/20	14:29	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:33	JCL
Nitrogen, Total Kjeldahl	0.67	mg/L	.25	1	EPA 351.2	07/28	15:20	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.4	mg/L	1	1	SM5310 C	07/20	20:08	ALD
RESIDUES								
Solids, Total Dissolved	44	mg/L	5	1	SM 2540C	07/21	13:50	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/21	13:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	46	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

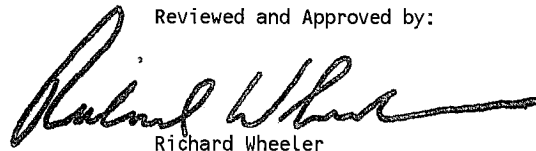
COMMENTS

- 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:

Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018948

Date Collected: 07/19/16 12:55
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 07/19/16 17:15

PWSID: 3130843

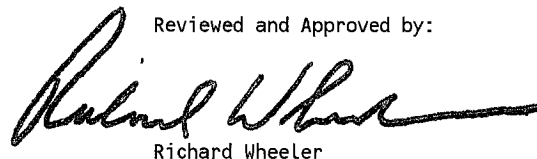
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:35	AEH
Phosphorus as P, Total	0.02	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	0.15	mg/L	.05	1	D6919-03	07/20	16:46	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/20	16:32	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:26	JCL
Nitrogen, Total Kjeldahl	0.66	mg/L	.25	1	EPA 351.2	07/28	15:23	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.5	mg/L	1	1	SM5310 c	07/20	20:21	ALD
RESIDUES								
Solids, Total Dissolved	76	mg/L	5	1	SM 2540C	07/21	13:50	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	07/21	13:50	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	48	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

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:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018949

Date Collected: 07/19/16 12:30
Collected By: Client

Sample Desc: PR-3 Surface

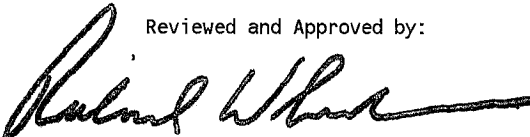
Date Received: 07/19/16 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	07/19	17:55	TNS
Total Coliform	2000	mpn/100ml	1	1	SM 9223B	07/20	12:00	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:35	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/20	17:01	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/20	16:33	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:37	JCL
Nitrogen, Total Kjeldahl	0.67	mg/L	.25	1	EPA 351.2	07/28	15:24	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.5	mg/L	1	1	SM5310 C	07/20	20:33	ALD
RESIDUES								
Solids, Total Dissolved	35	mg/L	5	1	SM 2540C	07/22	13:15	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	54	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

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Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018949

Date Collected: 07/19/16 12:30
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 07/19/16 17:15

PWSID: 3130843

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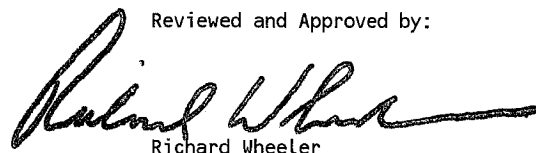
COMMENTS

- 01 The total coliform sample was placed in the incubator on 07/19/2016 at 17:50.
- 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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Gregory Wacik - USACE (Beltzville Dam)

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Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018950

Date Collected: 07/19/16 12:30
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 07/19/16 17:15

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	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:35	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	07/20	17:15	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/20	16:34	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:38	JCL
Nitrogen, Total Kjeldahl	0.60	mg/L	.25	1	EPA 351.2	07/28	15:25	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.3	mg/L	1	1	SM5310 C	07/20	20:59	ALD
RESIDUES								
Solids, Total Dissolved	54	mg/L	5	1	SM 2540C	07/22	13:15	TMH
Solids, Total Suspended	4	mg/L	3	1	SM 2540D	07/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	41	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

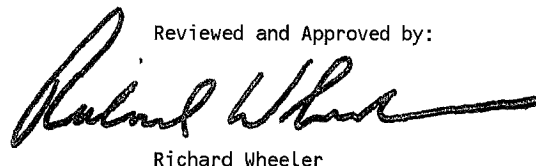
COMMENTS

- 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:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018951

Date Collected: 07/19/16 12:30
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 07/19/16 17:15

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	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:40	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	07/21	18:05	AEH
NITROGENS								
Nitrogen, Ammonia	0.62	mg/L	.05	1	D6919-03	07/20	17:30	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	07/20	16:35	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:39	JCL
Nitrogen, Total Kjeldahl	1.24	mg/L	.25	1	EPA 351.2	07/28	15:26	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	4.4	mg/L	1	1	SM5310 C	07/20	21:35	ALD
RESIDUES								
Solids, Total Dissolved	68	mg/L	5	1	SM 2540C	07/22	13:15	TMH
Solids, Total Suspended	68	mg/L	3	1	SM 2540D	07/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	53	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

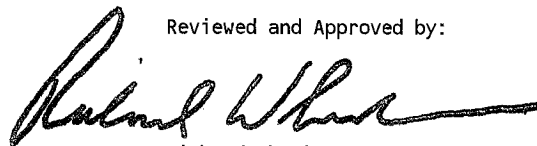
COMMENTS

- 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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Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018952

Date Collected: 07/19/16 11:45
Collected By: Client

Sample Desc: PR-4 Surface

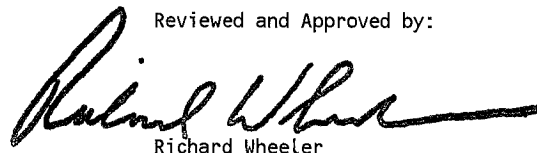
Date Received: 07/19/16 17:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	34	/100ml	2	1	SM 9222D	07/19	17:55	TNS
Total Coliform	>2400	mpn/100ml	1	1	SM 9223B	07/20	12:00	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	07/21	07:00	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	07/21	17:40	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	07/21	18:10	AEH
NITROGENS								
Nitrogen, Ammonia	0.08	mg/L	.05	1	D6919-03	07/20	18:28	JCL
Nitrogen, Nitrate	0.13	mg/L	.05	1	EPA 353.2	07/20	16:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	07/20	14:41	JCL
Nitrogen, Total Kjeldahl	0.52	mg/L	.25	1	EPA 351.2	07/28	15:27	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	07/20	12:05	EMW
Total Organic Carbon	3.8	mg/L	1	1	SM5310 C	07/20	21:48	ALD
RESIDUES								
Solids, Total Dissolved	47	mg/L	5	1	SM 2540C	07/22	13:15	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	07/22	13:15	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	62	mg/L	1	1	SM 2320 B	07/25	11:10	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/03/16
Lab ID: 3157-16-0018952

Date Collected: 07/19/16 11:45
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 07/19/16 17:15

PWSID: 3130843

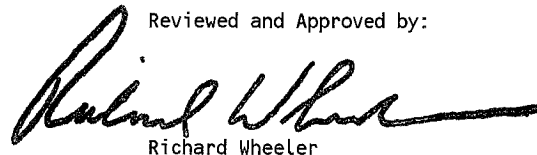
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 01 The total coliform sample was placed in the incubator on 07/19/2016 at 17:50.
- 02 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.
- 03 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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Gregory Wacik - USACE (Beltzville Dam)

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TXW
05/17/16 1:21:46 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 1

Account: 3157

Work Order: 006225

Project Leader: rxw

No: 275412

Customer: David Wertz

Work Order Description: Prompton Reservoir

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

WACK

Remarks:

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 3 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: RES

18945 Sample No: 1 Desc: PR-1 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, RES, AA

18946 Sample No: 2 Desc: PR-2 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, RES, AA

18947 Sample No: 3 Desc: PR-2 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, RES, AA

Matrix: o Date: 7/19/16
Time: 1340
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 7/19/16
Time: 1255
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 7/19/16
Time: 1255
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by:

Received by:

Received for laboratory by:

Date: 7/19/16

Time: 1515

Date: 7/19/16

Time: 1715

Sample entered by: C

rxw
05/17/16 1:21:46 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 2

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

WACIK

Chain of Custody

Project Leader: rxw No: 275412

Remarks:

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 3 Deg C. If Temp Unacceptable, On Ice? ☒ Y ☐ N
Approved By: RES

18948 Sample No: 4 Desc: PR-2 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, WACIK

18949 Sample No: 5 Desc: PR-3 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, WACIK

18950 Sample No: 6 Desc: PR-3 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,
no2-n, no3-n, d-po4-p, o-po4, bod,
fc, WACIK

Matrix: o Date: 7/19/16
Time: 1255
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 7/19/16
Time: 1230
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 7/19/16
Time: 1230
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by:

Received by:

Received for laboratory by:

Date: 7/19/16

Time: 1515

Date: 7/19/16

Time: 1715

Sample entered by:

RES

ixw
05/17/16 1:21:47 PM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 3

Account: 3157

Work Order: 006225

Project Leader: ixw

No: 275412

Customer: David Wertz

Work Order Description: Prompton Reservoir

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

WACIK

Remarks:

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 3 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: CES

18951 Sample No: 7 Desc: PR-3 Deep
nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod

Sample No: 8 Desc: PR-4 Surface

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod,

fc, tc,

Matrix: o Date: 7/19/16
Time: 1230

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 7/19/16
Time: 1145

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by:

Received by:

Received for laboratory by:

Date: 7/19/16

Time: 1515

Date: 7/19/16

Time: 1715

Sample entered by: C

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M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 08/30/16
 Lab ID: 3157-16-0023491

Date Collected: 08/17/16 11:15
 Collected By: Client

Sample Desc: PR-1 Surface

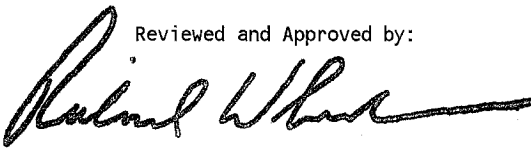
Date Received: 08/17/16 16:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Fecal Coliform	730	/100mL	2	1	SM 9222D	08/17	17:10	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	08/18	11:40	ADD
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:10	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:55	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/18	03:47	JCL
Nitrogen, Nitrate	0.09	mg/L	.05	1	EPA 353.2	08/18	16:41	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:06	JCL
Nitrogen, Total Kjeldahl	0.35	mg/L	.25	1	EPA 351.2	08/22	17:28	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	3.7	mg/L	1	1	SM5310 C	08/18	21:46	HRG
RESIDUES								
Solids, Total Dissolved	71	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	30	mg/L	1	1	SM 2320 B	08/26	13:35	AEH

Distribution of Reports:
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Reviewed and Approved by:


 Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023491

Date Collected: 08/17/16 11:15
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 08/17/16 16:15

PWSID: 3130843

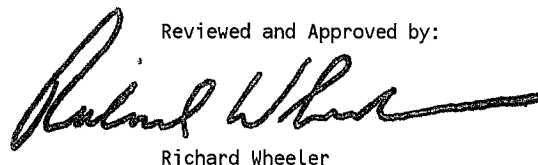
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 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 08/17/2016 at 17:30.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 08/30/16
 Lab ID: 3157-16-0023492

Date Collected: 08/17/16 12:30
 Collected By: Client

Sample Desc: PR-2 Surface

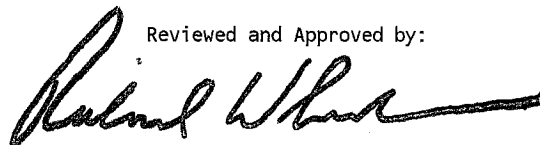
Date Received: 08/17/16 16:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	3	/100ml	2	1	SM 9222D	08/17	17:10	TNS
Total Coliform	2000	mpn/100ml	1	1	SM 9223B	08/18	11:40	ADD
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:10	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:55	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/18	04:01	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:41	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:07	JCL
Nitrogen, Total Kjeldahl	0.53	mg/L	.25	1	EPA 351.2	08/22	17:29	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	3.9	mg/L	1	1	SM5310 C	08/18	21:58	HRG
RESIDUES								
Solids, Total Dissolved	58	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	26	mg/L	1	1	SM 2320 B	08/26	13:35	AEH

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 Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


 Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023492

Date Collected: 08/17/16 12:30
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 08/17/16 16:15

PWSID: 3130843

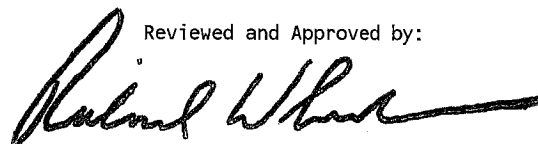
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

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 08/17/2016 at 17:30.

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Reviewed and Approved by:


Richard Wheeler

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1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023493

Date Collected: 08/17/16 12:30
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 08/17/16 16:15

PWSID: 3130843

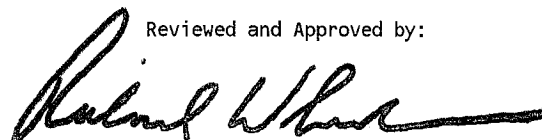
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:10	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	14:55	AEH
NITROGENS								
Nitrogen, Ammonia	0.08	mg/L	.05	1	D6919-03	08/18	04:16	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:42	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:07	JCL
Nitrogen, Total Kjeldahl	0.44	mg/L	.25	1	EPA 351.2	08/22	17:29	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	3.4	mg/L	1	1	SM5310 C	08/18	22:11	HRG
RESIDUES								
Solids, Total Dissolved	53	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	27	mg/L	1	1	SM 2320 B	08/26	13:35	AEH

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:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023494

Date Collected: 08/17/16 12:30
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 08/17/16 16:15

PWSID: 3130843

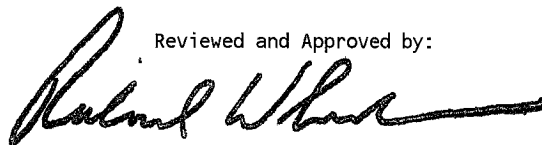
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.04	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	0.08	mg/L	.05	1	SM 4500P-E	08/19	14:10	AEH
Phosphorus as P, Total	0.25	mg/L	.01	1	SM 4500P-E	08/19	14:55	AEH
NITROGENS								
Nitrogen, Ammonia	0.22	mg/L	.05	1	D6919-03	08/18	04:30	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:45	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:10	JCL
Nitrogen, Total Kjeldahl	1.44	mg/L	.25	1	EPA 351.2	08/22	17:32	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	5.2	mg/L	1	1	SM5310 C	08/18	22:24	HRG
RESIDUES								
Solids, Total Dissolved	72	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	21	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	31	mg/L	1	1	SM 2320 B	08/26	14:20	AEH

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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Richard Wheeler

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Attention: David Wertz
 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 08/30/16
 Lab ID: 3157-16-0023495

Date Collected: 08/17/16 12:10
 Collected By: Client

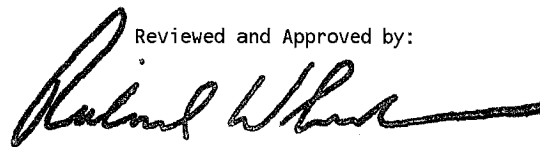
Sample Desc: PR-3 Surface

Date Received: 08/17/16 16:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	5	/100mL	2	1	SM 9222D	08/17	17:25	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	08/18	11:40	ADD
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:15	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	15:00	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/18	04:45	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:46	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:11	JCL
Nitrogen, Total Kjeldahl	0.54	mg/L	.25	1	EPA 351.2	08/22	17:33	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	4.0	mg/L	1	1	SM5310 C	08/18	22:36	HRG
RESIDUES								
Solids, Total Dissolved	68	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	26	mg/L	1	1	SM 2320 B	08/26	14:20	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:

 Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023495

Date Collected: 08/17/16 12:10
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 08/17/16 16:15

PWSID: 3130843

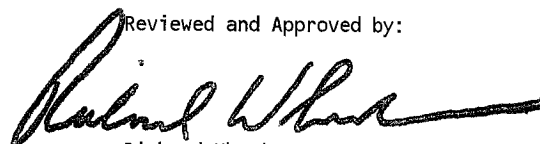
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

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 08/17/2016 at 17:30.
- 03 The SM 5210B sample did not have a DO depletion of at least 2 mg/L.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 08/30/16
 Lab ID: 3157-16-0023496

Date Collected: 08/17/16 12:10
 Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 08/17/16 16:15

PWSID: 3130843

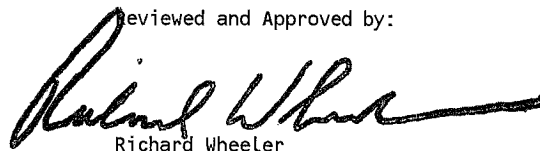
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	08/19	14:15	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	08/19	15:00	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/18	05:00	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:47	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:12	JCL
Nitrogen, Total Kjeldahl	0.57	mg/L	.25	1	EPA 351.2	08/22	17:34	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	3.8	mg/L	1	1	SM5310 C	08/18	22:49	HRG
RESIDUES								
Solids, Total Dissolved	65	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	25	mg/L	1	1	SM 2320 B	08/26	14:20	AEH

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:
 Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


 Richard Wheeler

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M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023497

Date Collected: 08/17/16 12:10
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 08/17/16 16:15

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	08/17	16:50	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	08/19	14:15	AEH
Phosphorus as P, Total	0.13	mg/L	.01	1	SM 4500P-E	08/19	15:00	AEH
NITROGENS								
Nitrogen, Ammonia	0.94	mg/L	.05	1	D6919-03	08/18	05:14	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:48	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:13	JCL
Nitrogen, Total Kjeldahl	1.58	mg/L	.25	1	EPA 351.2	08/22	17:35	JCL
OTHER								
Biochemical Oxygen Demand	6	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	5.5	mg/L	1	1	SM5310 C	08/23	18:52	ALD
RESIDUES								
Solids, Total Dissolved	84	mg/L	5	1	SM 2540C	08/23	13:10	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	51	mg/L	1	1	SM 2320 B	08/26	14:20	AEH

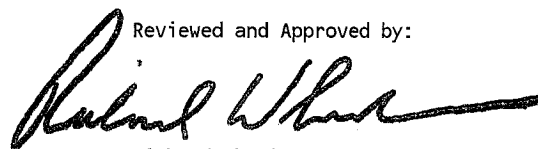
COMMENTS

- 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:

Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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M.J. Reider Associates, Inc.

Attention: David Wertz
 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 08/30/16
 Lab ID: 3157-16-0023498

Date Collected: 08/17/16 11:00
 Collected By: Client

Sample Desc: PR-4 Surface

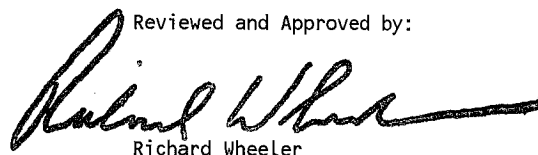
Date Received: 08/17/16 16:15

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	200	/100mL	2	1	SM 9222D	08/17	17:25	TNS
Total Coliform	>2400	mpn/100mL	1	1	SM 9223B	08/18	11:40	ADD
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.01	mg/L	.01	1	SM 4500P-E	08/17	16:50	AEH
Phosphorus as P, Dissolved	0.25	mg/L	.05	1	SM 4500P-E	08/19	14:15	AEH
Phosphorus as P, Total	0.28	mg/L	.01	1	SM 4500P-E	08/19	15:00	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	08/18	05:29	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	08/18	16:51	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	08/18	15:16	JCL
Nitrogen, Total Kjeldahl	0.81	mg/L	.25	1	EPA 351.2	08/22	17:38	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	08/18	14:05	EMW
Total Organic Carbon	4.5	mg/L	1	1	SM5310 C	08/23	19:05	ALD
RESIDUES								
Solids, Total Dissolved	63	mg/L	5	1	SM 2540C	08/23	13:30	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	08/23	13:10	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	26	mg/L	1	1	SM 2320 B	08/26	14:20	AEH

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Reviewed and Approved by:


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CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 08/30/16
Lab ID: 3157-16-0023498

Date Collected: 08/17/16 11:00
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 08/17/16 16:15

PWSID: 3130843

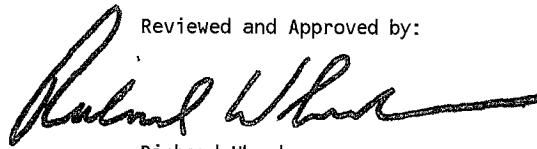
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 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 08/17/2016 at 17:30.

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Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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M. J. REIDER ASSOCIATES, INC.

IRW
06/24/16 10:05:14 AM

Chain of Custody

No: 276889

Work Order: 006225
Work Order Description: Prompton Reservoir

Account: 3157

Customer: David Wertz

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

Total Sampling Time (hours):

Laboratory Receipt Temp: 5 Deg C. If Temp Unacceptable, On Ice? Y N

Approved By: BSW

Bottle Prep by:

Sample No: 1 Desc: PR-1 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod

fc, tc,

Sample No: 2

Desc: PR-2 Surface

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod

fc, tc,

Sample No: 3

Desc: PR-2 Mid-Depth

nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod

Matrix: o

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Date: 8/17/16

Time: 1115

Matrix: o

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Date: 8/17/16

Time: 1230

Matrix: o

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

Date: 8/17/16

Time: 1230

Relinquished by:

Received by:

Received for laboratory by:

Date: 8/17/16

Time: 2:45

Date: 8/17/16

Time: 1615

Sample entered by:

Chain of Custody

Account: 3157 Work Order: 006225
Customer: David Wertz Work Order Description: Prompton Reservoir
Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers: WACIK

Project Leader: rxw No: 276889

Remarks:

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

Laboratory Receipt Temp: 5 Deg C. If Temp Unacceptable, On Ice? Y N
Approved By: B5W

23494 Sample No: 4 Desc: PR-2 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, NA
fc, tc's NA

23495 Sample No: 5 Desc: PR-3 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, NA
fc, tc's NA

23496 Sample No: 6 Desc: PR-3 Mid-Depth
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, NA
fc, tc's NA

Matrix: o Date: 8/17/16
Time: 1230
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 8/17/16
Time: 1210
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Matrix: o Date: 8/17/16
Time: 1210
A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by: [Signature]
Date: 8/17/16 Time: 2:45

Received by: [Signature]

Received for laboratory by: [Signature]
Date: 8-17-16 Time: 1215

Sample entered by: [Signature]

M. J. REIDER ASSOCIATES, INC.

rxw
06/24/16 10:05:14 AM

Chain of Custody

No: 276889

Project Leader: rxw

Work Order: 006225

Work Order Description: Prompton Reservoir

Customer: David Wertz

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

WACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 5 Deg C If Temp Unacceptable, On Ice? Y N

Approved By: BSW

23497

Sample No: 7 Desc: PR-3 Deep
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, ^{ALT} _{BSW}

Sample No: 8 Desc: PR-4 Surface
nh3-n, tkn, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod, ^{ALT} _{BSW}
fc, tds

Matrix: o Date: 8/17/16
Time: 12:17

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o Date: 8/17/16
Time: 11:00

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by:

Received by:

Received for laboratory by:

Date: 8/17/16

Time: 2:45

Date: 8-17-16

Time: 16:15

Sample entered by:

CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028560

Date Collected: 09/13/16 12:37
Collected By: Client

Sample Desc: PR-1 Surface

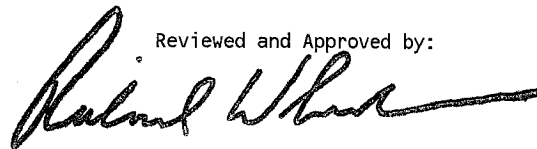
Date Received: 09/13/16 18:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Fecal Coliform	28	/100mL	2	1	SM 9222D	09/13	18:30	TNS
Total Coliform	2400	mpn/100mL	1	1	SM 9223B	09/14	12:30	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	09/19	15:10	AEH
Phosphorus as P, Total	0.07	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/14	12:29	JCL
Nitrogen, Nitrate	0.08	mg/L	.05	1	EPA 353.2	09/14	17:04	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:13	JCL
Nitrogen, Total Kjeldahl	<.25	mg/L	.25	1	EPA 351.2	09/21	15:09	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	1.7	mg/L	1	1	SM5310 C	09/15	19:54	ALD
RESIDUES								
Solids, Total Dissolved	69	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	32	mg/L	1	1	SM 2320 B	09/14	13:50	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:



Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028560

Date Collected: 09/13/16 12:37
Collected By: Client

Sample Desc: PR-1 Surface

Date Received: 09/13/16 18:00

PWSID: 3130843

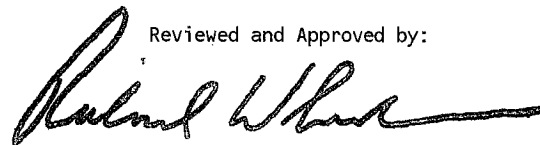
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

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 on 09/13/2016 at 18:20.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
 Reported To: Tetra Tech (Beltzville Dam)
 1320 North Courthouse Rd., Ste. 600
 Arlington VA 22201

Date of Report: 09/26/16
 Lab ID: 3157-16-0028561

Date Collected: 09/13/16 13:59
 Collected By: Client

Sample Desc: PR-2 Surface

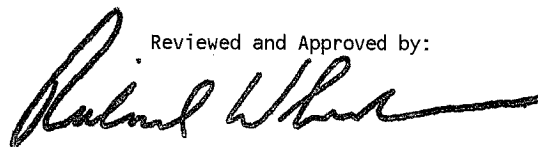
Date Received: 09/13/16 18:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	09/13	18:30	TNS
Total Coliform	490	mpn/100mL	1	1	SM 9223B	09/14	12:30	PLW
CHEMISTRY								
COLORIMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/19	15:10	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/14	12:44	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:05	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:14	JCL
Nitrogen, Total Kjeldahl	0.74	mg/L	.25	1	EPA 351.2	09/21	15:10	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	3.8	mg/L	1	1	SM5310 C	09/15	20:06	ALD
RESIDUES								
Solids, Total Dissolved	69	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	6	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	29	mg/L	1	1	SM 2320 B	09/14	13:50	AEH

Distribution of Reports:
 Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:



Richard Wheeler

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.



Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028561

Date Collected: 09/13/16 13:59
Collected By: Client

Sample Desc: PR-2 Surface

Date Received: 09/13/16 18:00

PWSID: 3130843

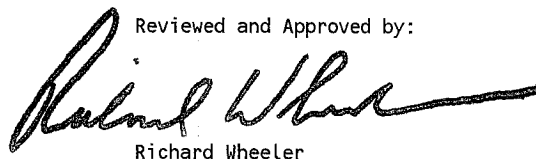
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
--------	------	--------------	------------------	-----------	--------------	--------------	---------

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 on 09/13/2016 at 18:20.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028562

Date Collected: 09/13/16 13:59
Collected By: Client

Sample Desc: PR-2 Mid-Depth

Date Received: 09/13/16 18:00

PWSID: 3130843

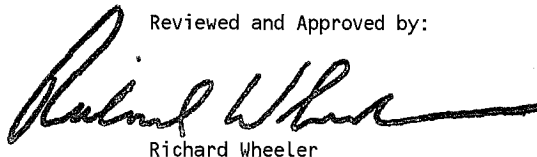
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/19	15:10	AEH
Phosphorus as P, Total	0.04	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/14	12:58	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:06	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:15	JCL
Nitrogen, Total Kjeldahl	0.62	mg/L	.25	1	EPA 351.2	09/21	15:11	JCL
OTHER								
Biochemical Oxygen Demand	3	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	3.5	mg/L	1	1	SM5310 C	09/15	20:18	ALD
RESIDUES								
Solids, Total Dissolved	57	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	7	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	29	mg/L	1	1	SM 2320 B	09/14	13:50	AEH

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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028563

Date Collected: 09/13/16 13:59
Collected By: Client

Sample Desc: PR-2 Deep

Date Received: 09/13/16 18:00

PWSID: 3130843

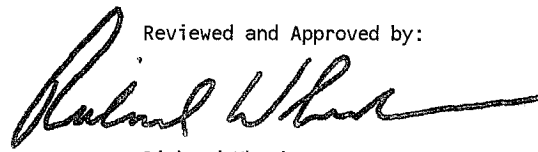
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	0.06	mg/L	.05	1	SM 4500P-E	09/19	15:10	AEH
Phosphorus as P, Total	0.06	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	0.08	mg/L	.05	1	D6919-03	09/14	13:13	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:09	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:18	JCL
Nitrogen, Total Kjeldahl	0.71	mg/L	.25	1	EPA 351.2	09/22	18:05	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	2.7	mg/L	1	1	SM5310 C	09/15	20:30	ALD
RESIDUES								
Solids, Total Dissolved	77	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	139	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	30	mg/L	1	1	SM 2320 B	09/14	13:50	AEH

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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Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028564

Date Collected: 09/13/16 13:35
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 09/13/16 18:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	2	/100mL	2	1	SM 9222D	09/13	18:45	TNS
Total Coliform	870	mpn/100mL	1	1	SM 9223B	09/14	12:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/19	15:10	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/14	13:27	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:10	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:19	JCL
Nitrogen, Total Kjeldahl	0.54	mg/L	.25	1	EPA 351.2	09/22	18:06	JCL
OTHER								
Biochemical Oxygen Demand	2	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	4.5	mg/L	1	1	SM5310 C	09/15	21:32	ALD
RESIDUES								
Solids, Total Dissolved	74	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	5	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	29	mg/L	1	1	SM 2320 B	09/14	15:20	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:

Richard Wheeler

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1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028564

Date Collected: 09/13/16 13:35
Collected By: Client

Sample Desc: PR-3 Surface

Date Received: 09/13/16 18:00

PWSID: 3130843

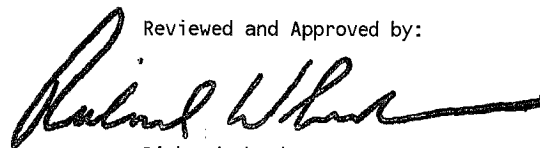
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 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 on 09/13/2016 at 18:20.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028565

Date Collected: 09/13/16 13:35
Collected By: Client

Sample Desc: PR-3 Mid-Depth

Date Received: 09/13/16 18:00

PWSID: 3130843

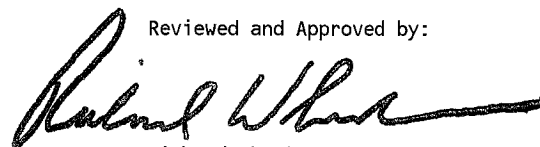
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	<.01	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/19	15:10	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/14	14:11	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:11	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:20	JCL
Nitrogen, Total Kjeldahl	0.50	mg/L	.25	1	EPA 351.2	09/22	18:09	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	3.5	mg/L	1	1	SM5310 C	09/15	21:57	ALD
RESIDUES								
Solids, Total Dissolved	73	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	3	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	29	mg/L	1	1	SM 2320 B	09/14	15:20	AEH

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:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028566

Date Collected: 09/13/16 13:35
Collected By: Client

Sample Desc: PR-3 Deep

Date Received: 09/13/16 18:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.60	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	0.80	mg/L	.05	1	SM 4500P-E	09/19	15:15	AEH
Phosphorus as P, Total	0.85	mg/L	.01	1	SM 4500P-E	09/19	15:30	AEH
NITROGENS								
Nitrogen, Ammonia	4.72	mg/L	.05	1	D6919-03	09/14	14:26	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:12	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:21	JCL
Nitrogen, Total Kjeldahl	6.58	mg/L	.25	1	EPA 351.2	09/22	18:10	JCL
OTHER								
Biochemical Oxygen Demand	29	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	14.3	mg/L	1	1	SM5310 C	09/15	22:37	ALD
RESIDUES								
Solids, Total Dissolved	155	mg/L	5	1	SM 2540C	09/16	12:30	TMH
Solids, Total Suspended	69	mg/L	3	1	SM 2540D	09/16	12:30	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	102	mg/L	1	1	SM 2320 B	09/14	15:20	AEH

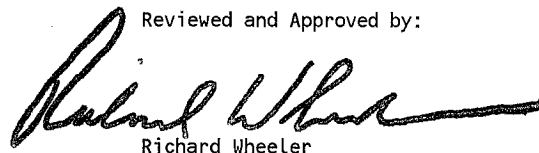
COMMENTS

- 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:

Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028567

Date Collected: 09/13/16 12:17
Collected By: Client

Sample Desc: PR-4 Surface

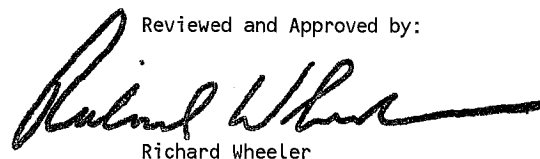
Date Received: 09/13/16 18:00

PWSID: 3130843

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	6	/100mL	2	1	SM 9222D	09/13	18:45	TNS
Total Coliform	2400	mpn/100mL	1	1	SM 9223B	09/14	12:30	PLW
CHEMISTRY								
COLORMETRIC								
Phosphate as P, Ortho	0.02	mg/L	.01	1	SM 4500P-E	09/14	12:15	AEH
Phosphorus as P, Dissolved	<.05	mg/L	.05	1	SM 4500P-E	09/19	15:15	AEH
Phosphorus as P, Total	<.01	mg/L	.01	1	SM 4500P-E	09/19	15:35	AEH
NITROGENS								
Nitrogen, Ammonia	<.05	mg/L	.05	1	D6919-03	09/14	14:40	JCL
Nitrogen, Nitrate	<.05	mg/L	.05	1	EPA 353.2	09/14	17:15	JCL
Nitrogen, Nitrite	<.05	mg/L	.05	1	EPA 353.2	09/14	15:23	JCL
Nitrogen, Total Kjeldahl	0.37	mg/L	.25	1	EPA 351.2	09/22	18:11	JCL
OTHER								
Biochemical Oxygen Demand	<2	mg/L	2	1	SM 5210B	09/14	13:10	EMW
Total Organic Carbon	3.6	mg/L	1	1	SM5310 C	09/15	22:49	ALD
RESIDUES								
Solids, Total Dissolved	37	mg/L	5	1	SM 2540C	09/19	13:20	TMH
Solids, Total Suspended	<3	mg/L	3	1	SM 2540D	09/19	13:20	TMH
TITRATIONS								
Alkalinity, Total to pH 4.5	28	mg/L	1	1	SM 2320 B	09/14	15:20	AEH

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

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Attention: David Wertz
Reported To: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Date of Report: 09/26/16
Lab ID: 3157-16-0028567

Date Collected: 09/13/16 12:17
Collected By: Client

Sample Desc: PR-4 Surface

Date Received: 09/13/16 18:00

PWSID: 3130843

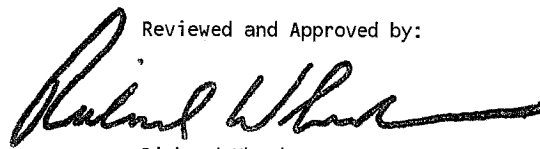
Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
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COMMENTS

- 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 on 09/13/2016 at 18:20.

Distribution of Reports:
Gregory Wacik - USACE (Beltzville Dam)

Reviewed and Approved by:


Richard Wheeler

Page 2 of 2

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IXW
08/08/16 8:25:16 AM

M. J. REIDER ASSOCIATES, INC.

COFC.FRT
Page: 1

Chain of Custody

Account: 3157

Work Order: 006225

Project Leader: ixw

No: 278489

Customer: David Wertz

Work Order Description: Prompton Reservoir

Address: Tetra Tech (Beltsville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Remarks:

Phone: 703-387-5516

Ext:

Total Sampling Time (hours):

Bottle Prep by:

Samplers:

Wack

Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? ☒ N
Approved By: BSW

28560

Sample No: 1 Desc: PR-1 Surface

Matrix: o

Date:

Time: 12:37

nh3-n, tkm, alk, tds, tss, po4-p, toc,

W

no2-n, no3-n, d-po4-p, o-po4, bod

BSW

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 80z Alk p w/ Cool to 6 C;
C - 1 X 2xamberova g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlmicro p w/ Sterile/Na2S2O3;

28561

Sample No: 2 Desc: PR-2 Surface

Matrix: o

Date:

Time: 1:59

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod

BSW

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 80z Alk p w/ Cool to 6 C;
C - 1 X 2xamberova g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlmicro p w/ Sterile/Na2S2O3;

28562

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

Matrix: o

Date:

Time: 1:57

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod

BSW

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 80z Alk p w/ Cool to 6 C;
C - 1 X 2xamberova g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Relinquished by:

Received by:

Received for laboratory by:

Date:

Time: 4:20

Date: 9-13-16

Time: 18:00

Sample entered by:

BSW

TXW
08/08/16 8:25:16 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 2

Chain of Custody

Account: 3157

Customer: David Wertz

Work Order: 006225
Work Order Description: Prompton Reservoir

Project Leader: TXW

No: 278489

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Remarks:

Phone: 703-387-5516

Ext:

Samplers:

WACIK

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: 12 Deg C. If Temp Unacceptable, On Ice? ☒ N

Approved By: BSW

28563

Sample No: 4 Desc: PR-2 Deep

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod SW

Matrix: o

Date: 9/3/16

Time: 1:59

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o

Date: 9/3/16

Time: 1:35

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

F - 1 X 250mLMicro p w/ Sterile/Na2S2O3;

Matrix: o

Date: 9/3/16

Time: 1:35

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);

B - 1 X 8oz Alk p w/ Cool to 6 C;

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

D - 1 X L bod p w/ Cool to 6 C;

E - 1 X Pt no3no3 p w/ Cool to 6 C;

28565

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

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod SW

Date: 9/3/16

Time: 4:20

Relinquished by: [Signature]

Received by: [Signature]

Received for laboratory by: [Signature]

Date: 9/13/16

Time: 1800

Sample entered by: OCM

TXW
08/08/16 8:25:17 AM

M. J. REIDER ASSOCIATES, INC.

COFC.PRT
Page: 3

Chain of Custody

Account: 3157

Work Order: 006225

Project Leader: TXW

No: 278489

Customer: David Wertz

Work Order Description: Prompton Reservoir

Remarks:

Address: Tetra Tech (Beltzville Dam)
1320 North Courthouse Rd., Ste. 600
Arlington VA 22201

Phone: 703-387-5516 Ext:

Samplers:

u/mcik

Total Sampling Time (hours):

Bottle Prep by:

Laboratory Receipt Temp: *12* Deg C. If Temp Unacceptable, On Ice? ☒ N

Approved By: *JSW*

28566

Sample No: 7 Desc: PR-3 Deep

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod *W*

Sample No: 8 Desc: PR-4 Surface

nh3-n, tkm, alk, tds, tss, po4-p, toc,

no2-n, no3-n, d-po4-p, o-po4, bod *W*

fc, tc, *TRD*

Matrix: o

Date:

Time:

9/5/16 12:35

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;

Matrix: o

Date:

Time:

9/5/16 12:17

A - 1 X Pt nh3 p w/ H2SO4 (pH<2);
B - 1 X 8oz Alk p w/ Cool to 6 C;
C - 1 X 2xambervoa g w/ H3PO4/zero headspace;
D - 1 X L bod p w/ Cool to 6 C;
E - 1 X Pt no3no3 p w/ Cool to 6 C;
F - 1 X 250mlMicro p w/ Sterile/Na2S2O3;

Relinquished by: *[Signature]*

Received by: *[Signature]*

Date: *9/5/16*

Time: *1200*

Received for laboratory by: *[Signature]*

Date: *9-13-16*

Time: *1800*

Sample entered by: *[Signature]*