



PLUM POINT ENERGY STATION

GROUNDWATER MONITORING AND CORRECTIVE ACTION

2020 ANNUAL REPORT

PREPARED IN COMPLIANCE WITH THE

EPA FINAL RULE FOR THE DISPOSAL OF

COAL COMBUSTION RESIDUALS

TITLE 40 OF THE CODE OF FEDERAL REGULATIONS, PART 257

DECEMBER 17, 2020

PLUM POINT ENERGY STATION
GROUNDWATER MONITORING AND CORRECTIVE ACTION
2020 ANNUAL REPORT

Prepared for

Plum Point Services Company, LLC
Plum Point Energy Station
2732 South County Road 623
Osceola, AR 72370

Prepared by

FTN Associates, Ltd.
3 Innwood Circle, Suite 220
Little Rock, AR 72211

FTN No. R14590-2275-001

December 17, 2020

EXECUTIVE SUMMARY

Plum Point Services Company, LLC (PPSC), operates a landfill for the disposal of coal combustion residuals (CCRs) at the Plum Point Energy Station located near Osceola, Arkansas. The landfill is regulated by the Environmental Protection Agency (EPA) Coal Combustion Residuals rule, promulgated at Title 40 of the Code of Federal Regulations (40 CFR), Part 257, and published on April 17, 2015. Landfills regulated by this rule are required to implement and maintain a groundwater monitoring program to determine if the CCR landfill is impacting groundwater quality at the facility's compliance boundary. For this purpose, semiannual groundwater detection monitoring is required. This report presents results from semiannual detection monitoring events performed during 2020 in accordance with 40 CFR Part 257.

The landfill's groundwater monitoring program uses a certified monitoring well network comprised of ten monitoring wells (FTN 2017a). Groundwater sample collection is performed in accordance with the landfill's groundwater sampling and analysis plan (FTN 2017b). Data collected from this program are evaluated in accordance with the landfill's certified statistical analysis plan (FTN 2017c).

FTN Associates, Ltd. (FTN), was contracted to sample groundwater and statistically evaluate the data from the 2020 semiannual monitoring events. Major conclusions from the evaluations include the following:

1. Detection monitoring was performed during April and October 2020 for the first and second half of 2020 monitoring periods, respectively.
2. The direction of groundwater flow varied between the first and second half monitoring events. Water levels gauged during April 2020 indicate groundwater flow was generally toward the southwest across the active landfill area. Water levels gauged during October 2020 indicate groundwater flow was generally toward the east-northeast.
3. Of the parameters evaluated, only fluoride has an EPA maximum contaminant level (MCL). None of the measured values in groundwater exceeded the MCL for fluoride.
4. Time-series plots and box-and-whiskers diagrams show variability across the well network for calcium, chloride, fluoride, sulfate, and total dissolved solids (TDS). Values for boron and pH are relatively similar across all wells, with measured

levels of boron being below the laboratory reporting detection limit (RDL) for all wells except for upgradient well MW-108 for the period of record.

5. Statistical evaluation of the first half of 2020 data set identified confirmed statistically significant increases (SSIs) for calcium and TDS at MW-117. PPSC completed a successful alternate source demonstration (ASD) in response to the SSIs in accordance with §257.94(e)(2). The ASD was certified by an Arkansas-registered professional engineer and was posted to the facility's operating record on August 3, 2020. Based on the successful ASD, PPSC continued with detection monitoring in accordance with §257.94.
6. Statistical evaluation of the second half of 2020 data set did not identify any SSIs. The facility will continue with detection monitoring in accordance with §257.94.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
1.0 BACKGROUND	1-1
1.1 Sampling Area	1-1
1.2 Operational History.....	1-4
1.3 Regional Hydrogeology	1-4
1.4 Site Hydrogeology	1-7
1.5 General Groundwater Quality.....	1-7
2.0 MONITORING NETWORK AND SCHEDULE	2-1
2.1 Monitoring Well Network.....	2-1
2.2 Network Improvements During 2020	2-3
2.3 Sampling Schedule.....	2-3
2.4 Monitoring Well Operation and Maintenance	2-3
2.5 Sampling Methodology.....	2-4
2.6 Laboratory Analyses	2-4
3.0 DATA PRESENTATION.....	3-1
3.1 Water Level Data	3-1
3.1.1 Water Level Measurements and Hydrograph	3-1
3.1.2 Direction of Groundwater Flow.....	3-2
3.1.3 Rate of Groundwater Flow.....	3-2
3.2 Field-Measured Water Quality Data.....	3-3
3.3 Laboratory Analytical Data.....	3-3
3.4 Quality Assurance and Quality Control	3-6
3.4.1 Review of Laboratory Quality Control Samples	3-6
3.4.2 Review of Field Quality Control Samples	3-6
4.0 STATISTICAL EVALUATION	4-1
4.1 Statistical Program Design.....	4-1
4.1.1 Statistical Approach.....	4-1
4.1.2 Site-Wide False Positive Rate and Statistical Power	4-2

TABLE OF CONTENTS (CONTINUED)

4.2	Exploratory Data Analysis	4-4
4.2.1	Time-Series Plots and Box-and-Whiskers Diagrams	4-4
4.2.2	Identification of Outliers.....	4-4
4.3	Statistical Evaluation Results.....	4-5
4.3.1	Intrawell Prediction Limit Analysis, First Half of 2020	4-5
4.3.2	Mann-Kendall/Theil-Sen Trend Line Test, First Half of 2020	4-6
4.3.3	Intrawell Prediction Limit Analysis, Second Half of 2020.....	4-6
4.3.4	Mann-Kendall/Theil-Sen Trend Line Test, Second Half of 2020	4-7
5.0	CONCLUSIONS AND RECOMMENDATIONS	5-1
6.0	REFERENCES	6-1

LIST OF APPENDICES

APPENDIX A:	Field Sampling Forms
APPENDIX B:	Laboratory Reports
APPENDIX C:	Water Elevation Data and Hydrographs
APPENDIX D:	Appendix III Groundwater Quality Historical Database
APPENDIX E:	Background Data Sets Used for Statistics
APPENDIX F:	Exploratory Data Analysis Plots
APPENDIX G:	Statistical Evaluation Results
APPENDIX H:	Alternate Source Demonstrations

LIST OF TABLES

Table 2.1	Summary of well construction details.....	2-1
Table 2.2	Appendix III parameters for groundwater detection monitoring.....	2-4
Table 3.1	Water level data	3-1
Table 3.2	Field-measured water quality data.....	3-4
Table 3.3	Summary of appendix III results, first half of 2020.....	3-5
Table 3.4	Summary of appendix III results, second half of 2020.....	3-6
Table 4.1	Values used to determine test alpha and power curve	4-2
Table 4.2	Summary of statistically significant results, intrawell prediction limit analysis, first half of 2020.....	4-6

LIST OF FIGURES

Figure 1.1	Location map, Plum Point Energy Station.....	1-2
Figure 1.2	Vicinity map, Plum Point Energy Station.....	1-3
Figure 1.3	Landfill layout map, Plum Point Energy Station landfill	1-5
Figure 1.4	Physiographic location, Plum Point Energy Station.....	1-6
Figure 2.1	Monitoring well locations, Plum Point Energy Station	2-2
Figure 3.1	Potentiometric surface, April 6, 2020.....	3-8
Figure 3.2	Potentiometric surface, October 7, 2020.....	3-9
Figure 4.1	ERPC versus landfill power curve for detection monitoring.....	4-3

1.0 BACKGROUND

Plum Point Services Company, LLC (PPSC), operates a landfill for the disposal of coal combustion residuals (CCRs) at the Plum Point Energy Station in Mississippi County, Arkansas. The plant and landfill are located approximately 2 miles south of the city of Osceola, as shown on Figure 1.1. The landfill is regulated by the Environmental Protection Agency (EPA) Coal Combustion Residuals rule, promulgated at Title 40 of the Code of Federal Regulations (40 CFR), Part 257, and published on April 17, 2015. The regulation, referred to hereafter as the CCR rule, requires regulated landfills to implement and maintain a groundwater monitoring program to determine if the CCR landfill is impacting groundwater quality at the facility's compliance boundary. For this purpose, groundwater detection monitoring is required on a semiannual frequency. A groundwater sampling program that meets the requirements of the CCR rule was implemented by PPSC during 2015, and the first semiannual detection monitoring event was performed at the landfill during the second half of 2017.

FTN Associates, Ltd. (FTN), was contracted to sample groundwater and statistically evaluate the data from the semiannual monitoring events performed during 2020. This report presents the results of groundwater sampling and the associated statistical evaluations, and is intended to satisfy the reporting requirements of §257.90(e)(1) through (5). The following sections provide a brief description of the sampling area, operational history of the plant and landfill, regional and site-specific hydrogeological setting, and general regional and site groundwater quality.

1.1 Sampling Area

The landfill area encompasses approximately 245 acres located approximately 1 mile west of the Mississippi River and 2 miles south of Osceola, Arkansas. The landfill is bordered by Arkansas Highway 239 to the east, Arkansas Highway 198 to the south, and the BNSF rail line to the west. Beyond these features and immediately north of the landfill are agricultural fields, and topography is relatively flat. A vicinity map of Plum Point Energy Station and the landfill is provided as Figure 1.2.

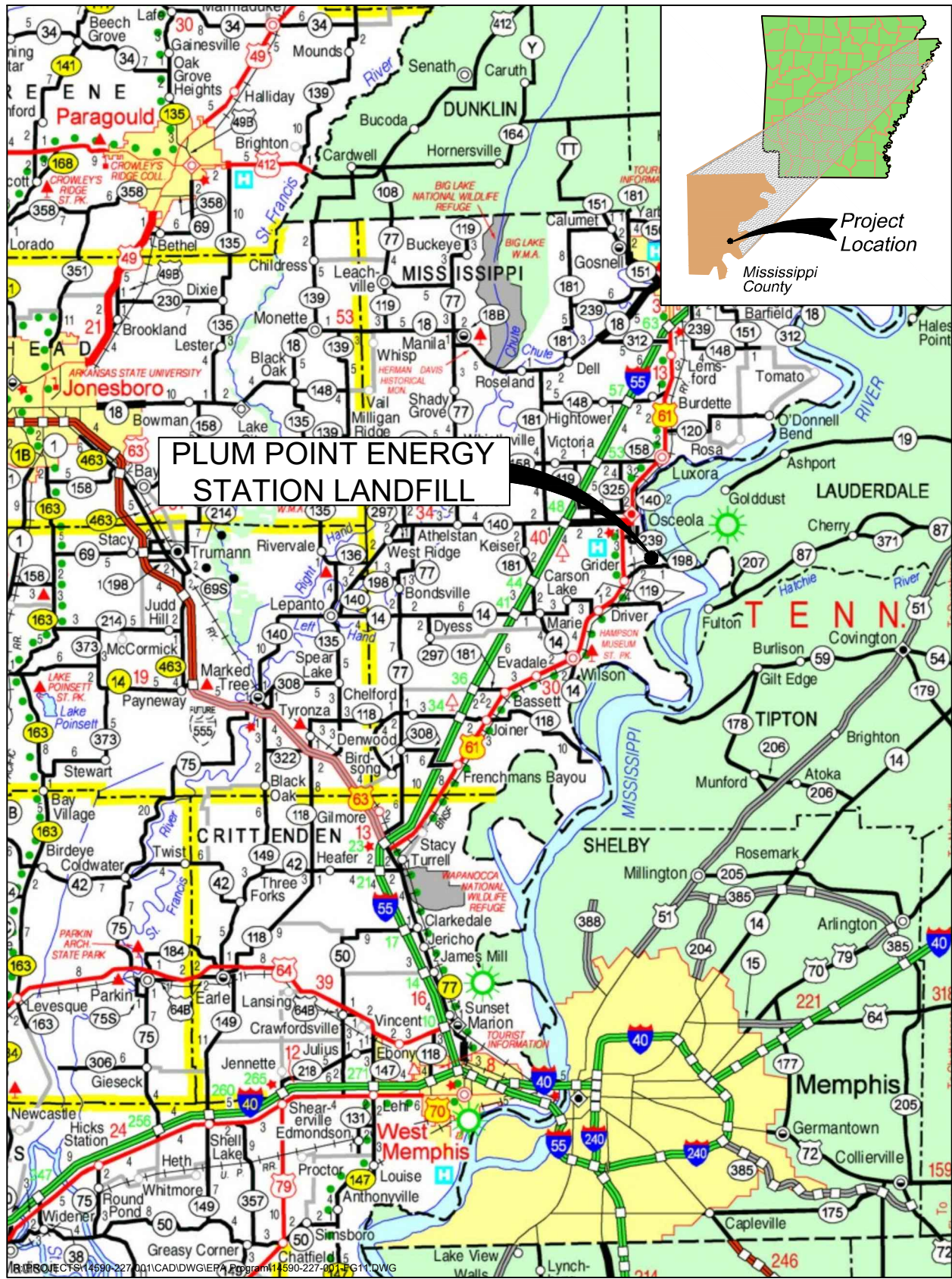


Figure 1.1. Location map.

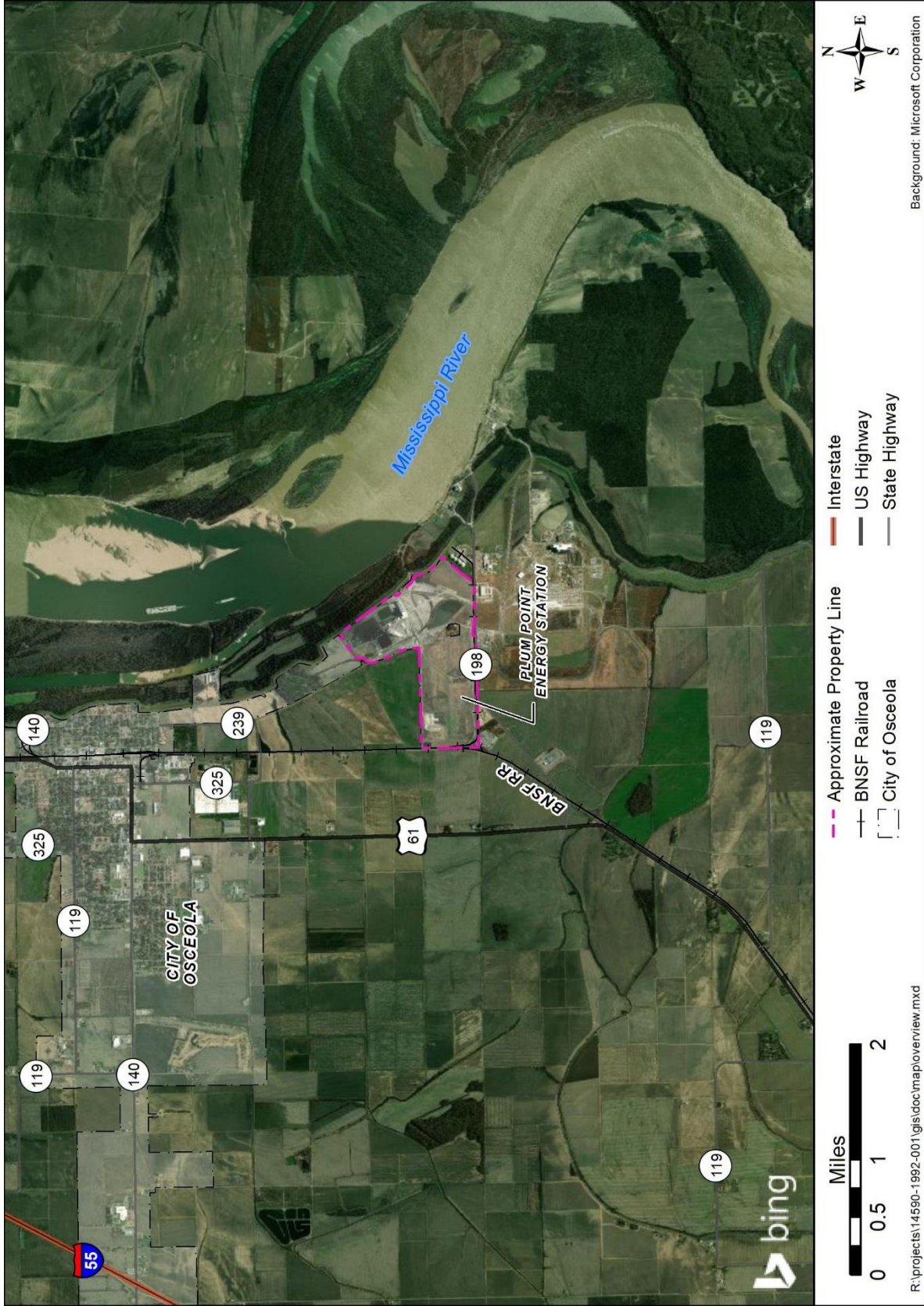


Figure 1.2. Vicinity map, Plum Point Energy Station.

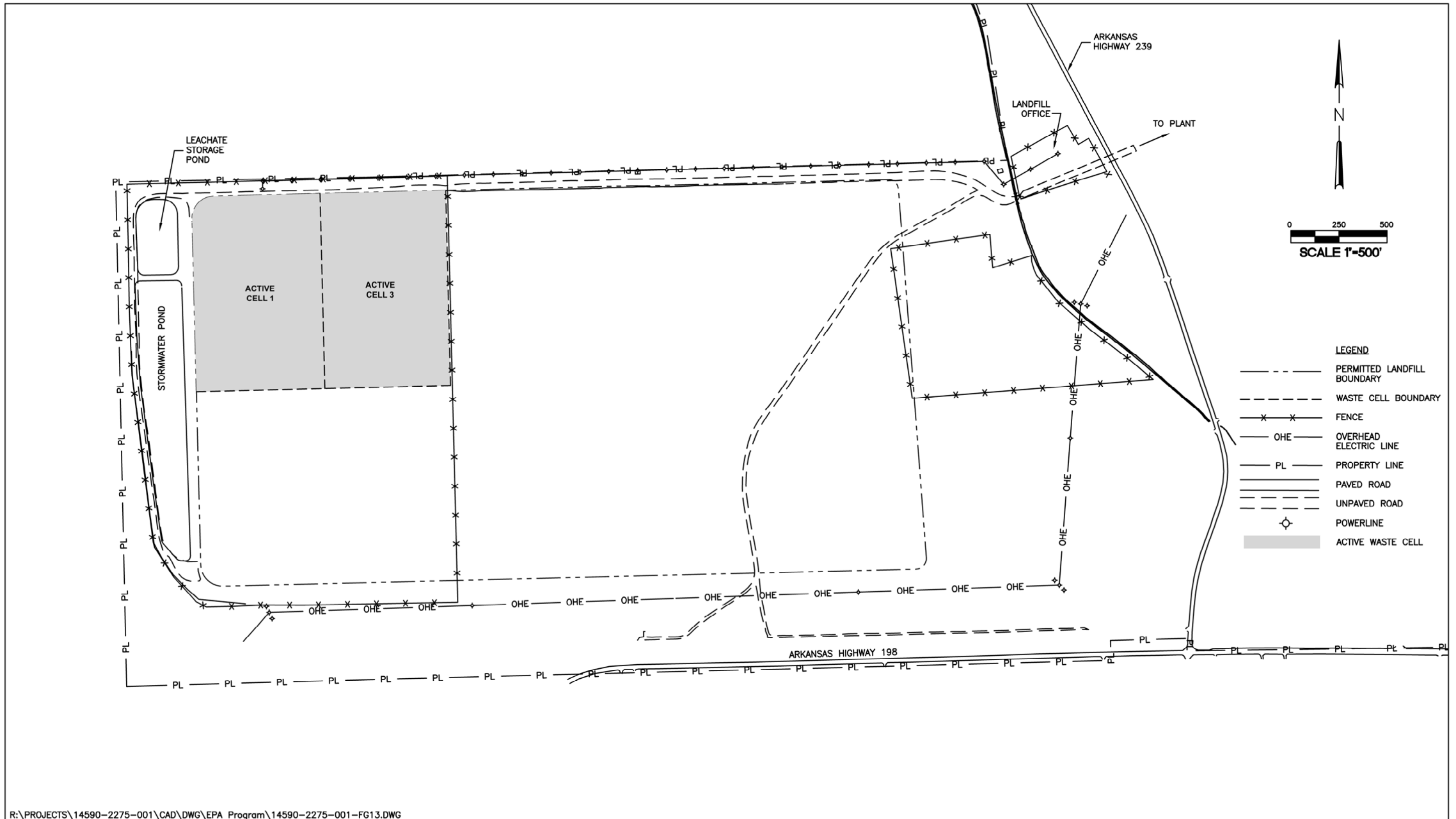
1.2 Operational History

The plant has been in operation since 2010 and generates electricity through the combustion of coal. Approximately 500,000 tons of CCR material is produced and deposited in the landfill each year. The landfill is permitted by the Arkansas Department of Energy and Environment, Division of Environmental Quality (DEQ), under Permit No. 0303-S3N-R1 and became active during March 2010. The landfill currently has two active disposal cells, cells 1 and 3, which are shown on Figure 1.3. The combined area of the two active CCR disposal cells is approximately 30 acres.

Groundwater detection monitoring was initiated at the landfill in November 2007, in accordance with Arkansas Pollution Control and Ecology Commission (APCEC) Regulation No. 22 requirements. The landfill's groundwater monitoring system was expanded and designed to conform to the requirements of the CCR rule. The groundwater monitoring network was certified by FTN in October 2017 (FTN 2017a). Details regarding the certified groundwater monitoring network are provided in Section 2.0 and in the landfill network certification report (FTN 2017a).

1.3 Regional Hydrogeology

The landfill is located in the Mississippi Alluvial Plain physiographic region, as shown on Figure 1.4. The region was formed by the deposits of the Mississippi River and its tributaries and is generally flat-lying (Cushing, Boswell, and Hosman 1964). The uppermost aquifer in the region is the Mississippi River Valley alluvial aquifer (hereafter referred to as the alluvial aquifer). The alluvial aquifer is comprised of unconsolidated Quaternary-age alluvial and terrace deposit sands and gravels that generally grade upward to clays and silts, which form a semi-confining to confining layer over much of the aquifer. Regionally, the alluvium reaches depths of 100 ft to 200 ft below ground surface (bgs) (Ryling 1960; Cushing, Boswell, and Hosman 1964). Beneath the alluvial aquifer is the Tertiary-aged Jackson-Claiborne clay, which acts as a lower confining unit. The Jackson group is comprised of primarily dense clay with occasional lenses of fine-grained sand (Peterson, Broom, and Bush 1985). The regional direction of groundwater flow is toward the southwest (Schrader 2015).



R:\PROJECTS\14590-2275-001\CAD\DWG\EPA Program\14590-2275-001-FG13.DWG

Figure 1.3. Landfill layout map.

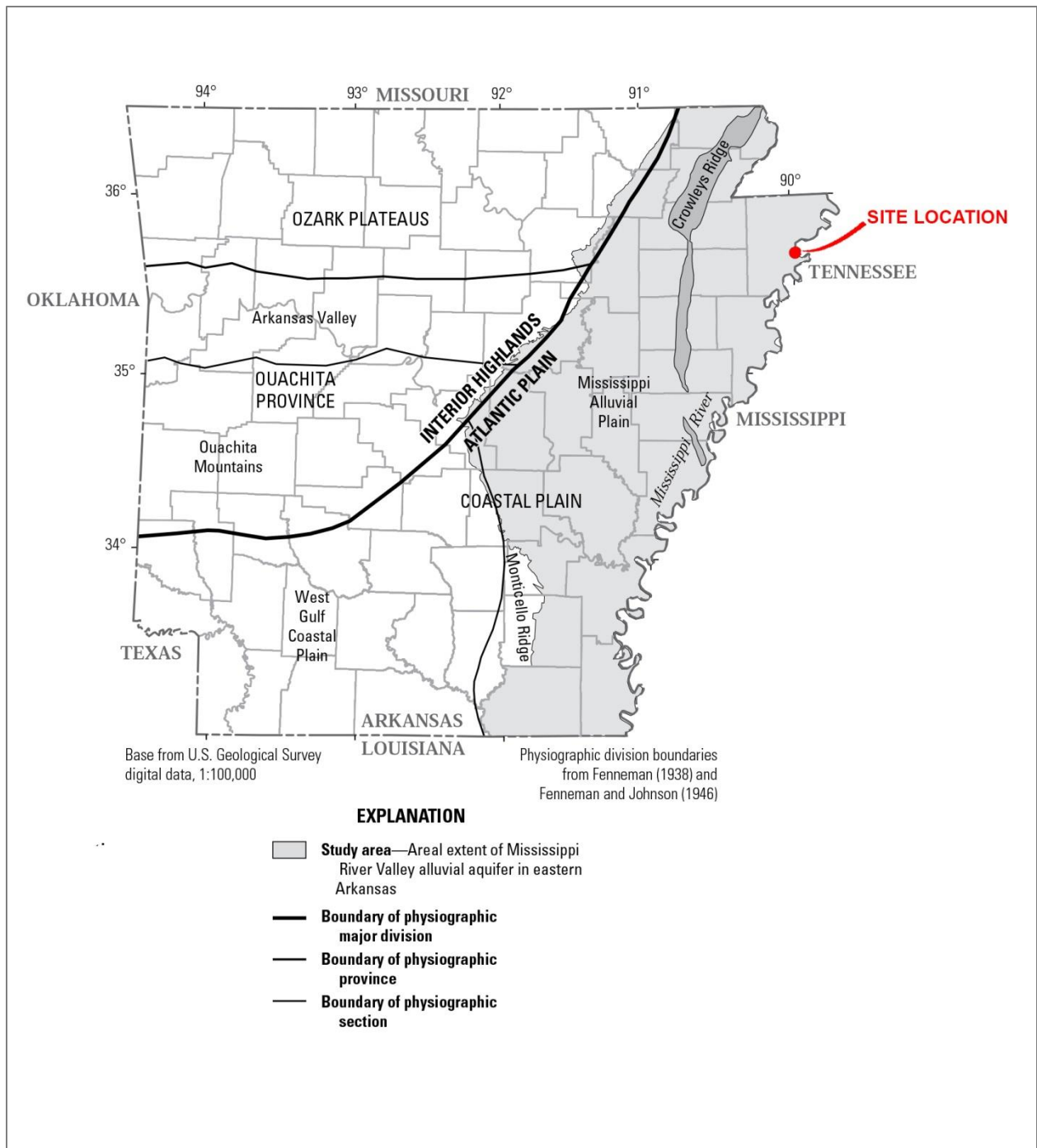


Figure 1.4. Physiographic location, Plum Point Energy Station (adapted from Schrader 2015).

1.4 Site Hydrogeology

A detailed site investigation was performed in 2001 as part of the DEQ permit application for the landfill. The findings from the investigation were submitted to DEQ by Genesis Environmental Consulting, Inc. (GEC), in a geotechnical and hydrogeological investigation (GHI) report (GEC 2001). Findings from the GHI indicated that the confining unit above the alluvial aquifer ranges from 0 ft to over 30 ft thick, with an average thickness of 15 ft at the site. Confining unit soils are comprised of brown to grey clay, silty clay, and sandy clays. Underlying the confining unit are fine- to coarse-grained sands of the alluvial aquifer, with fine- to coarse-grained gravel encountered at depth. Based on one deep boring, completed to a depth of 200 ft below ground surface (bgs), the coarse-grained aquifer materials reach a depth of 190 ft bgs in the vicinity of the landfill.

Laboratory geotechnical testing of confining unit soils indicate a vertical permeability ranging from 6.7×10^{-4} centimeters per second (cm/s) to 3.7×10^{-8} cm/s. Field results from one aquifer pumping test and multiple aquifer slug tests indicate that the uppermost alluvial aquifer has an average hydraulic conductivity of 1.09×10^{-2} cm/s (GEC 2001). The GHI reported an effective porosity for the aquifer of 27% (GEC 2001), which agrees with published values ranging from 10% to 30% for similar aquifer materials (EPA 1998, Yu et al. 2015).

The direction of groundwater flow at the landfill is variable and changes from eastward to westward on a seasonal basis (FTN 2017a). The direction of flow is influenced by the river stage of the adjacent Mississippi River (Kresse et al. 2014).

1.5 General Groundwater Quality

Regionally, groundwater in the alluvial aquifer is a calcium-bicarbonate water type with sodium, magnesium, chloride, sulfate, silica, and iron comprising the majority of the remaining dissolved ions (Kresse et al. 2014). Elevated concentrations of trace metals including iron, manganese, and arsenic are ubiquitous in the alluvial aquifer and thought to be elevated due to the presence of carbonaceous material within the aquifer that drives redox-sensitive parameters to dissolve in groundwater (Kresse and Fazio 2003, Gonthier 2003, Kresse and Clark 2008, Welch et al. 2009, Kresse et al. 2014). Concentrations of most parameters vary widely both

laterally and vertically in the aquifer (Kresse et al. 2014). Groundwater at the top of the aquifer is generally influenced by the quality of natural recharge (e.g., precipitation and surface waterbodies) and anthropogenic activity. Conversely, groundwater quality at the base of the aquifer is influenced heavily by the underlying confining formation (Kresse et al. 2014).

2.0 MONITORING NETWORK AND SCHEDULE

The following sections describe the certified monitoring well network, changes made to the network during 2020, sampling schedule, network maintenance, sampling methodology, and required laboratory analyses.

2.1 Monitoring Well Network

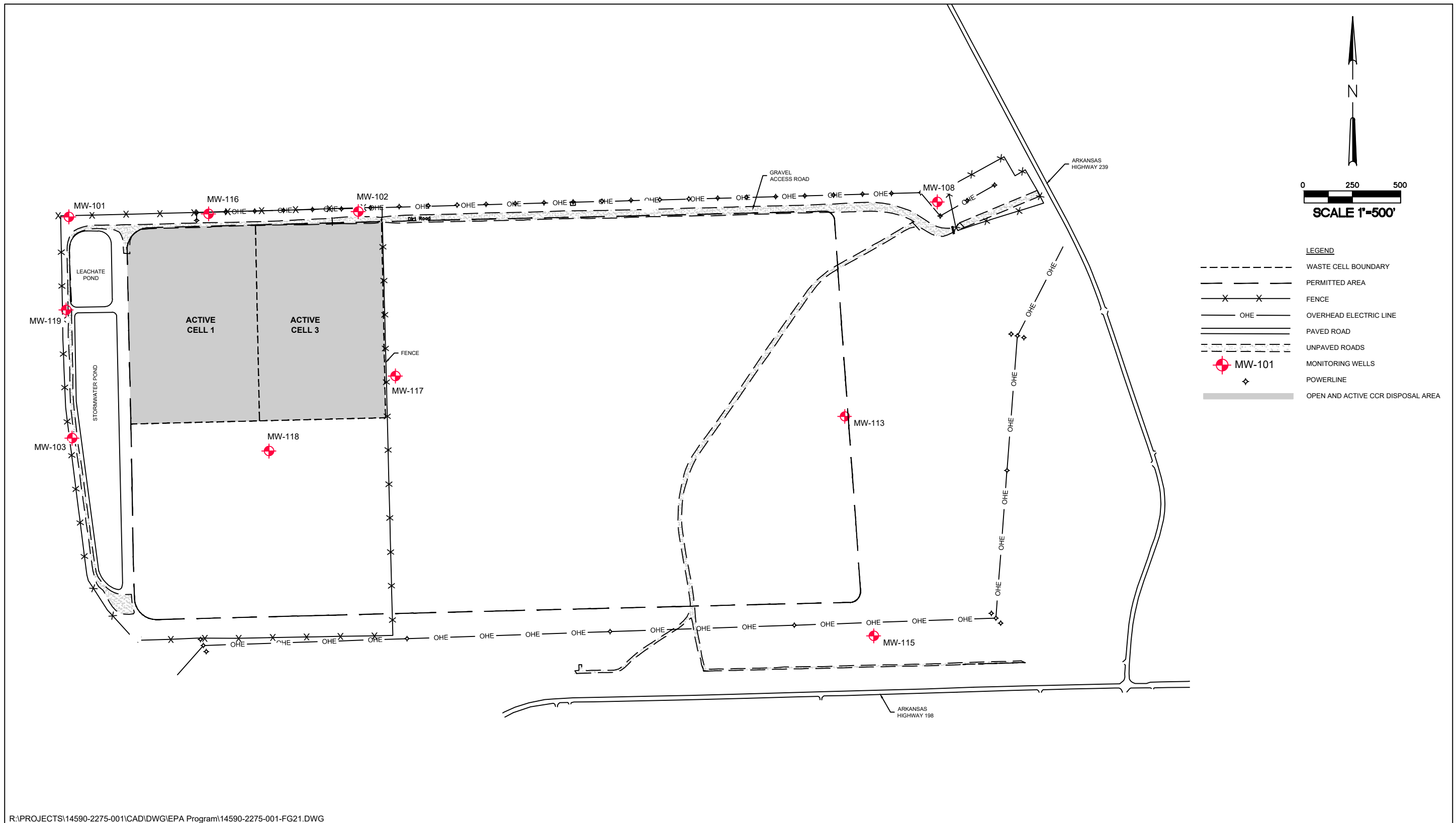
The certified groundwater monitoring network for the CCR rule includes the 10 monitoring wells shown on Figure 2.1. The wells are constructed of 2-inch, schedule 40 polyvinyl chloride (PVC) pipe, with 10-ft slotted well screens. A summary of well construction details is included in Table 2.1.

Table 2.1. Summary of well construction details.

Well Number	Well Installation Date	Ground Surface Elevation (ft NAVD ^[a])	Measuring Point Elevation ^(b) (ft NAVD)	Total Depth (ft below measuring point)	Screened Interval (ft NAVD)
MW-101	4/9/2001	239.4	242.75	33.6	219.2-209.2
MW-102	4/9/2001	240.5	243.99	30.2	223.8-213.8
MW-103	9/26/2007	240.5	243.25	32.8	220.5-210.5
MW-108	4/11/2001	241.8	245.11	32.4	222.7-212.7
MW-113	4/07/2009	241.5	244.63	35.9	223.7-208.7
MW-115	9/25/2007	240.4	243.55	33.0	220.6-210.7
MW-116	6/23/2015	239.3	243.97	31.9	222.5-212.5
MW-117	6/24/2015	239.4	242.53	34.2	218.5-208.5
MW-118	6/24/2015	238.0	241.23	31.4	220.2-210.2
MW-119	10/6/2016	243.6	246.53	35.4	221.5-211.5

Notes:

- North American Vertical Datum of 1988.
- Measuring point is the surveyed and marked point on the top of casing (TOC) of each monitoring well.



R:\PROJECTS\14590-2275-001\CAD\DWG\IEPA Program\14590-2275-001-FG21.DWG

Figure 2.1. Monitoring well locations, Plum Point Energy Station.

Each monitoring well is screened in the alluvial aquifer, the uppermost aquifer in the vicinity of the landfill. The direction of groundwater flow beneath the site is seasonally variable. As a result, there is not a hydraulically upgradient location with respect to cell 1 and cell 3. As allowed by §257.91(a)(1), the groundwater program utilizes wells for background water quality that are not hydraulically upgradient of the CCR management area. Monitoring wells MW-108, MW-113, and MW-115 (Figure 2.1) are used for this purpose because they are positioned outside the potential zone of impact from cells 1 and 3. The rationale for this is based on the age of the landfill, the estimated maximum rate of groundwater flow, and the distance of MW-108, MW-113, and MW-115 from the CCR management area (FTN 2017a).

2.2 Network Improvements During 2020

All of the 10 monitoring wells in the certified network were installed prior to 2020. No new wells were installed and none of the existing wells were altered or abandoned during 2020.

2.3 Sampling Schedule

In accordance with the CCR rule and the landfill's groundwater sampling and analysis plan (GWSAP), detection monitoring is scheduled to occur semiannually. The first half 2020 detection monitoring event was conducted during April. Based on statistical evaluation of the data set, verification sampling was performed during June, as discussed in Section 4.0. The second half 2020 detection monitoring event was conducted during October. Verification sampling was not required for the second half 2020 monitoring event.

Detection monitoring for the 2021 monitoring year is tentatively scheduled for April and October.

2.4 Monitoring Well Operation and Maintenance

The integrity of each monitoring well was inspected prior to commencement of groundwater sampling activities. Well casing, concrete pads, and bollards were inspected for any indications of damage and dedicated sampling equipment was assessed for visible damage. Noted damages and recommended repairs, if any, were communicated to PPSC.

2.5 Sampling Methodology

To ensure that monitoring results are an accurate representation of groundwater quality, sample collection follows the guidelines for sample collection, preservation, shipment, chain-of-custody (COC) control, and quality control outlined in the landfill's GWSAP (FTN 2017a). Groundwater sample collection during the 2020 monitoring periods was performed in accordance with the landfill's GWSAP and EPA guidelines (Puls and Barcelona 1996). Groundwater was sampled with a Geopump Peristaltic Series II Pump and linear low-density polyethylene tubing. Field parameters were measured during purging and sampling using a Hach 2100P portable turbidity meter and a handheld YSI MPS 556 or YSI ProPlus multiparameter instrument fitted with a flow-through cell. Field sampling forms for the 2020 monitoring events are provided in Appendix A.

2.6 Laboratory Analyses

Samples collected for each detection monitoring event are required to be analyzed for the 40 CFR Part 257 appendix III list of parameters provided in Table 2.2. Pace Analytical National (Pace), of Mt. Juliet, Tennessee, provided laboratory services during the detection monitoring period. Samples were analyzed in accordance with EPA's *Test Methods for Evaluating Solid Waste Physical/Chemical Methods* (SW-846) (EPA 1986b), or equivalent, and guidelines established by EPA. Laboratory reports from Pace are included in Appendix B.

Table 2.2. Appendix III parameters for groundwater detection monitoring.

Appendix III to Part 257 – Parameters for Detection Monitoring	
Boron	Sulfate
Calcium	Total dissolved solids (TDS)
Chloride	pH (field-measured)
Fluoride	

3.0 DATA PRESENTATION

This section presents the data collected during the 2020 monitoring events. Water level data are presented in Section 3.1, field-measured groundwater quality data are presented in Section 3.2, laboratory analytical data are presented in Section 3.3, and a review of quality assurance and quality control (QA/QC) measures is presented in Section 3.4.

3.1 Water Level Data

This section presents groundwater level measurements and groundwater flow characteristics determined from these measurements.

3.1.1 Water Level Measurements and Hydrograph

Static water levels were measured in all 10 monitoring wells prior to conducting any sampling activities for the April and October detection monitoring events. Water levels were measured using a Solinst 101 water level meter on April 6, 2020, and October 7, 2020, for the first and second half 2020 monitoring periods, respectively. Depth to water was measured to the nearest 0.01 ft from the measuring point (MP) located on the top of casing (TOC) of each well and recorded on the field water level data sheets included in Appendix A. Field water level measurements are tabulated in Table 3.1.

Table 3.1. Water level data.

Well ID	MP Elevation (ft NAVD88)	April 6, 2020		October 7, 2020	
		Depth to Water (ft below MP)	Water Elevation (ft NAVD88)	Depth to Water (ft below MP)	Water Elevation (ft NAVD88)
MW-101	242.75	4.69	238.06	19.63	223.12
MW-102	243.99	4.90	239.09	22.03	221.96
MW-103	243.25	5.79	237.46	20.29	222.96
MW-108	245.11	4.30	240.81	26.06	219.05
MW-113	244.63	4.80	239.83	24.05	220.58
MW-115	243.55	4.47	239.08	22.46	221.09
MW-116	243.97	5.48	238.49	21.39	222.58
MW-117	242.53	4.02	238.51	20.34	222.19
MW-118	241.23	3.40	237.83	18.53	222.70
MW-119	246.53	7.77	238.76	23.50	223.03

Hydrographs depicting water level elevations over time are included in Appendix C. As shown on the hydrograph, within-well water levels fluctuated seasonally as much as ± 24 ft over the period of record for the CCR rule program.

3.1.2 Direction of Groundwater Flow

Depth-to-water measurements were converted to feet NAVD88 and used to construct the potentiometric surface maps shown on Figures 3.1 and 3.2 (figures are included at the end of Section 3.0). As shown on Figure 3.1, groundwater flow beneath the active landfill was generally to the southwest during the April 2020 monitoring event. As shown on Figure 3.2, groundwater flow beneath the active landfill was generally to the east-northeast during the October 2020 monitoring event.

3.1.3 Rate of Groundwater Flow

The rate of groundwater flow beneath the landfill is estimated based on Darcy's law, modified to account for the open space available for groundwater flow within the aquifer. The resulting equation used to estimate the average linear groundwater velocity, or rate of flow, is shown below (Kuo 1999):

$$V_x = K/n_e(dh/dl)$$

Where: V_x = linear velocity,
 K = hydraulic conductivity,
 n_e = effective porosity, and
 dh/dl = hydraulic gradient.

The hydraulic conductivity (K) and the effective porosity (n_e) of the alluvial aquifer are 1.09×10^{-2} cm/sec and 27%, respectively, based on previous reports (GEC 2001). The hydraulic gradient (dh/dl) is calculated using water level elevations that most closely represent the flow line from upgradient to downgradient across cells 1 and 3. The hydraulic gradient was estimated to be 8.6×10^{-4} ft/ft during April 2020 and 5.9×10^{-4} ft/ft during October 2020 using the potentiometric surface maps shown on Figures 3.1 and 3.2, respectively. Based on these values,

V_x was calculated to be approximately 36 ft/year during April 2020 and 25 ft/year during October 2020. These values are consistent with historically observed flow rates at the site (FTN 2017a).

3.2 Field-Measured Water Quality Data

Groundwater sampling records for the 2020 monitoring events are included in Appendix A. Field-measured water quality parameters from the 2020 monitoring events are summarized in Table 3.2. A review of the field quality control samples is provided in Section 3.4.

3.3 Laboratory Analytical Data

Laboratory reports for sampling performed during the 2020 monitoring periods are included in Appendix B. A review of the laboratory quality control information is provided in Section 3.4. Reported measured values along with field-measured pH are summarized in Tables 3.3 and 3.4 for the first and second half of 2020 monitoring periods, respectively. EPA-promulgated maximum contaminant levels (MCLs) are shown for comparison purposes. Of the appendix III parameters listed in Tables 3.3 and 3.4, fluoride is the only parameter with an established MCL. As shown in Tables 3.3 and 3.4, none of the measured levels for fluoride were above the MCL of 4 mg/L. Data from these monitoring events are compiled in the landfill's historical groundwater database for appendix III parameters, included as Appendix D.

Table 3.2. Field-measured water quality data.

Well	Date	Conductivity ($\mu\text{mhos/cm}$)	pH (su)	Temperature (C)	Turbidity (NTU)
First Half 2020 Monitoring, April 2020					
MW-101	4/8/2020	645	6.8	17.8	2.6
MW-102	4/7/2020	661	6.6	17.6	0.6
MW-103	4/8/2020	560	6.7	17.4	3.1
MW-108	4/6/2020	879	6.9	19.4	3.6
MW-113	4/6/2020	551	6.7	18.0	2.8
MW-115	4/6/2020	642	6.7	17.9	9.0
MW-116	4/8/2020	607	6.6	19.5	2.3
MW-117	4/7/2020	537	6.6	17.4	0.3
MW-118	4/8/2020	530	6.1	17.8	2.7
MW-119	4/8/2020	691	6.6	19.1	2.2
Verification Sampling, First Half 2020, June 2020					
MW-117	6/22/2020	573	6.1	18.6	2.8
Second Half 2020 Monitoring, October 2020					
MW-101	10/9/2020	578	6.7	18.9	3.6
MW-102	10/9/2020	614	6.5	19.4	2.8
MW-103	10/8/2020	491	6.4	19.5	4.2
MW-108	10/7/2020	810	6.8	23.6	5.8
MW-113	10/7/2020	458	6.5	19.5	4.3
MW-115	10/7/2020	573	6.6	20.3	3.3
MW-116	10/9/2020	696	6.3	19.1	3.4
MW-117	10/8/2020	443	6.3	20.1	3.5
MW-118	10/8/2020	454	6.1	19.6	3.9
MW-119	10/8/2020	594	6.5	19.6	3.2

Table 3.3. Summary of appendix III results, first half of 2020.

Well ID	Date Collected	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
First Half 2020 Monitoring, April 2020								
MW-101	4/8/2020	0.0780 J	105	0.823 J	0.279	10.3	362	6.8
MW-102	4/7/2020	0.0890 J	116	2.79	0.199	84.7	461	6.6
MW-103	4/8/2020	0.0541 J	88.2	0.726 J	0.219	9.93	318	6.7
MW-108	4/6/2020	0.143 J	160	1.87	0.185	33.8	557	6.9
MW-113	4/6/2020	0.131 J	77.1	1.08	0.0943 J	3.61 J	332	6.7
MW-115	4/6/2020	0.0525 J	108	0.922 J	0.192	5.37	398	6.7
MW-116	4/8/2020	0.0768 J	98.3	2.50	0.184	38.7	365	6.6
MW-117	4/7/2020	0.0759 J	98.1 ^(a)	1.33	0.144 J	7.47	323	6.6
MW-118	4/8/2020	0.0739 J	82.9	1.62	0.152	16.6	304	6.1
MW-119	4/8/2020	0.0639 J	109	2.45	0.229	39.4	426	6.6
MW-117 DUP ^(b)	4/7/2020	0.0776 J	90.2	1.32	0.143 J	7.55	316	---
EB-2 ^(b)	4/8/2020	<0.200	<1.00	<1.00	<0.150	<5.00	<10.0	---
Verification Sampling, June 2020								
MW-117	6/22/2020	---	90.1	---	---	---	---	6.1
MW-117 DUP ^(c)	6/22/2020	---	90.3	---	---	---	---	---
EPA EB-1 ^(c)	6/22/2020	---	<1.00	---	---	---	---	---
EPA MCL		---	---	---	4	---	---	---

Notes:

“J” flag indicates that the analyte was detected at a level below the laboratory RDL; therefore the value is an estimate.

- Measurement shown represents result from a laboratory re-run of the groundwater sample for verification of initial laboratory results.
- MW-117 DUP was a duplicate sample of MW-117 and EPA EB-1 was a field equipment rinsate blank collected during the April sampling event.
- MW-117 DUP was a duplicate sample of MW-117 and EPA EB-1 was a field equipment rinsate blank collected during the June sampling event.

Table 3.4. Summary of appendix III results, second half of 2020.

Well ID	Date Collected	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
MW-101	10/9/2020	0.0556 J	107	1.75	0.309	9.91	389	6.7
MW-102	10/9/2020	0.0699 J	115	3.30	0.178	96.1	438	6.5
MW-103	10/8/2020	0.0763 J	91.9	3.55	0.234	15.0	319	6.4
MW-108	10/7/2020	0.111 J	151	2.23	0.185	42.4	515	6.8
MW-113	10/7/2020	0.0879 J	70.6	1.62	0.106 J	4.61 J	274	6.5
MW-115	10/7/2020	0.0704 J	99.4	0.864 J	0.180	2.97 J	334	6.6
MW-116	10/9/2020	0.0772 J	134	7.05	0.187	103	537	6.3
MW-117	10/8/2020	0.0721 J	84.1	0.793 J	0.137 J	7.75	298	6.3
MW-118	10/8/2020	0.0596 J	84.8	1.13	0.150 J	18.3	301	6.1
MW-119	10/8/2020	0.0588 J	109	2.22	0.251	52.9	415	6.5
MW-117 DUP	10/8/2020	0.0734 J	84.8	0.781 J	0.134 J	7.44	293	---
EPA EB-1	10/9/2020	<0.200	<1.00	<1.00	<0.150	<5.00	<10.0	---
EPA MCL		---	---	---	4	---	---	---

Notes:

“J” flag indicates that the analyte was detected at a level below the laboratory RDL; therefore the value is an estimate. MW-117 DUP was a duplicate of MW-117 and EPA EB-1 was a field equipment rinsate blank.

3.4 Quality Assurance and Quality Control

A review of laboratory and field QA/QC measures is presented below.

3.4.1 Review of Laboratory Quality Control Samples

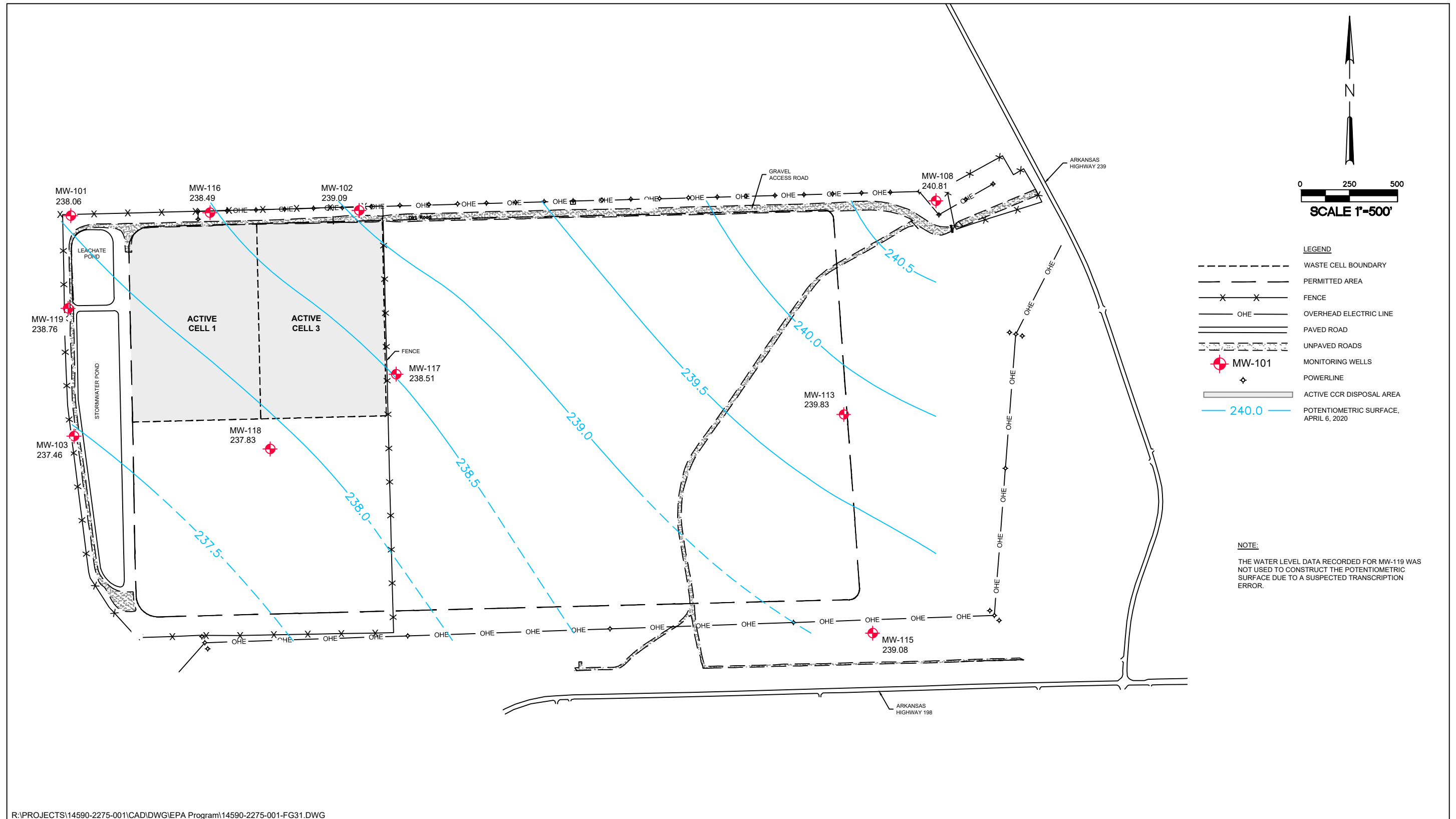
Based on a review of the data quality documentation provided by Pace in Appendix B, samples were received by the laboratory in good condition, properly preserved, at the correct temperature, and were analyzed within holding times. The overall quality of the data relative to the contaminants of concern was acceptable and generally met method-specific requirements for precision and accuracy.

3.4.2 Review of Field Quality Control Samples

Field QA/QC samples include field duplicates and field equipment blanks. Field duplicates are two samples taken from the same well and collected as close to each other in time as practical. Data from the duplicate pair are compared to evaluate the level of precision associated with the sampling and analytical methods. Field equipment rinsate blanks are

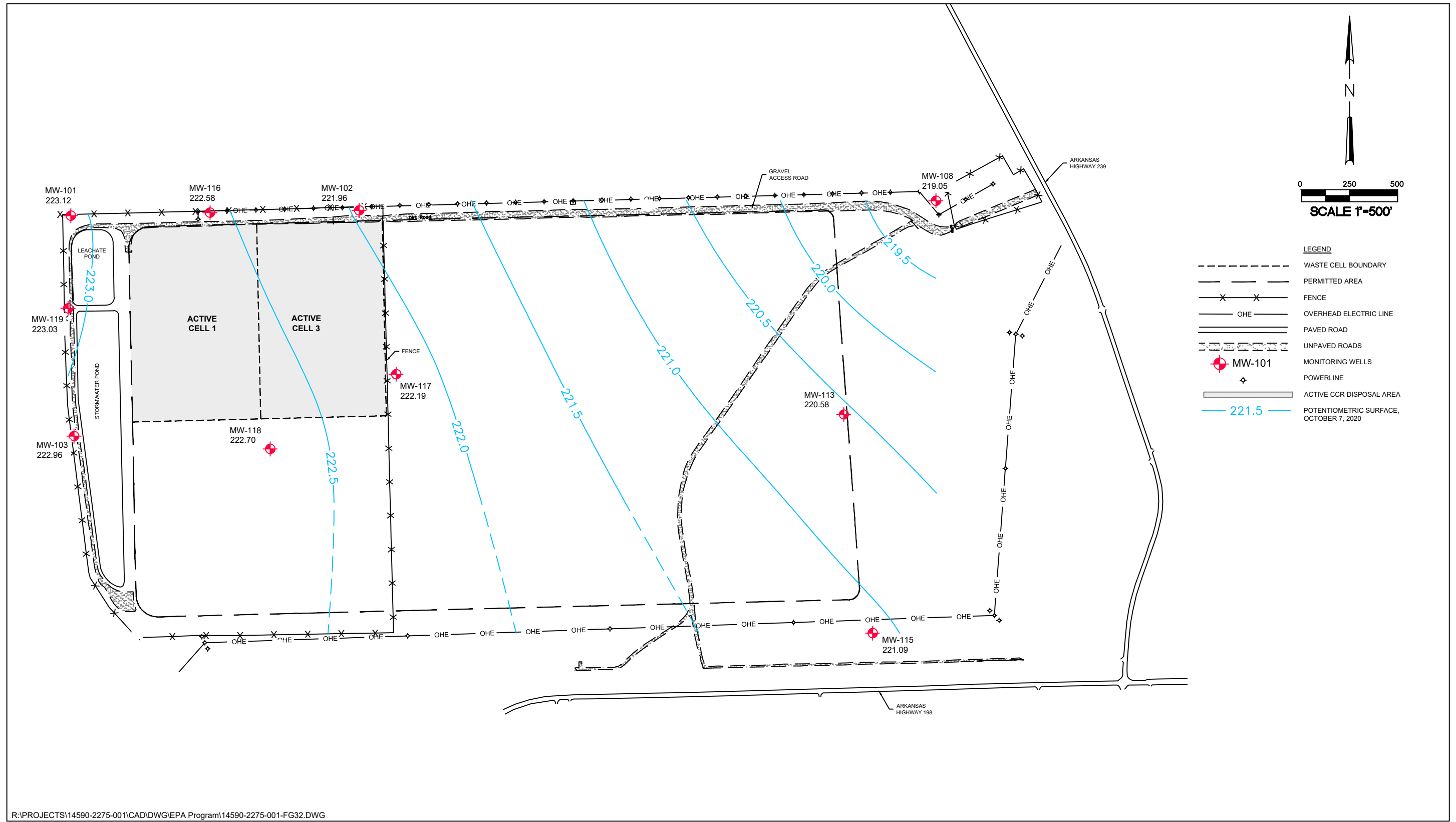
prepared by pouring deionized water over decontaminated sampling equipment. Equipment blank results are used to verify that proper protocols for equipment decontamination were followed in the field. In accordance with the landfill's GWSAP, a minimum of one duplicate sample and one equipment rinsate blank is to be collected per sampling event, or one per 20 groundwater samples collected.

In accordance with the GWSAP, field QA/QC samples were collected in conjunction with groundwater sampling activities for this monitoring period. All QA/QC samples were handled in the same manner as groundwater samples with respect to sample collection, packaging, shipping, preservation, and COC procedures. A review of the field QA/QC samples is performed upon receipt of the data from the laboratory. Field duplicate pairs are evaluated to verify that the duplicate pair showed reasonable precision for analyzed parameters by calculating the relative percent difference (RPD) for parameters where the detected level was at least five times the laboratory RDL and where neither result was qualified or suspected of contamination. Calculated RPDs were below the quality control limit of 20% for all duplicate pairs evaluated, indicating that field methods produced samples with an acceptable level of reproducibility. Results for the equipment rinsate blanks were all below their respective laboratory RDLs, indicating field decontamination methods were effective.



R:\PROJECTS\14590-2275-001\CAD\DWG\IEPA Program\14590-2275-001-FG31.DWG

Figure 3.1. Potentiometric surface, April 6, 2020.



R:\PROJECTS\14590-2275-001\CAD\DWG\IEPA Program\14590-2275-001-FG32.DWG

Figure 3.2. Potentiometric surface, October 7, 2020.

4.0 STATISTICAL EVALUATION

This section describes the statistical approach and evaluation of the detection monitoring data collected during 2020. Groundwater quality data were evaluated using the statistical software *Sanitas version 9.6*. Statistical analyses of the data were performed in accordance with the landfill's SAP.

4.1 Statistical Program Design

4.1.1 Statistical Approach

The statistical approach for groundwater monitoring at the landfill is described in the facility's SAP and adheres to recommendations in EPA's *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, released in March 2009 (Unified Guidance). Groundwater quality data collected for detection monitoring are evaluated with either an intrawell prediction limit combined with a "1 of 2" retesting strategy or with the Mann-Kendall/Sen's Slope test for trends. The technical basis for selecting these tests is discussed in the facility's SAP. Each test and its appropriate application is briefly discussed below.

A prediction limit tests for the likelihood that a new monitoring value (compliance value) comes from the same population as background data. Prediction limit analysis combined with retesting (verification sampling) is effective at reducing a monitoring program's site-wide false positive rate (SWFPR) and improving the statistical power of the monitoring program. The prediction limit test requires a minimum of 8 to 10 background values that are statistically independent and that exhibit stationarity. Retesting, or verification sampling, is performed if an initial sampling result exceeds a prediction limit. The "1 of 2" retesting strategy requires one verification sample be obtained within the same monitoring period as the initial exceedance. If the measured value in the verification sample also exceeds the prediction limit, then a statistically significant increase (SSI) (or statistically significant decrease [SSD] in the case of pH) is declared.

If data characteristics do not meet the requirements for a prediction limit test, the well-parameter pair is tested using the Mann-Kendall/Sen’s Slope test for trends, as recommended by the Unified Guidance. If a statistically significant increasing trend (or statistically significant decreasing trend in the case of pH) is indicated, then this is evidence of possible deteriorating groundwater quality. While there is no explicit retesting strategy for the Mann-Kendall/Sen’s Slope test (as there is for prediction limits), retesting can be applied (Cameron 2015).

Background data sets were updated, where applicable, prior to the first half of 2020 monitoring period. Results of the evaluation are summarized in Appendix E.

4.1.2 Site-Wide False Positive Rate and Statistical Power

The Unified Guidance recommends that detection monitoring programs have adequate statistical power and an SWFPR (alpha) value of 10% over a one-year period of testing. As a result, the semiannual SWFPR is fixed at 5%. The magnitude of the per-test alpha will vary depending on how many statistical tests are required per semiannual evaluation. Input values used to determine the per-test alpha for intrawell prediction limit analyses, combined with a “1 of 2” retesting strategy are listed in Table 4.1.

Table 4.1. Values used to determine test alpha and power curve.

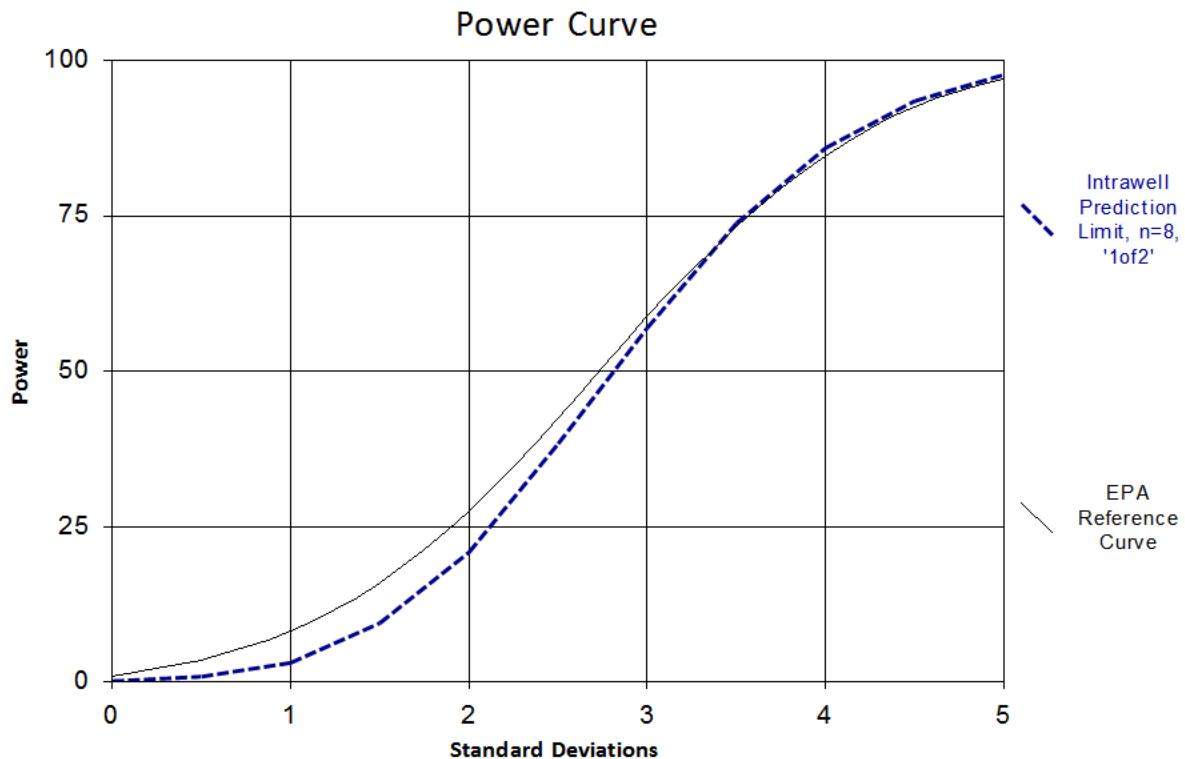
Certified Well Network	
Statistical Test	Intrawell Prediction Limit
Number of Compliance Wells (w)	7
Minimum Background Sample Size (n)	8
Number of Constituents (c)	6
Resample Strategy	1 of 2
Semiannual SWFPR	0.05

Statistical power is inversely related to the SWFPR and is an estimate of the rate at which false negative results will occur. To gauge statistical power, the Unified Guidance recommends the use of the EPA Reference Power Curve (ERPC) to estimate the ability of any individual test to identify an exceedance above background. Any single statistical test should have the ability to

detect an exceedance 55% to 60% of the time at three standard deviations (3σ) above background and 80% to 85% of the time at 4σ above background. Input values for the detection monitoring program's power curve are listed in Table 4.1 and discussed below.

Figure 4.1 depicts the power curve for the well network plotted against the ERPC. This curve shows that any single test is expected to detect exceedances approximately 57% of the time at levels 3σ above background and 87% of the time at levels 4σ above background. Given this comparison, the statistical power of the landfill's detection monitoring program exceeds EPA recommendations.

Sanitas™ v.9.6.23 Sanitas software licensed to FTN Associates. UG



kappa = 2.841, based on 7 compliance wells and 6 constituents, evaluated semi-annually (this report reflects annual total).

Figure 4.1. ERPC versus landfill power curve for detection monitoring.

4.2 Exploratory Data Analysis

Exploratory data analysis (EDA) includes viewing data graphically to identify apparent trends or excursions from normal ranges. To accomplish this, period-of-record data were screened using time-series plots, box-and-whiskers diagrams, and outlier tests. Time-series plots are used to visualize changes in data over time. Box-and-whiskers diagrams provide a graphic depiction of the mean, median, minimum, maximum, and interquartile range of a data set to assist with visualizing the variation in groundwater quality within and across wells. Outlier tests help identify values that are extremely different from other values in a given data set. Section 4.2.1 summarizes observations made from time-series and box-and-whiskers diagrams. Evaluation for the presence of outliers is discussed in Section 4.2.2. The graphical plots from the EDA evaluation are included in Appendix F.

4.2.1 Time-Series Plots and Box-and-Whiskers Diagrams

The following observations are based on a review of the time-series plots and box-and-whiskers diagrams (Appendix F):

- Boron values are below the laboratory RDL (represented as hollow values on the time-series plots) for all wells for the period of record, with the exception of one detection above the RDL at background well MW-108.
- Calcium, chloride, fluoride, sulfate, and TDS values are variable across the network.
- Measured pH is generally similar across the well network.¹

4.2.2 Identification of Outliers

Period-of-record data for statistically evaluated wells were evaluated to identify possible outliers in the April and October 2020 data sets (Appendix F). Dixon's outlier test was applied to data sets with a normal distribution, or to populations that could be mathematically transformed

¹ As documented in prior annual reports (FTN 2018, 2019, 2020), multiple pH values measured during the July 2016 background sampling event were anomalous and were suspected to be the result of equipment malfunction. These values were flagged with an "R" in the historical database as part of a background data review completed prior to the first half 2020 monitoring period. Data flagged with an "R" are excluded from statistical evaluations and are not shown on distributional plots.

so they have a normal distribution. For data sets that did not have a normal distribution, the non-parametric Tukey's outlier screening was applied. Plots are included in Appendix F. Outlier testing identified one outlier in the April 2020 data set: boron at MW-103 was statistically low compared to the period of record data set; however, this datum is a trace value (an estimated value below the laboratory reporting limit) compared against an otherwise nondetect data set. No statistically significant outliers were identified in the October 2020 data set.

4.3 Statistical Evaluation Results

Groundwater quality data from the 2020 monitoring periods were statistically evaluated if they were detected at or above the laboratory RDL. Results detected below the RDL but above a method detection limit ("trace" values) are estimated values and therefore are not statistically evaluated. Trace values are flagged with a "J" in the laboratory reports provided in Appendix B and in the historical database included in Appendix D. Statistical analyses are not performed on nondetect data, which are flagged with a "U" in the laboratory reports (Appendix B) and represented in the historical database as less than (<) the RDL value for the method used (Appendix D).

4.3.1 Intrawell Prediction Limit Analysis, First Half of 2020

In accordance with 257.93(h), intrawell prediction limit analyses were performed on all detected appendix III parameters, except as noted in Section 4.3.2, using the background data sets identified in Appendix E. Results from the first half of 2020 monitoring period are summarized in Table 4.2 and graphical plots of the evaluation are included in Appendix G. One previously confirmed exceedance, TDS at MW-117, was identified in the April 2020 data set, along with one unverified exceedance for calcium at MW-117, as shown in Table 4.2. Measurements for all other well-parameter pairs were below calculated intrawell prediction limits. In accordance with the facility's SAP and "1 of 2" retesting strategy, verification sampling was performed during June 2020 for the potential exceedance for calcium at MW-117. As shown in Table 4.2, the measured value in the verification sample exceeded the prediction limit, resulting in a confirmed SSI.

Table 4.2. Summary of statistically significant results, intrawell prediction limit analysis, first half of 2020.

Well	Parameter	Prediction Limit (mg/L)	April 2020 Observation (mg/L)	June 2020 Verification (mg/L)	SSI Confirmed?
MW-117	Calcium	87.44	98.1 ^(a)	90.1	Yes
MW-117	TDS	301.8	323	NA ^(b)	Yes

Notes:

- Measurement shown represents result from a laboratory re-run of the groundwater sample for verification of initial laboratory results.
- SSI was previously confirmed; verification sampling was not performed.

In response to the confirmed SSIs for calcium and TDS at MW-117 identified during the first half of 2020 detection monitoring period, PPSC completed a successful alternate source demonstration (ASD), in accordance with §257.94(e)(2). The ASD was certified by an Arkansas-registered professional engineer and posted to the facility's operating record on August 3, 2020. As required by §257.94(e)(2), a copy of the ASD is included in Appendix H. Based on the successful ASD, the facility continued with detection monitoring in accordance with §257.94.

4.3.2 Mann-Kendall/Theil-Sen Trend Line Test, First Half of 2020

Well-parameter pairs tested for compliance using the Mann-Kendall/Theil-Sen trend line test due to significant trends in background data sets are identified in Table E.2 of Appendix E. Period-of-record data for each well-parameter pair were analyzed and test plots are included in Appendix G. The evaluation did not identify any statistically significant increasing trends (or decreasing in the case of pH) in the period-of-record data sets.

4.3.3 Intrawell Prediction Limit Analysis, Second Half of 2020

In accordance with 257.93(h), intrawell prediction limit analyses were performed on all detected appendix III parameters, except as noted in Section 4.3.4, using the background data sets identified in Appendix E. Graphical plots of the evaluation are included in Appendix G. Measurements for all well-parameter pairs during the second half of 2020 were below calculated intrawell prediction limits.

4.3.4 Mann-Kendall Test/Theil-Sen Trend Line, Second Half of 2020

Well-parameter pairs tested for compliance using the Mann-Kendall/Theil-Sen trend line test due to significant trends in background data sets are identified in Table E.2 of Appendix E. Period-of-record data for each well-parameter pair were analyzed and test plots are included in Appendix G. The evaluation did not identify any statistically significant increasing trends (or decreasing trends in the case of pH) in the period-of-record data sets.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The following recommendations and conclusions are based on a review of data for the landfill from the 2020 monitoring periods:

1. The direction of groundwater flow at the landfill is seasonally variable. Flow across the active landfill was to the southwest and to the east-southeast during the first and second half of 2020 monitoring events, respectively.
2. Of the parameters evaluated, only fluoride has an EPA MCL. None of the reported values in groundwater were measured above the MCL for fluoride.
3. Time-series plots and box-and-whiskers diagrams show variability across the well network for calcium, chloride, fluoride, sulfate, and TDS. Values for boron and pH are relatively similar across all wells, with measured levels of boron being below the laboratory RDL for all wells except upgradient well MW-108 for the period of record.
4. A comparison of the statistical power curve for the detection monitoring program to the EPA Reference Power Curve indicates that the detection rates for statistical exceedances meet EPA recommendations.
5. Statistical evaluation of the first half of 2020 data set identified confirmed SSIs for calcium and TDS at MW-117. A successful ASD was completed for the SSIs and posted to the facility's operating record on August 3, 2020. The facility continued with detection monitoring in accordance with §257.94.
6. Statistical evaluation of the second half of 2020 data set did not identify any SSIs. The facility will continue with detection monitoring in accordance with §257.94.

6.0 REFERENCES

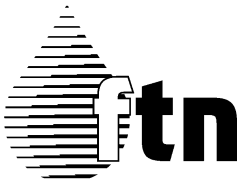
- EPA [Environmental Protection Agency]. 1986. *RCRA Ground-Water Monitoring Technical Enforcement Guidance Document*. Dublin, OH: National Water Well Association.
- . 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* [EPA/600/R-98/128]. Washington, DC: US Environmental Protection Agency, Office of Research and Development. 248 pp.
- . 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* [EPA 530-R-09-007]. Washington, DC: Office of Resource Conservation and Recovery, Program Implementation and Information Division, US Environmental Protection Agency. March 2009.
- FTN [FTN Associates, Ltd.]. 2017a. *Groundwater Monitoring Network Evaluation, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd.
- . 2017b. *Groundwater Sampling and Analysis Plan, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd.
- . 2017c. *Statistical Analysis Plan, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd.
- . 2018. *Plum Point Energy Station Landfill, Groundwater Monitoring and Corrective Action 2017 Annual Report*. Little Rock, AR: FTN Associates, Ltd.
- . 2019. *Plum Point Energy Station Landfill, Groundwater Monitoring and Corrective Action 2018 Annual Report*. Little Rock, AR: FTN Associates, Ltd.
- . 2020. *Plum Point Energy Station Landfill, Groundwater Monitoring and Corrective Action 2019 Annual Report*. Little Rock, AR: FTN Associates, Ltd.
- GEC [Genesis Environmental Consulting, Inc.]. 2001. *Geotechnical and Hydrogeological Investigation, Plum Point Energy Station, July 2001* [DEQ DIN 14702]. Little Rock, AR: Genesis Environmental Consulting, Inc.
- Gibbons, Robert D. 1994. *Statistical Methods for Groundwater Monitoring*. New York: John Wiley & Sons, Inc.
- Gonthier, G.J. 2003. *Quality of Groundwater in Pleistocene and Holocene Subunits of the Mississippi River Alluvial Aquifer, 1998* [Water-Resources Investigations Report 2003 4202]. Jackson, MS: National Water-Quality Assessment Program, US Geological Survey.

- Kresse, T.M., P.D. Hays, K.R. Merriman, J.A. Gillip, D.T. Fugitt, J.L. Spellman, A.M. Nottmeier, D.A. Westerman, J.M. Blackstock, and J.L. Battreal. 2014. *Aquifers of Arkansas—Protection, Management, and Hydrologic and Geochemical Characteristics of Groundwater Resources in Arkansas* [Scientific Investigations Report 2014–5149]. Prepared in cooperation with the Arkansas Natural Resources Commission. Reston, VA: US Geological Survey. 334 pp. doi: <http://dx.doi.org/10.3133/sir20145149>.
- Kuo, J. 2009. *Practical Design Calculations for Groundwater and Soil Remediation*. Boca Raton, FL: Lewis Publishers.
- Peterson, J.C., M.E. Broom, and W.V. Bush. 1985. *Geohydrologic Units of the Gulf Coastal Plain in Arkansas* [USGS Water Resources Investigations Report 85-4116]. Little Rock, AR: US Geological Survey in cooperation with the Arkansas Department of Pollution Control and Ecology and the Arkansas Geological Commission. 20 p.
- Pugh, A.L., P.W. Westerfield, and D.T. Poynter. 1997. *Thickness of the Quaternary Alluvial and Terrace Deposits Comprising the Mississippi River Valley Alluvial Aquifer in Eastern Arkansas* [USGS Water Resources Investigations Report 97-4049]. Little Rock, AR: US Geological Survey in cooperation with the Arkansas Geological Commission. 1 plate.
- Puls, R.W., and M.J. Barcelona. 1996. *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* [EPA 540/S-95/504]. Washington, DC: US Environmental Protection Agency, Office of Solid Waste and Emergency Response.
- Ryling, R.W. 1960. *Ground-water Potential of Mississippi County, Arkansas* [Water Resources Circular No. 7]. Little Rock, AR: Arkansas Geological and Conservation Commission in cooperation with the US Geological Survey. 87 p.
- Sanitas Technologies. 2018. *Sanitas User Guide, Version 9.6*. Loveland, CO: Sanitas Technologies.
- Schrader, T.P. 2015. *Water Levels and Water Quality in the Mississippi River Valley Alluvial Aquifer in Eastern Arkansas, 2012* [Scientific Investigations Report 2015-5059]. Prepared in cooperation with the Arkansas Natural Resources Commission and the Arkansas Geological Survey. Reston, VA: US Geological Survey.
- Welch, H.L., J.A. Kingsbury, W.T. Roland, and R.C. Seanor. 2009. *Quality of Shallow Groundwater and Drinking Water in the Mississippi Embayment-Texas Coastal Uplands Aquifer System and the Mississippi River Valley Alluvial Aquifer, South-Central United States, 1994-2004* [Scientific Investigations Report 2009-5091]. Reston, VA: National Water-Quality Assessment Program, US Geological Survey.
- Yu, C., S. Kamboj, C. Wang, and J. Cheng. 2015. *Data Collection Handbook to Support Modeling Impacts of Radioactive Material in Soil and Building Structures* [ANL/EVS/TM-14/4]. Argonne, IL: US Department of Energy, Argonne National Laboratory, Environmental Science Division.
-

APPENDIX A

Field Sampling Forms

First Half 2020 Sampling Event



Groundwater Level Data Sheet

Project Name: Plum Point Energy Station	Project Number: 14590-2275-001	Investigator: Michael Clayton	Page 1 of 1
Weather Conditions: partly cloudy, 78°F	Measuring Device: Solinst 101	Transcribed by: Heather Ferguson	

Well ID	Date	Time	Depth to Water (feet below TOC)	Damages/Repairs		
MW-101	4/6/2020	1139	4.69	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-102	4/6/2020	1150	4.90	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-103	4/6/2020	1132	5.79	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-108	4/6/2020	1018	4.30	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-113	4/6/2020	1011	4.80	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-115	4/6/2020	1005	4.47	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-116	4/6/2020	1145	5.48	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-117	4/6/2020	1200	4.02	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-118	4/6/2020	1117	3.40	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-119	4/6/2020	1124	7.77	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-101	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 79	Wind: south-southwest at 14 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed: none												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
Time	24-hour	1139	1220	1231	1257	1309	
Depth to Water	feet	4.69	4.60	4.60	4.60	4.60	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1225	1230	1235	1240	1245	1250	1255					Remarks
Purge vol.	gallons												
Purge rate	mL/min	290	290	290	290	290	290	290					
pH	su	6.6	6.6	6.7	6.7	6.8	6.8	6.8					
Temp.	°C	17.8	17.9	17.9	17.9	17.8	17.8	17.8					
Conductivity	µS/cm	646	646	647	646	643	643	645					
DO	mg/L	0.7	0.5	0.4	0.3	0.4	0.3	0.3					
ORP	mV	107.2	100.8	94.3	93.7	95.8	96.0	95.5					
Turbidity	NTU	6.5	4.1	3.2	3.0	2.8	2.8	2.6					
Color/tint	--	clear	clear	clear	clear	clear	clear	clear					
Odor	--	none	none	none	none	none	none	none					

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-101	4/8/2020	1305	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-102	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/7/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy/light rain	Air Temp. (°F): 75	Wind: south-southwest at 12 mph
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	Well diameter: inches 2 Well locked? Total depth from TOC: feet <input checked="" type="checkbox"/> Yes TOC below/above ground: feet <input type="checkbox"/> No
Damages/repairs needed:		

Water Level Data

Measuring point description: <input type="checkbox"/> Mark/notch on TOC <input checked="" type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	
Time	24-hour	1150	1400	1421	1503	1521	
Depth to Water	feet	4.90	4.87	4.87	4.88	4.88	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1410	1415	1420	1425	1430	1435	1440	1445	1450	1455	1500	Remarks
Purge vol.	gallons												
Purge rate	mL/min	310	310	310	310	310	310	310	310	310	310	310	
pH	su	6.7	6.5	6.6	6.6	6.6	6.7	6.4	6.5	6.6	6.6	6.6	
Temp.	°C	17.3	17.1	17.2	17.2	17.2	17.3	17.3	17.3	17.5	17.7	17.6	
Conductivity	µS/cm	670	669	667	666	665	663	663	662	661	660	661	
DO	mg/L	7.3	2.5	1.5	1.4	1.2	1.1	0.9	0.7	0.5	0.3	0.3	
ORP	mV	81.8	70.9	58.3	59.3	59.0	59.0	72.6	67.0	68.1	68.5	69.2	
Turbidity	NTU	0.8	0.7	1.0	1.4	1.1	138	1.1	1.0	0.8	0.7	0.6	
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	
Odor	--	none	none	none	none	none	none	none	none	none	none	none	

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-102	4/7/2020	1510	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-103	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 76	Wind: southwest @ 9 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
Time	24-hour	1132	1020	1032	1056	1110	
Depth to Water	feet	5.79	5.72	5.72	5.72	5.72	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:			Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet		Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1025	1030	1035	1040	1045	1050	1055						Remarks
Purge vol.	gallons													
Purge rate	mL/min	285	285	285	285	285	285	285						
pH	su	6.4	6.5	6.6	6.6	6.6	6.7	6.7						
Temp.	°C	17.2	17.2	17.2	17.2	17.2	17.3	17.4						
Conductivity	µS/cm	559	560	561	561	562	560	560						
DO	mg/L	2.8	0.9	0.7	0.6	0.6	0.5	0.5						
ORP	mV	113.5	107.6	101.8	101.2	101.9	99.9	99.8						
Turbidity	NTU	6.7	5.3	3.2	3.0	2.7	2.4	3.1						
Color/tint	--	clear	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-103	4/8/2020	1105	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-108	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/6/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy	Air Temp. (°F): 83	Wind: south-southwest @ 9 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/6/2020	
Time	24-hour	1018	1525	1541	1607	1618	
Depth to Water	feet	4.30	4.31	4.31	4.31	4.31	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1530	1535	1540	1545	1550	1555	1600	1605				Remarks
Purge vol.	gallons												
Purge rate	mL/min	290	290	290	290	290	290	290	290				
pH	su	6.8	6.8	6.8	6.8	6.9	6.9	6.9	6.9				
Temp.	°C	18.5	18.4	18.6	18.9	19.3	19.2	19.2	19.4				
Conductivity	µS/cm	886	886	885	883	883	884	884	879				
DO	mg/L	4.7	1.9	1.6	1.6	1.4	1.4	1.4	1.3				
ORP	mV	87.6	85.8	83.7	82.2	81.8	82.7	83.3	83.8				
Turbidity	NTU	5.2	3.8	4.0	3.2	3.1	3.2	3.2	3.6				
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear				
Odor	--	none	none	none	none	none	none	none	none				

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-108	4/6/2020	1615	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-113	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/6/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 83	Wind: south-southwest @ 8 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/6/2020	
Time	24-hour	1011	1420	1437	1458	1507	
Depth to Water	feet	4.80	4.79	4.79	4.79	4.79	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1425	1430	1435	1440	1445	1450	1455					Remarks
Purge vol.	gallons												
Purge rate	mL/min	260	260	260	260	260	260	260					
pH	su	5.3	6.7	6.6	6.7	6.7	6.6	6.7					
Temp.	°C	19.4	17.5	17.9	18.0	17.9	17.9	18.0					
Conductivity	µS/cm	524	560	556	554	553	552	551					
DO	mg/L	5.7	4.5	4.6	4.6	4.5	4.4	4.4					
ORP	mV	98.4	75.0	75.3	74.9	75.6	77.0	78.3					
Turbidity	NTU	8.3	4.7	6.0	3.2	3.6	3.6	2.8					
Color/tint	--	clear	clear	clear	clear	clear	clear	clear					
Odor	--	none	none	none	none	none	none	none					

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-113	4/6/2020	1505	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-115	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/6/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 81	Wind: south-southwest @ 8 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/6/2020	4/6/2020	4/6/2020	4/6/2020	
Time	24-hour	1005	1300	1321	1403		
Depth to Water	feet	4.47	4.47	4.49	4.49	4.49	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:			Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible						Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC				
Purge depth	feet		Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No										
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1310	1315	1320	1325	1330	1335	1340	1345				Remarks
Purge vol.	gallons												
Purge rate	mL/min	290	290	290	290	290	290	290	290				
pH	su	6.9	6.8	6.8	6.8	6.7	6.8	6.7	6.7				
Temp.	°C	16.9	17.0	17.3	17.5	17.8	17.5	17.8	17.9				
Conductivity	µS/cm	649	646	647	646	645	646	643	642				
DO	mg/L	4.2	2.9	5.6	2.3	2.1	2.1	1.9	1.8				
ORP	mV	58.4	68.6	63.8	59.1	59.8	60.4	61.1	61.6				
Turbidity	NTU	27.5	20.1	18.6	14.2	9.8	7.4	8.6	9.0				
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear				
Odor	--	none	none	none	none	none	none	none	none				

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-115	4/6/2020	1355	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-116	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 83	Wind: south-southwest @ 14 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
Time	24-hour	1145	1318	1327	1358	1409	
Depth to Water	feet	5.48	5.40	5.40	5.41	5.41	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC								
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No												
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1325	1330	1335	1340	1345	1350	1355						Remarks
Purge vol.	gallons													
Purge rate	mL/min	300	300	300	300	300	300	300						
pH	su	6.4	6.5	6.5	6.6	6.6	6.6	6.6						
Temp.	°C	19.3	19.3	19.3	19.3	19.5	19.7	19.5						
Conductivity	µS/cm	612	612	609	607	606	606	907						
DO	mg/L	1.5	0.5	0.5	0.3	0.3	0.3	0.3						
ORP	mV	87.4	74.4	73.9	73.6	77.1	77.4	79.0						
Turbidity	NTU	2.9	2.0	2.1	2.6	2.5	2.1	2.3						
Color/tint	--	clear	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-116	4/8/2020	1405	2	0	
EB-1	4/8/2020	1505	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-117	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/7/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy	Air Temp. (°F): 75	Wind: south-southwest @ 11 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/7/2020	4/7/2020	4/7/2020	4/7/2020	
Time	24-hour	1200	1535	1546	1612	1623	
Depth to Water	feet	4.02	3.94	3.95	3.95	3.96	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:			Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet		Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1540	1545	1550	1555	1600	1605	1610						Remarks
Purge vol.	gallons													
Purge rate	mL/min	300	300	300	300	300	300	300						
pH	su	6.4	6.4	6.5	6.6	6.6	6.6	6.6						
Temp.	°C	17.1	17.2	17.2	17.2	17.4	17.5	17.4						
Conductivity	µS/cm	545	560	539	538	538	537	537						
DO	mg/L	1.9	1.0	0.7	0.7	0.7	0.6	0.6						
ORP	mV	75.3	74.5	72.4	65.0	70.0	69.4	68.9						
Turbidity	NTU	0.4	0.4	0.5	0.0	0.3	0.3	0.3						
Color/tint	--	clear	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-117	4/7/2020	1620	2	0	
MW-117 DUP	4/7/2020	1625	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-118	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy	Air Temp. (°F): 72	Wind: southwest @ 8 mph
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	Well diameter: inches 2 Total depth from TOC: feet TOC below/above ground: feet
Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Damages/repairs needed:		

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
Time	24-hour	1117	0841	0903	0946	1004	
Depth to Water	feet	3.40	3.32	3.33	3.33	3.33	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	0850	0855	0900	0905	0910	0915	0920	0925	0930	0935	0940	Remarks
Purge vol.	gallons												
Purge rate	mL/min	260	260	260	260	260	260	260	260	260	260	260	
pH	su	6.1	6.1	5.5	5.5	5.6	5.7	5.9	6.0	6.0	6.1	6.1	
Temp.	°C	17.6	17.8	17.8	17.6	17.6	17.7	17.6	17.7	17.7	17.8	18.0	
Conductivity	µS/cm	536	533	536	534	533	532	531	530	528	529	528	
DO	mg/L	4.8	3.3	1.8	1.6	1.4	1.3	1.2	1.2	1.2	1.2	1.2	
ORP	mV	101.3	96.4	116.8	113.3	107.9	104.8	100.5	98.3	98.8	95.8	96.6	
Turbidity	NTU	4.6	3.2	5.2	2.3	5.0	3.1	3.6	4.2	4.1	3.8	3.0	
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	clear	
Odor	--	none	none	none	none	none	none	none	none	none	none	none	

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-118	4/8/2020	---	---	---	continued on page 2

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-118	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy	Air Temp. (°F): 72	Wind: southwest @ 8 mph
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	Well diameter inches 2 Total depth from TOC feet TOC below/above ground feet
Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Damages/repairs needed:		

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
Time	24-hour	1117	0841	0903	0946	1004	
Depth to Water	feet	3.40	3.32	3.33	3.33	3.33	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	0850	0855	0900	0905	0910	0915	0920	0925	0930	0935	0940	Remarks
Purge vol.	gallons												
Purge rate	mL/min	260											
pH	su	6.1											
Temp.	°C	17.8											
Conductivity	µS/cm	530											
DO	mg/L	1.3											
ORP	mV	98.4											
Turbidity	NTU	2.7											
Color/tint	--	clear											
Odor	--	none											

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-118	4/8/2020	0955	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-119	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 4/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 78	Wind: south-southwest @ 12 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34.5%; text-align: center;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	4/6/2020	4/8/2020	4/8/2020	4/8/2020	4/8/2020	
Time	24-hour	1124	1120	1137	1158	1209	
Depth to Water	feet	7.77	7.70	7.70	7.70	7.70	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC									
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No													
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408													
Time	24-hour	1125	1130	1135	1140	1145	1150	1155							Remarks
Purge vol.	gallons														
Purge rate	mL/min	255	255	255	255	255	255	255							
pH	su	6.5	6.4	6.5	6.6	6.6	6.6	6.6							
Temp.	°C	19.3	18.9	19.0	19.0	19.0	19.1	19.1							
Conductivity	µS/cm	708	707	702	698	697	694	691							
DO	mg/L	5.6	0.8	0.4	0.3	0.3	0.3	0.3							
ORP	mV	99.7	96.7	93.1	87.0	87.1	87.4	88.2							
Turbidity	NTU	3.2	2.5	2.5	2.4	2.5	2.3	2.2							
Color/tint	--	clear	clear	clear	clear	clear	clear	clear							
Odor	--	none	none	none	none	none	none	none							

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-119	4/8/2020	1205	2	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

First Half 2020 Verification Sampling Event

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-117	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 6/22/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy	Air Temp. (°F): 78	Wind: south @ 12 mph				
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	Well diameter	inches	2	Well locked? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		Total depth from TOC		feet		
		TOC below/above ground		feet		
Damages/repairs needed:						

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input checked="" type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					Remarks
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	
Date	mm/dd/yy	6/22/2020	6/22/2020	6/22/2020	6/22/2020	6/22/2020	
Time	24-hour	1000	1017	1023	1047	1108	
Depth to Water	feet	8.36	8.36	8.36	8.41	8.44	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

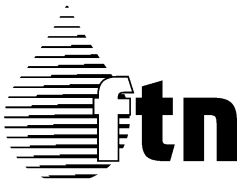
Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC								
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No												
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1020	1025	1030	1035	1040	1045							Remarks
Purge vol.	gallons													
Purge rate	mL/min	160	160	160	160	160	160							
pH	su	5.8	5.6	5.7	6.0	6.1	6.1							
Temp.	°C	19.35	19.2	19.2	19.3	19.4	18.6							
Conductivity	µS/cm	730	579	572	571	570	573							
DO	mg/L	4.4	3.8	3.6	3.2	3.1	3.0							
ORP	mV	217.6	206.5	194.1	191.9	182.0	173.7							
Turbidity	NTU	13.0	4.1	3.4	2.9	2.4	2.8							
Color/tint	--	clear	clear	clear	clear	clear	clear							
Odor	--	none	none	none	none	none	none							

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-117	6/22/2020	1100	1	0	
MW-117 DUP	6/22/2020	1105	1	0	
EPA EB-1	6/22/2020	1125	1	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Second Half 2020 Sampling Event



Groundwater Level Data Sheet

Project Name: Plum Point Energy Station	Project Number: 14590-2275-001	Investigator: Michael Clayton	Page 1 of 1
Weather Conditions: partly cloudy, 61°F	Measuring Device: Solinst 101	Transcribed by: Heather Ferguson	

	Date	Time	Depth to Water (feet below TOC)	Damages/Repairs		
MW-101	10/7/2020	1011	19.63	<input type="checkbox"/> Damaged well pad/casing <input checked="" type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-102	10/7/2020	1022	22.03	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-103	10/7/2020	1001	20.29	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input checked="" type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-108	10/7/2020	0846	26.06	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-113	10/7/2020	0839	24.05	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-115	10/7/2020	0833	22.46	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-116	10/7/2020	1017	21.39	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-117	10/7/2020	0930	20.34	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-118	10/7/2020	0943	18.53	<input type="checkbox"/> Damaged well pad/casing <input checked="" type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
MW-119	10/7/2020	1006	23.50	<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record
				<input type="checkbox"/> Damaged well pad/casing <input type="checkbox"/> Damaged bollards <input type="checkbox"/> Damaged equipment	<input type="checkbox"/> Damaged TOC <input type="checkbox"/> Damaged lock <input type="checkbox"/> Un-kept vegetation	<input type="checkbox"/> Lacks visibility <input type="checkbox"/> Lacks access <input type="checkbox"/> See gw sample record

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-101	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/9/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: overcast/smoky	Air Temp. (°F): 69	Wind: south-southeast @ 4 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/9/2020	10/9/2020	10/9/2020	10/9/2020	
Time	24-hour	1011	0940	1003	1027	1042	
Depth to Water	feet	19.63	19.75	19.75	19.75	19.75	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	0950	0955	1000	1005	1010	1015	1020	1025				Remarks
Purge vol.	gallons												
Purge rate	mL/min	220	220	220	220	220	220	220	220				
pH	su	6.3	6.2	6.2	6.5	6.6	6.6	6.6	6.7				
Temp.	°C	18.4	18.4	18.4	18.8	18.8	18.7	18.8	18.9				
Conductivity	µS/cm	569	570	572	577	578	578	578	578				
DO	mg/L	2.4	1.3	0.9	1.3	1.2	0.9	0.8	0.7				
ORP	mV	173.6	159.1	172.6	132.6	130.4	124.9	120.2	121.5				
Turbidity	NTU	5.3	4.6	4.5	4.6	3.8	4.1	3.5	3.6				
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear				
Odor	--	none	none	none	none	none	none	none	none				

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-101	10/9/2020	1035	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-102	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/9/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy	Air Temp. (°F): 73	Wind: south-southeast @ 7 mph
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	Well diameter: inches 2 Well locked? Total depth from TOC: feet <input checked="" type="checkbox"/> Yes TOC below/above ground: feet <input type="checkbox"/> No
Damages/repairs needed:		

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/9/2020	10/9/2020	10/9/2020	10/9/2020	
Time	24-hour	1022	1155	1213	1233	1250	
Depth to Water	feet	22.03	22.22	22.29	22.32	22.32	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible			Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC								
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1200	1205	1210	1215	1220	1225	1230					Remarks
Purge vol.	gallons												
Purge rate	mL/min	150	150	150	150	150	150	150					
pH	su	6.5	6.3	6.4	6.4	6.5	6.5	6.5					
Temp.	°C	19.3	19.4	19.4	19.4	19.4	19.4	19.4					
Conductivity	µS/cm	611	612	614	614	614	613	614					
DO	mg/L	0.7	0.6	0.5	0.5	0.5	0.4	0.4					
ORP	mV	139.0	143.5	132.3	127.4	123.5	123.0	120.7					
Turbidity	NTU	4.0	3.5	3.5	3.3	2.9	3.2	2.8					
Color/tint	--	clear	clear	clear	clear	clear	clear	clear					
Odor	--	none	none	none	none	none	none	none					

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-102	10/9/2020	1240	3	0	
EPA EB-1	10/9/2020	1255	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-103	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: overcast/smoky	Air Temp. (°F): 74	Wind: south @ 7 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	
Time	24-hour	1001	1325	1347	1358	1413	
Depth to Water	feet	20.29	20.35	20.40	20.40	20.40	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input checked="" type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC								
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No												
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1330	1335	1340	1345	1350	1355							Remarks
Purge vol.	gallons													
Purge rate	mL/min	240	240	240	240	240	240							
pH	su	6.5	6.3	6.2	6.3	6.3	6.4							
Temp.	°C	19.6	19.7	19.7	19.6	19.6	19.5							
Conductivity	µS/cm	486	484	481	486	489	491							
DO	mg/L	1.5	0.6	0.5	0.6	0.6	0.6							
ORP	mV	132.6	147.5	136.1	121.8	118.4	111.6							
Turbidity	NTU	6.0	5.3	4.6	4.1	3.6	4.2							
Color/tint	--	clear	clear	clear	clear	clear	clear							
Odor	--	none	none	none	none	none	none							

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-103	10/8/2020	1405	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-108	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/7/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: hazy/smoky	Air Temp. (°F): 82	Wind: southeast @ 8 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/7/2020	10/7/2020	10/7/2020	10/7/2020	
Time	24-hour	0846	1400	1421	1442	1511	
Depth to Water	feet	26.06	26.07	26.08	26.08	26.08	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:			Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible						Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC				
Purge depth	feet		Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No										
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1410	1415	1420	1425	1430	1435	1440					Remarks
Purge vol.	gallons												
Purge rate	mL/min	160	70	70	70	70	70	70					
pH	su	6.7	6.5	6.6	6.6	6.6	6.7	6.8					
Temp.	°C	23.4	23.3	23.0	22.8	23.1	23.3	23.6					
Conductivity	µS/cm	845	834	830	824	817	815	810					
DO	mg/L	3.1	1.8	1.5	0.8	0.7	0.6	0.6					
ORP	mV	124.8	130.7	128.6	125.3	117.3	114.9	112.7					
Turbidity	NTU	16.2	10.8	10.0	8.3	8.3	6.9	5.8					
Color/tint	--	clear	clear	clear	clear	clear	clear	clear					
Odor	--	none	none	none	none	none	none	none					

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-108	10/7/2020	1450	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-113	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/7/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 81	Wind: southwest @ 6 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					Remarks
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	
Date	mm/dd/yy	10/7/2020	10/7/2020	10/7/2020	10/7/2020	10/7/2020	
Time	24-hour	0839	1255	1313	1334	1348	
Depth to Water	feet	24.05	24.05	24.06	24.07	24.07	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:			Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet		Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1300	1305	1310	1315	1320	1325	1330						Remarks
Purge vol.	gallons													
Purge rate	mL/min	180	180	180	180	180	180	180						
pH	su	6.6	6.3	6.4	6.5	6.5	6.5	6.5						
Temp.	°C	20.5	20.1	20.0	20.0	19.9	19.8	19.5						
Conductivity	µS/cm	464	460	460	460	459	459	458						
DO	mg/L	4.7	4.7	4.6	4.8	4.5	4.2	4.2						
ORP	mV	133.2	142.6	138.9	132.1	128.2	128.0	126.7						
Turbidity	NTU	5.8	4.5	4.5	4.8	4.5	3.6	4.3						
Color/tint	--	clear	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-113	10/7/2020	1340	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-115	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/7/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: partly cloudy	Air Temp. (°F): 77	Wind: southwest @ 7 mph
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	Well diameter: inches 2 Total depth from TOC: feet TOC below/above ground: feet
Damages/repairs needed:		

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/7/2020	10/7/2020	10/7/2020	10/7/2020	
Time	24-hour	0833	1138	1152	1228	1246	
Depth to Water	feet	22.46	22.47	22.47	22.49	22.49	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1145	1150	1155	1200	1205	1210	1215	1220	1225			Remarks
Purge vol.	gallons												
Purge rate	mL/min	170	170	170	170	170	170	170	170	170			
pH	su	6.6	6.3	6.1	6.2	6.3	6.4	6.6	6.5	6.6			
Temp.	°C	20.5	20.0	20.0	19.9	19.7	20.2	20.3	20.3	20.3			
Conductivity	µS/cm	581	583	583	582	582	571	571	572	573			
DO	mg/L	5.7	4.8	5.0	4.2	4.6	4.6	4.5	4.4	4.2			
ORP	mV	136.5	142.4	155.2	136.8	137.1	130.1	121.5	120.8	119.2			
Turbidity	NTU	5.9	4.2	4.1	3.7	4.7	4.0	3.0	3.6	3.3			
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear	clear			
Odor	--	none	none	none	none	none	none	none	none	none			

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-115	10/7/2020	1230	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-116	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/9/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy/smoky	Air Temp. (°F): 70	Wind: south-southeast @ 5 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/9/2020	10/9/2020	10/9/2020	10/9/2020	
Time	24-hour	1017	1050	1107	1108	1144	
Depth to Water	feet	21.39	21.51	21.70	21.81	21.81	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input checked="" type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC								
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No												
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1055	1100	1105	1110	1115	1120	1125						Remarks
Purge vol.	gallons													
Purge rate	mL/min	190	190	190	190	190	190	190						
pH	su	6.8	6.4	6.3	6.3	6.4	6.3	6.3						
Temp.	°C	19.9	19.5	19.4	19.3	19.3	19.2	19.1						
Conductivity	µS/cm	691	697	699	696	697	696	696						
DO	mg/L	1.0	0.6	0.5	0.6	0.6	0.6	0.6						
ORP	mV	119.3	125.5	122.8	126.4	113.1	108.3	105.2						
Turbidity	NTU	3.6	3.4	3.3	3.1	3.2	3.2	3.4						
Color/tint	--	clear	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-116	10/9/2020	1135	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-117	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: cloudy/smoky	Air Temp. (°F): 71	Wind: south @ 1 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	
Time	24-hour	0930	1105	1123	1138	1202	
Depth to Water	feet	20.34	20.43	20.46	20.46	20.46	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1110	1115	1120	1125	1130	1135						Remarks
Purge vol.	gallons												
Purge rate	mL/min	160	160	160	160	160	160						
pH	su	6.7	6.3	6.3	6.4	6.3	6.3						
Temp.	°C	19.6	19.9	20.1	20.0	20.0	20.1						
Conductivity	µS/cm	424	428	431	436	440	443						
DO	mg/L	5.0	4.4	4.0	3.6	3.4	3.4						
ORP	mV	89.9	100.6	93.0	91.6	91.9	80.4						
Turbidity	NTU	5.8	4.9	3.7	3.6	4.1	3.5						
Color/tint	--	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-117	10/8/2020	1150	3	0	
MW-117 DUP	10/8/2020	1155	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-118	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: overcast	Air Temp. (°F): 73	Wind: south @ 4 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	
Time	24-hour	0943	1220	1232	1258	1310	
Depth to Water	feet	18.53	18.60	18.60	18.60	18.60	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input checked="" type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:			Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet		Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408												
Time	24-hour	1225	1230	1235	1240	1245	1250	1255						Remarks
Purge vol.	gallons													
Purge rate	mL/min	140	140	140	140	140	140	140						
pH	su	6.1	5.8	6.0	6.0	6.1	6.1	6.1						
Temp.	°C	19.1	19.3	19.4	19.5	19.6	19.7	19.6						
Conductivity	µS/cm	457	454	453	453	453	453	454						
DO	mg/L	5.3	4.0	3.8	3.6	3.4	3.5	3.4						
ORP	mV	126.8	126.9	118.8	108.3	104.5	97.0	99.0						
Turbidity	NTU	3.9	4.9	3.9	4.1	5.2	4.7	3.9						
Color/tint	--	clear	clear	clear	clear	clear	clear	clear						
Odor	--	none	none	none	none	none	none	none						

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-118	10/8/2020	1305	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

Groundwater Sampling Record

Facility: Plum Point Energy Station	Site ID: MW-119	Sampler: Michael Clayton
Project Number: R14590-2275-001 (EPA)	Date: 10/8/2020	Sampler Organization: FTN Associates, Ltd.

Site Description

Weather: overcast/smoky	Air Temp. (°F): 79	Wind: south-southeast @ 4 mph										
Site type: <input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Extraction Well <input type="checkbox"/> Production Well <input type="checkbox"/> Borehole <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Spring <input type="checkbox"/> Other:	Well casing material: <input checked="" type="checkbox"/> PVC <input type="checkbox"/> Steel <input type="checkbox"/> Iron <input type="checkbox"/> Other:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Well diameter</td> <td style="width: 16.5%;">inches</td> <td style="width: 16.5%;">2</td> <td rowspan="3" style="width: 34%;">Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Total depth from TOC</td> <td>feet</td> <td></td> </tr> <tr> <td>TOC below/above ground</td> <td>feet</td> <td></td> </tr> </table>	Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Total depth from TOC	feet		TOC below/above ground	feet	
Well diameter	inches	2	Well locked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									
Total depth from TOC	feet											
TOC below/above ground	feet											
Damages/repairs needed:												

Water Level Data

Measuring point description: <input checked="" type="checkbox"/> Mark/notch on TOC <input type="checkbox"/> North rim of TOC <input type="checkbox"/> Other:		Water level meter: <input type="checkbox"/> Geotech/Keck 100' <input type="checkbox"/> Geotech/Keck 200' <input type="checkbox"/> Heron Dipper-T <input checked="" type="checkbox"/> Solinst 101 <input type="checkbox"/> Other:					
		Pre-purge initial	Pre-purge confirmation	During purging	Purge end	After sampling	Remarks
Date	mm/dd/yy	10/7/2020	10/8/2020	10/8/2020	10/8/2020	10/8/2020	
Time	24-hour	1006	1420	1447	1503	1518	
Depth to Water	feet	23.50	23.53	23.57	23.57	23.57	
Product/Thickness	LNAPL/DNAPL feet						

Field Data

Field data meters: <input checked="" type="checkbox"/> YSI ProPlus <input checked="" type="checkbox"/> Hach 2100P Turbidimeter <input type="checkbox"/> YSI MPS 556 <input type="checkbox"/> HF Scientific Turbidimeter <input type="checkbox"/> Other: <input type="checkbox"/> Other:		Pump description: <input checked="" type="checkbox"/> Peristaltic <input type="checkbox"/> Bladder [<input type="checkbox"/> dedicated / <input type="checkbox"/> portable] <input type="checkbox"/> Submersible				Bailer description: <input type="checkbox"/> Disposable polyethylene <input type="checkbox"/> Disposable Teflon <input type="checkbox"/> Disposable PVC							
Purge depth	feet	Well goes dry during purging: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No											
Casing vol.	gallons	= [total depth (feet) – depth to water (feet)] × [internal diameter of well (inches)] ² × 0.0408											
Time	24-hour	1425	1430	1435	1440	1445	1450	1455	1500				Remarks
Purge vol.	gallons												
Purge rate	mL/min	210	210	210	210	210	210	210	210				
pH	su	6.9	6.7	6.3	6.3	6.4	6.5	6.5	6.5				
Temp.	°C	21.3	20.0	19.7	18.5	19.5	19.6	19.6	19.6				
Conductivity	µS/cm	605	608	605	601	597	595	595	594				
DO	mg/L	1.8	0.7	0.6	0.4	0.5	0.5	0.4	0.5				
ORP	mV	141.4	147.4	157.8	149.0	142.1	135.2	131.1	131.4				
Turbidity	NTU	4.9	4.4	3.3	3.6	3.6	3.5	3.4	3.2				
Color/tint	--	clear	clear	clear	clear	clear	clear	clear	clear				
Odor	--	none	none	none	none	none	none	none	none				

Sample Data

Sample ID	Date	Time	# Containers	# Filtered	Remarks
MW-119	10/8/2020	1510	3	0	

Sampler's Name (print): Michael Clayton	Sampler Signature: transcribed by HLF
---	---------------------------------------

APPENDIX B

Laboratory Reports

First Half 2020 Sampling Event

April 15, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

Sample Delivery Group: L1207727
Samples Received: 04/10/2020
Project Number: 14590-2275-001
Description: Plum Point Energy Station

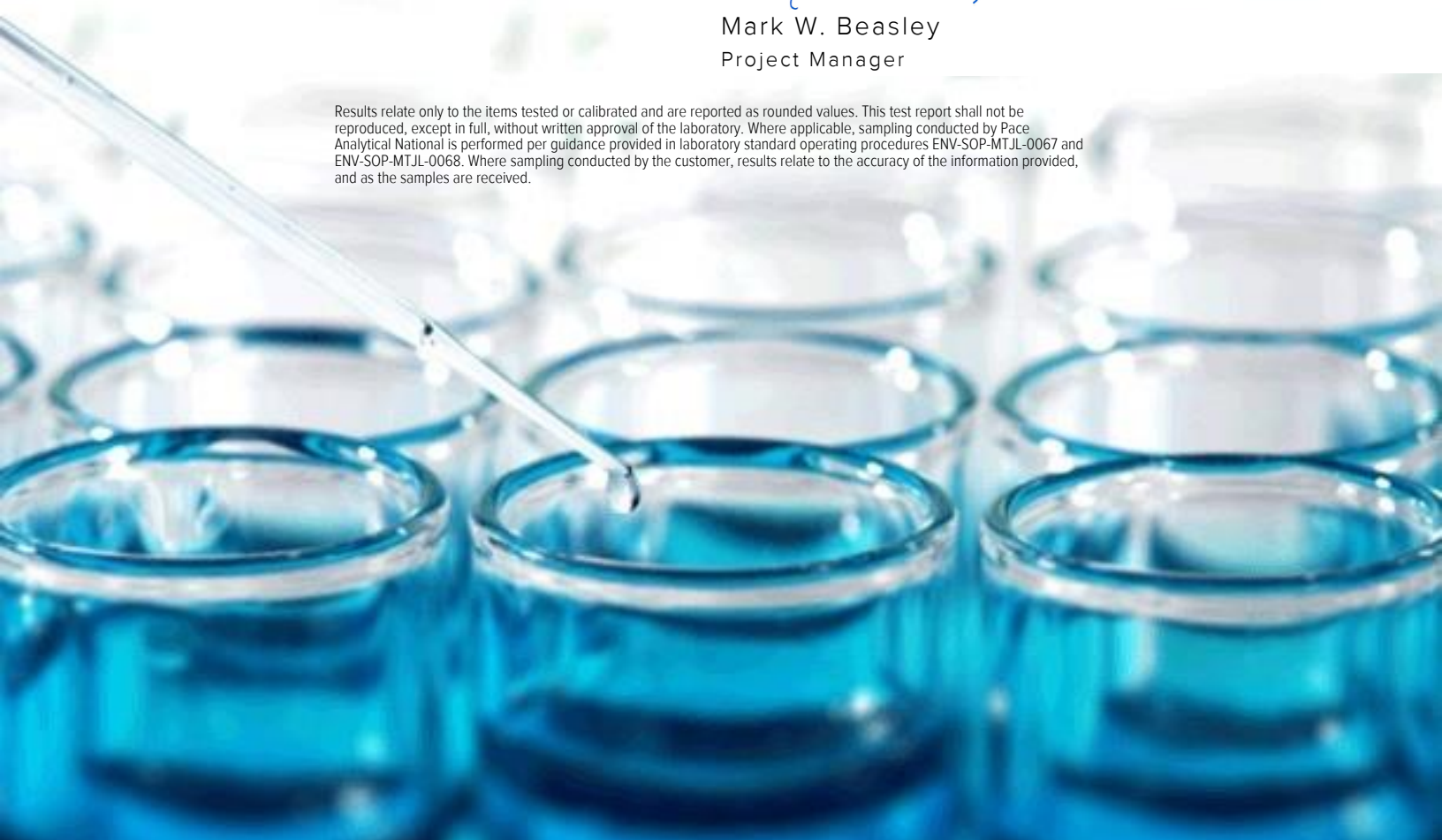
Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW-101 L1207727-01	6
MW-102 L1207727-02	7
MW-103 L1207727-03	8
MW-108 L1207727-04	9
MW-113 L1207727-05	10
MW-115 L1207727-06	11
MW-116 L1207727-07	12
MW-117 L1207727-08	13
MW-118 L1207727-09	14
MW-119 L1207727-10	15
MW-117 DUP L1207727-11	16
EPA EB-1 L1207727-12	17
Qc: Quality Control Summary	18
Gravimetric Analysis by Method 2540 C-2011	18
Wet Chemistry by Method 9056A	22
Metals (ICP) by Method 6010B	24
Gl: Glossary of Terms	25
Al: Accreditations & Locations	26
Sc: Sample Chain of Custody	27

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SAMPLE SUMMARY



MW-101 L1207727-01 GW

Collected by Michael Clayton
Collected date/time 04/08/20 13:05
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 07:24	04/13/20 07:24	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 14:54	CCE	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-102 L1207727-02 GW

Collected by Michael Clayton
Collected date/time 04/07/20 15:10
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459441	1	04/13/20 06:43	04/13/20 12:03	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 07:37	04/13/20 07:37	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 14:57	CCE	Mt. Juliet, TN

MW-103 L1207727-03 GW

Collected by Michael Clayton
Collected date/time 04/08/20 11:05
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 07:50	04/13/20 07:50	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:00	CCE	Mt. Juliet, TN

MW-108 L1207727-04 GW

Collected by Michael Clayton
Collected date/time 04/06/20 16:15
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1458982	1	04/11/20 18:40	04/12/20 01:28	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 08:03	04/13/20 08:03	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:02	CCE	Mt. Juliet, TN

MW-113 L1207727-05 GW

Collected by Michael Clayton
Collected date/time 04/06/20 15:05
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1458982	1	04/11/20 18:40	04/12/20 01:28	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 08:17	04/13/20 08:17	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:10	CCE	Mt. Juliet, TN

MW-115 L1207727-06 GW

Collected by Michael Clayton
Collected date/time 04/06/20 13:55
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1458982	1	04/11/20 18:40	04/12/20 01:28	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 08:30	04/13/20 08:30	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:13	CCE	Mt. Juliet, TN

SAMPLE SUMMARY



MW-116 L1207727-07 GW

Collected by Michael Clayton Collected date/time 04/08/20 14:05 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:09	04/13/20 09:09	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:16	CCE	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

MW-117 L1207727-08 GW

Collected by Michael Clayton Collected date/time 04/07/20 16:20 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459441	1	04/13/20 06:43	04/13/20 12:03	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:22	04/13/20 09:22	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:18	CCE	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

MW-118 L1207727-09 GW

Collected by Michael Clayton Collected date/time 04/08/20 09:55 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:35	04/13/20 09:35	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:21	CCE	Mt. Juliet, TN

7 Gl

8 Al

9 Sc

MW-119 L1207727-10 GW

Collected by Michael Clayton Collected date/time 04/08/20 12:05 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:48	04/13/20 09:48	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:24	CCE	Mt. Juliet, TN

MW-117 DUP L1207727-11 GW

Collected by Michael Clayton Collected date/time 04/07/20 16:25 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459441	1	04/13/20 06:43	04/13/20 12:03	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 10:01	04/13/20 10:01	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:26	CCE	Mt. Juliet, TN

EPA EB-1 L1207727-12 GW

Collected by Michael Clayton Collected date/time 04/08/20 15:05 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459443	1	04/13/20 06:44	04/13/20 12:51	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 10:14	04/13/20 10:14	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:29	CCE	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	362000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	823	J	379	1000	1	04/13/2020 07:24	WG1459605
Fluoride	279		64.0	150	1	04/13/2020 07:24	WG1459605
Sulfate	10300		594	5000	1	04/13/2020 07:24	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	78.0	J	25.4	200	1	04/13/2020 14:54	WG1459652
Calcium	105000		389	1000	1	04/13/2020 14:54	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	461000		2820	10000	1	04/13/2020 12:03	WG1459441

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2790		379	1000	1	04/13/2020 07:37	WG1459605
Fluoride	199		64.0	150	1	04/13/2020 07:37	WG1459605
Sulfate	84700		594	5000	1	04/13/2020 07:37	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	89.0	J	25.4	200	1	04/13/2020 14:57	WG1459652
Calcium	116000		389	1000	1	04/13/2020 14:57	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	318000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	726	J	379	1000	1	04/13/2020 07:50	WG1459605
Fluoride	219		64.0	150	1	04/13/2020 07:50	WG1459605
Sulfate	9930		594	5000	1	04/13/2020 07:50	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	54.1	J	25.4	200	1	04/13/2020 15:00	WG1459652
Calcium	88200		389	1000	1	04/13/2020 15:00	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	557000		2820	10000	1	04/12/2020 01:28	WG1458982

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1870		379	1000	1	04/13/2020 08:03	WG1459605
Fluoride	185		64.0	150	1	04/13/2020 08:03	WG1459605
Sulfate	33800		594	5000	1	04/13/2020 08:03	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	143	J	25.4	200	1	04/13/2020 15:02	WG1459652
Calcium	160000		389	1000	1	04/13/2020 15:02	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	332000		2820	10000	1	04/12/2020 01:28	WG1458982

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1080		379	1000	1	04/13/2020 08:17	WG1459605
Fluoride	94.3	J	64.0	150	1	04/13/2020 08:17	WG1459605
Sulfate	3610	J	594	5000	1	04/13/2020 08:17	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	131	J	25.4	200	1	04/13/2020 15:10	WG1459652
Calcium	77100		389	1000	1	04/13/2020 15:10	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	398000		2820	10000	1	04/12/2020 01:28	WG1458982

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	922	J	379	1000	1	04/13/2020 08:30	WG1459605
Fluoride	192		64.0	150	1	04/13/2020 08:30	WG1459605
Sulfate	5370		594	5000	1	04/13/2020 08:30	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	52.5	J	25.4	200	1	04/13/2020 15:13	WG1459652
Calcium	108000		389	1000	1	04/13/2020 15:13	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	365000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2500		379	1000	1	04/13/2020 09:09	WG1459605
Fluoride	184		64.0	150	1	04/13/2020 09:09	WG1459605
Sulfate	38700		594	5000	1	04/13/2020 09:09	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	76.8	J	25.4	200	1	04/13/2020 15:16	WG1459652
Calcium	98300		389	1000	1	04/13/2020 15:16	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	323000		2820	10000	1	04/13/2020 12:03	WG1459441

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1330		379	1000	1	04/13/2020 09:22	WG1459605
Fluoride	144	J	64.0	150	1	04/13/2020 09:22	WG1459605
Sulfate	7470		594	5000	1	04/13/2020 09:22	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	75.9	J	25.4	200	1	04/13/2020 15:18	WG1459652
Calcium	91300		389	1000	1	04/13/2020 15:18	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	304000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1620		379	1000	1	04/13/2020 09:35	WG1459605
Fluoride	152		64.0	150	1	04/13/2020 09:35	WG1459605
Sulfate	16600		594	5000	1	04/13/2020 09:35	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	73.9	J	25.4	200	1	04/13/2020 15:21	WG1459652
Calcium	82900		389	1000	1	04/13/2020 15:21	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	426000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2450		379	1000	1	04/13/2020 09:48	WG1459605
Fluoride	229		64.0	150	1	04/13/2020 09:48	WG1459605
Sulfate	39400		594	5000	1	04/13/2020 09:48	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	63.9	J	25.4	200	1	04/13/2020 15:24	WG1459652
Calcium	109000		389	1000	1	04/13/2020 15:24	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	316000		2820	10000	1	04/13/2020 12:03	WG1459441

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1320		379	1000	1	04/13/2020 10:01	WG1459605
Fluoride	143	J	64.0	150	1	04/13/2020 10:01	WG1459605
Sulfate	7550		594	5000	1	04/13/2020 10:01	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	77.6	J	25.4	200	1	04/13/2020 15:26	WG1459652
Calcium	90200		389	1000	1	04/13/2020 15:26	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	U		2820	10000	1	04/13/2020 12:51	WG1459443

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	U		379	1000	1	04/13/2020 10:14	WG1459605
Fluoride	U		64.0	150	1	04/13/2020 10:14	WG1459605
Sulfate	U		594	5000	1	04/13/2020 10:14	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	U		25.4	200	1	04/13/2020 15:29	WG1459652
Calcium	U		389	1000	1	04/13/2020 15:29	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3518147-1 04/12/20 01:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1207737-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1207737-09 04/12/20 01:28 • (DUP) R3518147-3 04/12/20 01:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	397000	391000	1	1.52		5

Laboratory Control Sample (LCS)

(LCS) R3518147-2 04/12/20 01:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8730000	99.2	85.0-115	



Method Blank (MB)

(MB) R3518490-1 04/13/20 12:03

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L1207737-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1207737-02 04/13/20 12:03 • (DUP) R3518490-3 04/13/20 12:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	410000	431000	1	4.99		5

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3518490-2 04/13/20 12:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8310000	94.4	85.0-115	



Method Blank (MB)

(MB) R3518487-1 04/13/20 15:57

Analyte	MB Result ug/l	<u>MB Qualifier</u>	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

Laboratory Control Sample (LCS)

(LCS) R3518487-2 04/13/20 15:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Dissolved Solids	8800000	8620000	98.0	85.0-115	

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3518485-1 04/13/20 12:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

¹Cp

²Tc

³Ss

L1207737-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1207737-14 04/13/20 12:51 • (DUP) R3518485-3 04/13/20 12:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	4140000	4210000	1	1.68		5

⁴Cn

⁵Sr

Laboratory Control Sample (LCS)

(LCS) R3518485-2 04/13/20 12:51

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8640000	98.2	85.0-115	

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3518056-1 04/12/20 23:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1207319-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1207319-01 04/13/20 04:35 • (DUP) R3518056-3 04/13/20 04:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	6190	6410	1	3.46		15
Fluoride	695	698	1	0.373		15
Sulfate	ND	2990	1	0.000		15

L1207727-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1207727-12 04/13/20 10:14 • (DUP) R3518056-6 04/13/20 10:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	U	0.000	1	0.000		15
Fluoride	U	0.000	1	0.000		15
Sulfate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3518056-2 04/12/20 23:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39800	99.6	80.0-120	
Fluoride	8000	8290	104	80.0-120	
Sulfate	40000	40600	102	80.0-120	



L1207319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1207319-01 04/13/20 04:35 • (MS) R3518056-4 04/13/20 05:01 • (MSD) R3518056-5 04/13/20 05:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6190	58800	58000	105	104	1	80.0-120			1.39	15
Fluoride	5000	695	6080	5990	108	106	1	80.0-120			1.50	15
Sulfate	50000	ND	55900	54700	106	104	1	80.0-120			2.21	15

L1207727-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1207727-12 04/13/20 10:14 • (MS) R3518056-7 04/13/20 10:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	U	51500	103	1	80.0-120	
Fluoride	5000	U	5170	103	1	80.0-120	
Sulfate	50000	U	52100	104	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3518294-1 04/13/20 14:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

1 Cp

2 Tc

3 Ss

Laboratory Control Sample (LCS)

(LCS) R3518294-2 04/13/20 14:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	888	88.8	80.0-120	
Calcium	10000	9020	90.2	80.0-120	

4 Cn

5 Sr

6 Qc

L1207737-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1207737-01 04/13/20 14:44 • (MS) R3518294-4 04/13/20 14:49 • (MSD) R3518294-5 04/13/20 14:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	66.5	1040	1080	97.2	101	1	75.0-125			3.45	20
Calcium	10000	103000	111000	112000	76.8	80.5	1	75.0-125			0.327	20

7 Gl

8 Al

9 Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

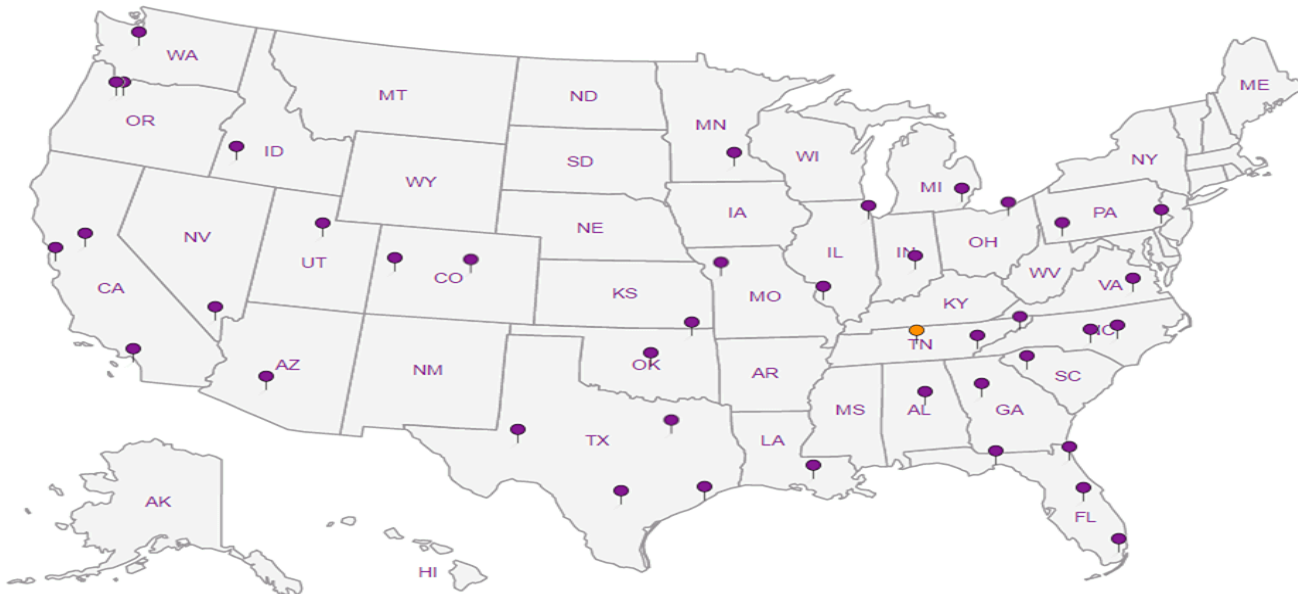
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Pres
Chk *ll*

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Dana Derrington

Email To: dld@ftn-assoc.com; mmv@ftn-assoc.com

Project
Description: **Plum Point Energy Station**

City/State
Collected: *Osceola AR*

Please Circle:
PT MT CT ET

Phone: **501-920-9642**
Fax:

Client Project #
14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Collected by (print):
M. Clayton

Site/Facility ID #

P.O. #
2020-00128

Collected by (signature):
M. Clayton

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote

Date Results Needed

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron	Calcium	250mlHDPE-HNO3	CI, F, SO4, TDS	250mlHDPE-NoPres
MW-101	<i>Grab</i>	GW		<i>4/8/20</i>	<i>1305</i>	2	X	X			
MW-102		GW		<i>4/7/20</i>	<i>1510</i>	2	X	X			
MW-103		GW		<i>4/8/20</i>	<i>1105</i>	2	X	X			
MW-108		GW		<i>4/6/20</i>	<i>1615</i>	2	X	X			
MW-113		GW		<i>4/6/20</i>	<i>1505</i>	2	X	X			
MW-115		GW		<i>4/6/20</i>	<i>1355</i>	2	X	X			
MW-116		GW		<i>4/8/20</i>	<i>1405</i>	2	X	X			
MW-117		GW		<i>4/7/20</i>	<i>1620</i>	2	X	X			
MW-118		GW		<i>4/8/20</i>	<i>955</i>	2	X	X			
MW-119		GW		<i>4/8/20</i>	<i>1205</i>	2	X	X			

SDG # *1267727*

G171

Acctnum: **NAESOAR**

Template: **T131993**

Prelogin: **P763874**

PM: **134 - Mark W. Beasley**

PB:

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

UPS FedEx Courier

Tracking #

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: *40.0* °C
2.1 to *2.1* Bottles Received: *24*

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: *4/10/20* Time: *8:30*

Hold:

Condition:
NCF / OK

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Report to:
Dana Derrington

Email To: dld@ftn-assoc.com; mmv@ftn-assoc.com

Project
Description: **Plum Point Energy Station**

City/State
Collected: **OSCEOLA AR**

Please Circle:
PT MT CT ET

Phone: **501-920-9642**
Fax:

Client Project #
14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Collected by (print):
Michael Clayton

Site/Facility ID #

P.O. #
2020-00128

Collected by (signature):
Michael Clayton

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Immediately Packed on Ice N Y

Pres
Chk *CC*

Analysis / Container / Preservative

Chain of Custody Page **2** of **2**



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # **1207707**
Table #
Acctnum: **NAESOAR**
Template: **T131993**
Prelogin: **P763874**
PM: **134 - Mark W. Beasley**
PB:
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron	Calcium	250mlHDPE-HNO3	CI, F, SO4, TDS	250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-117 DUP	Grab	GW		4/7/20	1625	2	X	X					11
EPA EB-1	✓	GW		4/8/20	1505	2	X	X					12
		GW				2	X	X					
		GW				2	X	X					
		GW				2	X	X					

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other _____

Remarks:

Samples returned via:
 UPS FedEx Courier _____

Tracking #

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
Michael Clayton

Date: **4/9/20** Time: **1800**

Received by: (Signature)

Trip Blank Received: Yes No
HCL/ MeOH
TBR

Relinquished by: (Signature)

Date: _____ Time: _____

Received by: (Signature)

Temp: **16.0** °C Bottles Received: **24**
2.1 ± 0.21

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: _____ Time: _____

Received for lab by: (Signature)

Date: **4/10/20** Time: **8:30**

Hold:

Condition:
NCF / *OK*

April 23, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

Sample Delivery Group: L1210764
Samples Received: 04/10/2020
Project Number: 14590-2275-001
Description: Plum Point Energy Station

Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1	
Tc: Table of Contents	2	
Ss: Sample Summary	3	
Cn: Case Narrative	4	
Sr: Sample Results	5	
MW-117 L1210764-01	5	
Qc: Quality Control Summary	6	
Metals (ICP) by Method 6010B	6	
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	
Sc: Sample Chain of Custody	9	

SAMPLE SUMMARY



MW-117 L1210764-01 GW

Collected by: Michael Clayton
Collected date/time: 04/08/20 16:20
Received date/time: 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1464772	1	04/22/20 17:10	04/23/20 09:48	TRB	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	98100		389	1000	1	04/23/2020 09:48	WG1464772

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3521303-1 04/23/20 09:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		389	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3521303-2 04/23/20 09:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9660	96.6	80.0-120	

⁷ Gl

⁸ Al

⁹ Sc

L1210809-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1210809-01 04/23/20 09:17 • (MS) R3521303-4 04/23/20 09:22 • (MSD) R3521303-5 04/23/20 09:25

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000		48100	47900	99.0	97.1	1	75.0-125			0.410	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

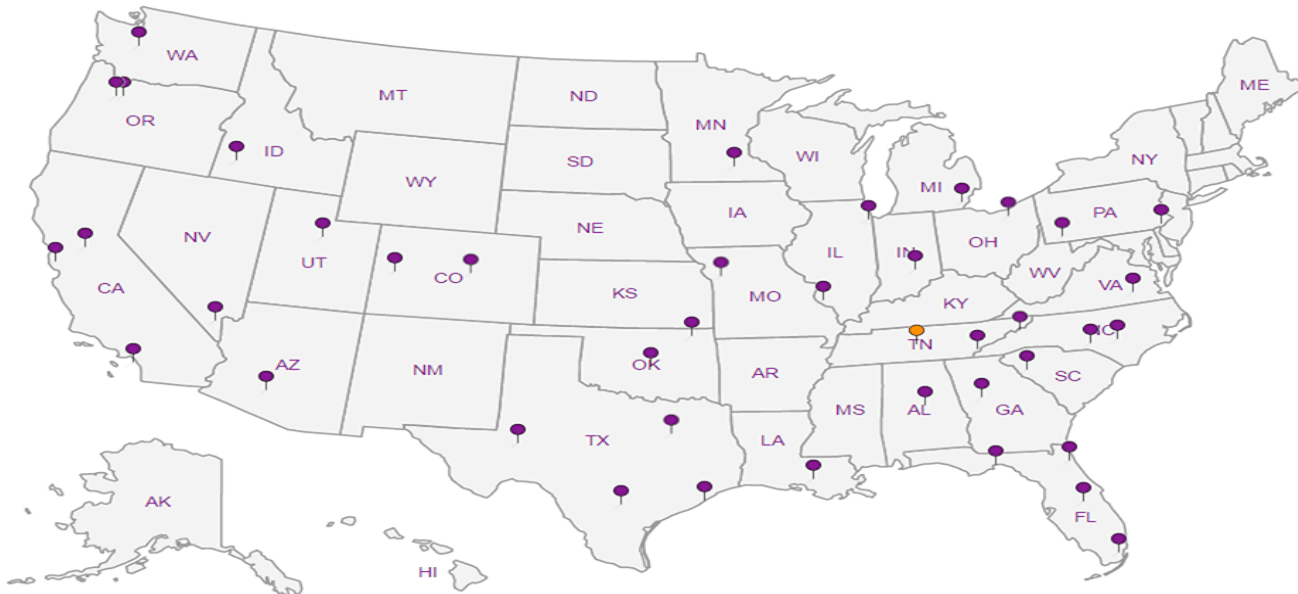
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC
 2739 SCR 623
 Osceola, AR 72370

Billing Information:
 Accounts Payable
 P.O. Box 567
 Osceola, AR 72370

Report to:
Dana Derrington

Email To: dld@ftn-assoc.com;mmv@ftn-assoc.com

Project Description: **Plum Point Energy Station**

City/State Collected: **OSCEOLA AR**

Please Circle: PT MT CT ET

Phone: 501-920-9642
 Fax:

Client Project # **14590-2275-001**

Lab Project # **NAESOAR-PLUMPOINT**

Collected by (print): *[Signature]*

Site/Facility ID #

P.O. # **2020-00128**

Collected by (signature): *[Signature]*

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

Packed on Ice N Y

Pres Chk *ll*

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Face Analytical
 National Center for Testing & Innovation

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859

SDG # **1267727**

G171
1/210764

Acctnum: **NAESOAR**

Template: **T131993**

Prelogin: **P763874**

PM: **134 - Mark W. Beasley**

PB:

Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron	Calcium	250mlHDPE-HNO3	CI, F, SO4	TDS	250mlHDPE-NoPres
MW-101	GRAB	GW		4/8/20	1305	2	X	X				
MW-102		GW		4/7/20	1510	2	X	X				
MW-103		GW		4/8/20	1105	2	X	X				
MW-108		GW		4/6/20	1615	2	X	X				
MW-113		GW		4/6/20	1505	2	X	X				
MW-115		GW		4/6/20	1355	2	X	X				
MW-116		GW		4/8/20	1405	2	X	X				
MW-117		GW		4/7/20	1620	2	X	X				
MW-118		GW		4/8/20	955	2	X	X				
MW-119		GW		4/8/20	1205	2	X	X				

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via:
 UPS FedEx Courier

Tracking #

Relinquished by: (Signature) *[Signature]* Date: 4/9/20 Time: 1800

Received by: (Signature) Trip Blank Received: Yes (No) HCL / MeOH TBR

Temp: *21.0* °C Bottles Received: *24*

Relinquished by: (Signature) Date: 4/10/20 Time: 8:30

Received for lab by: (Signature) *[Signature]* Date: 4/10/20 Time: 8:30

Hold: Condition: NCF / OK

Sample Receipt Checklist:
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

4/21/20

-01



Andy Vann

From: Mark Beasley
Sent: Tuesday, April 21, 2020 2:30 PM
To: Project Service; Sample Storage
Subject: L1207727 *NAESOAR*

Relog L1207727-08 for CAICP. Log as R5 due 4/28.

Thanks
Mark

From: hlf@ftn-assoc.com [mailto: hlf@ftn-assoc.com]
Sent: Tuesday, April 21, 2020 1:16 PM
To: Mark Beasley
Cc: Dana Derrington
Subject: Lab Re-Runs for Plum Point 1H2020 Monitoring Period (L1207727)

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Mark,

Long time, no talk. I hope you're doing well.

Could you ask the lab to verify the result for calcium at MW-117, and if correct, rerun the sample for verification purposes?

Thank you!

Heather Ferguson



FTN Associates, Ltd.
3 Innwood Circle, Suite 220
Little Rock, AR 72211
P: (501) 225-7779
F: (501) 225-6738
<https://www.ftn-assoc.com>

First Half 2020 Verification Sampling Event

June 29, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

Sample Delivery Group: L1232030
Samples Received: 06/23/2020
Project Number: R14590-2275-001
Description: Plum Point Energy Station

Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:

Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	1 Cp
Tc: Table of Contents	2	2 Tc
Ss: Sample Summary	3	3 Ss
Cn: Case Narrative	4	4 Cn
Sr: Sample Results	5	5 Sr
MW-117 L1232030-01	5	
MW-117 DUP L1232030-02	6	
EPA EB-1 L1232030-03	7	
Qc: Quality Control Summary	8	8 Qc
Metals (ICP) by Method 6010B	8	
Gl: Glossary of Terms	9	9 Gl
Al: Accreditations & Locations	10	10 Al
Sc: Sample Chain of Custody	11	11 Sc

SAMPLE SUMMARY



MW-117 L1232030-01 GW

Collected by: Michael Clayton
 Collected date/time: 06/22/20 11:00
 Received date/time: 06/23/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1499792	1	06/27/20 10:36	06/27/20 15:21	EL	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

MW-117 DUP L1232030-02 GW

Collected by: Michael Clayton
 Collected date/time: 06/22/20 11:05
 Received date/time: 06/23/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1499792	1	06/27/20 10:36	06/27/20 15:29	EL	Mt. Juliet, TN

⁴ Cn

⁵ Sr

EPA EB-1 L1232030-03 GW

Collected by: Michael Clayton
 Collected date/time: 06/22/20 11:25
 Received date/time: 06/23/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1499792	1	06/27/20 10:36	06/27/20 15:32	EL	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	90100		389	1000	1	06/27/2020 15:21	WG1499792

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	90300		389	1000	1	06/27/2020 15:29	WG1499792

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	U		389	1000	1	06/27/2020 15:32	WG1499792

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3543926-1 06/27/20 14:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Calcium	U		389	1000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3543926-2 06/27/20 14:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Calcium	10000	9460	94.6	80.0-120	

⁷Gl

⁸Al

L1232023-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1232023-03 06/27/20 14:26 • (MS) R3543926-4 06/27/20 14:31 • (MSD) R3543926-5 06/27/20 14:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000	179000	212000	212000	330	330	1	75.0-125	<u>V</u>	<u>V</u>	0.00283	20

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

V	The sample concentration is too high to evaluate accurate spike recoveries.
---	---



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

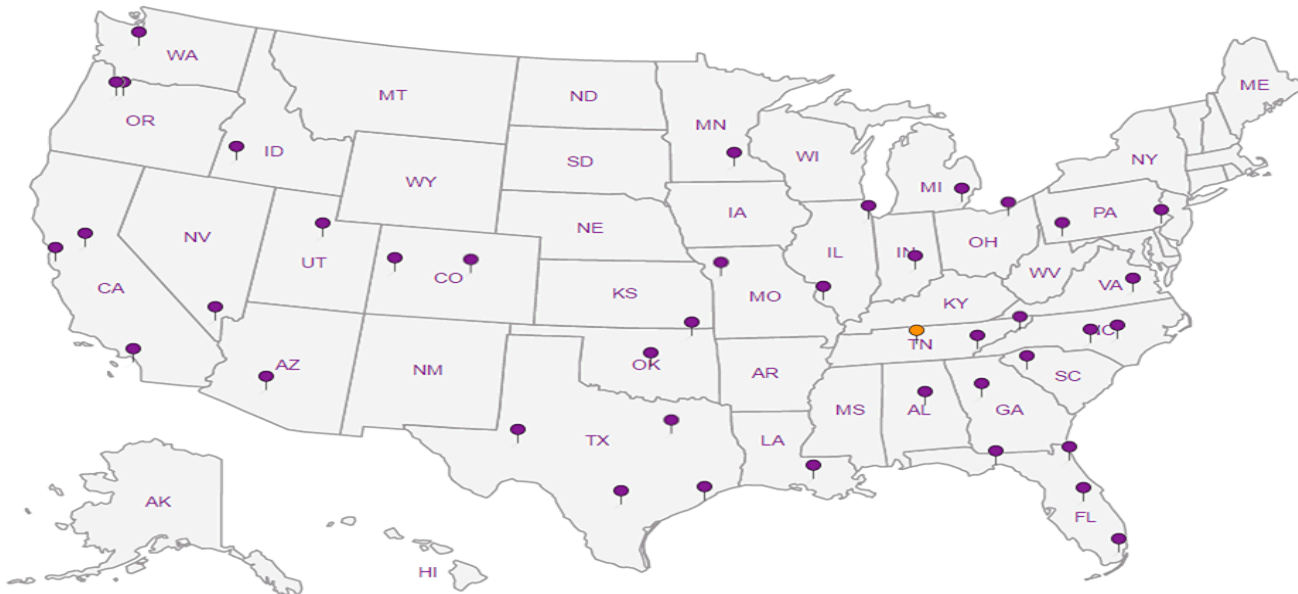
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Pres
Chk

Analysis / Container / Preservative



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Dana Derrington

Email To: dld@ftn-assoc.com;mmv@ftn-assoc.com;hlf@ftn-assoc.com;hlf@ftn-

Project Description:
Plum Point Energy Station

City/State
Collected:

Please Circle:
PT MT CT ET

Phone: **501-920-9642**

Client Project #
R14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Collected by (print):

Site/Facility ID #

P.O. #
2020-00128

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

No.
of
Cntrs

Immediately
Packed on Ice N ___ Y ___

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-117	Grab	GW		6/22/20	1100	1 X
MW-117 DUP		GW			1105	1 X
EPA EB-1		GW			1125	1 X
		GW				
		GW				

Total Ca 250mlHDPE-HNO3

SDG # **127 201**

Tablet **A069**

Acctnum: **NAESOAR**

Template: **T169486**

Prelogin: **P780601**

PM: **134 - Mark W. Beasley**

PB: **6-16-2020**

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
___ UPS ___ FedEx ___ Courier

Tracking #

1922 0798 5012

Sample Receipt Checklist	
COC Seal Present/Intact: ___ NP	<input checked="" type="checkbox"/> Y ___ N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y ___ N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y ___ N
Correct bottles used:	<input checked="" type="checkbox"/> Y ___ N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y ___ N
If Applicable	
VOA Zero Headspace:	<input checked="" type="checkbox"/> Y ___ N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y ___ N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y ___ N

Relinquished by: (Signature)

Date: **6/22/20**

Time: **1500**

Received by: (Signature)

Trip Blank Received: Yes/No
HCL/MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp °C
3.5-2=3.3

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **6/23/20**
Time: **8:45**

Hold: Condition: **NCF 1 OK**

Second Half 2020 Sampling Event

October 20, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

Sample Delivery Group: L1272188
Samples Received: 10/10/2020
Project Number: R14590-2275-001
Description: Plum Point Energy Station

Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:



Chris McCord
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	²Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³Ss
MW-101 L1272188-01	6	
MW-102 L1272188-02	7	⁴Cn
MW-103 L1272188-03	8	⁵Sr
MW-108 L1272188-04	9	
MW-113 L1272188-05	10	⁶Qc
MW-115 L1272188-06	11	
MW-116 L1272188-07	12	⁷Gl
MW-117 L1272188-08	13	⁸Al
MW-118 L1272188-09	14	
MW-119 L1272188-10	15	⁹Sc
MW-117 DUP L1272188-11	16	
EPA EB-1 L1272188-12	17	
Qc: Quality Control Summary	18	
Gravimetric Analysis by Method 2540 C-2011	18	
Wet Chemistry by Method 9056A	19	
Metals (ICP) by Method 6010B	22	
Gl: Glossary of Terms	23	
Al: Accreditations & Locations	24	
Sc: Sample Chain of Custody	25	

SAMPLE SUMMARY



MW-101 L1272188-01 GW

Collected by Michael Clayton
Collected date/time 10/09/20 10:35
Received date/time 10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/18/20 11:40	10/18/20 11:40	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:28	TRB	Mt. Juliet, TN



MW-102 L1272188-02 GW

Collected by Michael Clayton
Collected date/time 10/09/20 12:40
Received date/time 10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 00:47	10/17/20 00:47	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:31	TRB	Mt. Juliet, TN



MW-103 L1272188-03 GW

Collected by Michael Clayton
Collected date/time 10/08/20 14:05
Received date/time 10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 01:27	10/17/20 01:27	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:39	TRB	Mt. Juliet, TN



MW-108 L1272188-04 GW

Collected by Michael Clayton
Collected date/time 10/07/20 14:50
Received date/time 10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 01:40	10/17/20 01:40	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:42	TRB	Mt. Juliet, TN

MW-113 L1272188-05 GW

Collected by Michael Clayton
Collected date/time 10/07/20 13:40
Received date/time 10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 01:53	10/17/20 01:53	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:44	TRB	Mt. Juliet, TN

MW-115 L1272188-06 GW

Collected by Michael Clayton
Collected date/time 10/07/20 12:30
Received date/time 10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 02:32	10/17/20 02:32	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:47	TRB	Mt. Juliet, TN

SAMPLE SUMMARY



MW-116 L1272188-07 GW

Collected by
Michael Clayton
Collected date/time
10/09/20 11:35
Received date/time
10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 02:45	10/17/20 02:45	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1561391	5	10/19/20 11:43	10/19/20 11:43	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:50	TRB	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-117 L1272188-08 GW

Collected by
Michael Clayton
Collected date/time
10/08/20 11:50
Received date/time
10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 02:58	10/17/20 02:58	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:52	TRB	Mt. Juliet, TN

MW-118 L1272188-09 GW

Collected by
Michael Clayton
Collected date/time
10/08/20 13:05
Received date/time
10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 03:11	10/17/20 03:11	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:55	TRB	Mt. Juliet, TN

MW-119 L1272188-10 GW

Collected by
Michael Clayton
Collected date/time
10/08/20 15:10
Received date/time
10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 03:24	10/17/20 03:24	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 09:58	TRB	Mt. Juliet, TN

MW-117 DUP L1272188-11 GW

Collected by
Michael Clayton
Collected date/time
10/08/20 11:55
Received date/time
10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 03:37	10/17/20 03:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 10:00	TRB	Mt. Juliet, TN

EPA EB-1 L1272188-12 GW

Collected by
Michael Clayton
Collected date/time
10/09/20 12:55
Received date/time
10/10/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1557981	1	10/12/20 22:25	10/13/20 02:20	VRP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1559625	1	10/17/20 03:50	10/17/20 03:50	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1558124	1	10/14/20 00:39	10/14/20 10:03	TRB	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris McCord
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	389000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1750		379	1000	1	10/18/2020 11:40	WG1559625
Fluoride	309		64.0	150	1	10/18/2020 11:40	WG1559625
Sulfate	9910		594	5000	1	10/18/2020 11:40	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	55.6	J	25.4	200	1	10/14/2020 09:28	WG1558124
Calcium	107000		389	1000	1	10/14/2020 09:28	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	438000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	3300		379	1000	1	10/17/2020 00:47	WG1559625
Fluoride	178		64.0	150	1	10/17/2020 00:47	WG1559625
Sulfate	96100		594	5000	1	10/17/2020 00:47	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	69.9	J	25.4	200	1	10/14/2020 09:31	WG1558124
Calcium	115000		389	1000	1	10/14/2020 09:31	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	319000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	3550		379	1000	1	10/17/2020 01:27	WG1559625
Fluoride	234		64.0	150	1	10/17/2020 01:27	WG1559625
Sulfate	15000		594	5000	1	10/17/2020 01:27	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	76.3	J	25.4	200	1	10/14/2020 09:39	WG1558124
Calcium	91900		389	1000	1	10/14/2020 09:39	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	515000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2230		379	1000	1	10/17/2020 01:40	WG1559625
Fluoride	185		64.0	150	1	10/17/2020 01:40	WG1559625
Sulfate	42400		594	5000	1	10/17/2020 01:40	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	111	J	25.4	200	1	10/14/2020 09:42	WG1558124
Calcium	151000		389	1000	1	10/14/2020 09:42	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	274000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1620		379	1000	1	10/17/2020 01:53	WG1559625
Fluoride	106	J	64.0	150	1	10/17/2020 01:53	WG1559625
Sulfate	4610	J	594	5000	1	10/17/2020 01:53	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	87.9	J	25.4	200	1	10/14/2020 09:44	WG1558124
Calcium	70600		389	1000	1	10/14/2020 09:44	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	334000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	864	J	379	1000	1	10/17/2020 02:32	WG1559625
Fluoride	180		64.0	150	1	10/17/2020 02:32	WG1559625
Sulfate	2970	J	594	5000	1	10/17/2020 02:32	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	70.4	J	25.4	200	1	10/14/2020 09:47	WG1558124
Calcium	99400		389	1000	1	10/14/2020 09:47	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	537000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	7050		379	1000	1	10/17/2020 02:45	WG1559625
Fluoride	187		64.0	150	1	10/17/2020 02:45	WG1559625
Sulfate	103000		2970	25000	5	10/19/2020 11:43	WG1561391

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	77.2	J	25.4	200	1	10/14/2020 09:50	WG1558124
Calcium	134000		389	1000	1	10/14/2020 09:50	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	298000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	793	J	379	1000	1	10/17/2020 02:58	WG1559625
Fluoride	137	J	64.0	150	1	10/17/2020 02:58	WG1559625
Sulfate	7750		594	5000	1	10/17/2020 02:58	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	72.1	J	25.4	200	1	10/14/2020 09:52	WG1558124
Calcium	84100		389	1000	1	10/14/2020 09:52	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	301000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1130		379	1000	1	10/17/2020 03:11	WG1559625
Fluoride	150	J	64.0	150	1	10/17/2020 03:11	WG1559625
Sulfate	18300		594	5000	1	10/17/2020 03:11	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	59.6	J	25.4	200	1	10/14/2020 09:55	WG1558124
Calcium	84800		389	1000	1	10/14/2020 09:55	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	415000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2220		379	1000	1	10/17/2020 03:24	WG1559625
Fluoride	251		64.0	150	1	10/17/2020 03:24	WG1559625
Sulfate	52900		594	5000	1	10/17/2020 03:24	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	58.8	J	25.4	200	1	10/14/2020 09:58	WG1558124
Calcium	109000		389	1000	1	10/14/2020 09:58	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	293000		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	781	J	379	1000	1	10/17/2020 03:37	WG1559625
Fluoride	134	J	64.0	150	1	10/17/2020 03:37	WG1559625
Sulfate	7440		594	5000	1	10/17/2020 03:37	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	73.4	J	25.4	200	1	10/14/2020 10:00	WG1558124
Calcium	84800		389	1000	1	10/14/2020 10:00	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	U		2820	10000	1	10/13/2020 02:20	WG1557981

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	U		379	1000	1	10/17/2020 03:50	WG1559625
Fluoride	U		64.0	150	1	10/17/2020 03:50	WG1559625
Sulfate	U		594	5000	1	10/17/2020 03:50	WG1559625

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	U		25.4	200	1	10/14/2020 10:03	WG1558124
Calcium	U		389	1000	1	10/14/2020 10:03	WG1558124

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3581125-1 10/13/20 02:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1272188-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1272188-01 10/13/20 02:20 • (DUP) R3581125-3 10/13/20 02:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	389000	393000	1	1.02		5

L1272188-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1272188-10 10/13/20 02:20 • (DUP) R3581125-4 10/13/20 02:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	415000	404000	1	2.69		5

Laboratory Control Sample (LCS)

(LCS) R3581125-2 10/13/20 02:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8600000	97.7	77.4-123	



Method Blank (MB)

(MB) R3582823-1 10/16/20 23:42

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1272194-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1272194-01 10/17/20 04:16 • (DUP) R3582823-5 10/17/20 04:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Fluoride	180	177	1	1.40		15
Sulfate	32700	32300	1	1.35		15

L1272188-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1272188-01 10/18/20 11:40 • (DUP) R3582823-7 10/18/20 12:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	1750	1610	1	8.26		15
Fluoride	309	303	1	2.03		15
Sulfate	9910	9800	1	1.17		15

L1272194-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1272194-01 10/18/20 12:45 • (DUP) R3582823-8 10/18/20 12:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	110000	111000	5	0.351		15

Laboratory Control Sample (LCS)

(LCS) R3582823-2 10/16/20 23:55

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	41500	104	80.0-120	
Fluoride	8000	8430	105	80.0-120	
Sulfate	40000	43400	108	80.0-120	



L1272188-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1272188-02 10/17/20 00:47 • (MS) R3582823-3 10/17/20 01:00 • (MSD) R3582823-4 10/17/20 01:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	3300	56900	55500	107	104	1	80.0-120			2.64	15
Fluoride	5000	178	5440	5350	105	103	1	80.0-120			1.77	15
Sulfate	50000	96100	148000	145000	103	97.6	1	80.0-120	E	E	1.80	15

L1272188-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1272188-12 10/17/20 03:50 • (MS) R3582823-6 10/18/20 11:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	U	41100	82.3	1	80.0-120	
Fluoride	5000	U	4000	80.0	1	80.0-120	
Sulfate	50000	U	42500	85.1	1	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3583101-1 10/19/20 08:37

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

L1272152-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1272152-05 10/19/20 10:02 • (DUP) R3583101-3 10/19/20 10:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Sulfate	258000	259000	5	0.500		15

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R3583101-2 10/19/20 08:54

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Sulfate	40000	39900	99.8	80.0-120	

⁷Gl

⁸Al

L1272188-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1272188-07 10/19/20 10:52 • (MS) R3583101-4 10/19/20 11:09 • (MSD) R3583101-5 10/19/20 11:26

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Sulfate	50000	105000	151000	151000	93.2	92.1	1	80.0-120	<u>E</u>	<u>E</u>	0.371	15

⁹Sc



Method Blank (MB)

(MB) R3581360-1 10/14/20 09:07

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3581360-2 10/14/20 09:09

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	936	93.6	80.0-120	
Calcium	10000	9380	93.8	80.0-120	

L1272259-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1272259-02 10/14/20 09:12 • (MS) R3581360-4 10/14/20 09:18 • (MSD) R3581360-5 10/14/20 09:20

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l		ug/l	ug/l	%	%		%			%	%
Boron	1000		2670	2650	92.9	90.7	1	75.0-125			0.818	20
Calcium	10000	185000	190000	188000	50.8	33.0	1	75.0-125	<u>V</u>	<u>V</u>	0.940	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

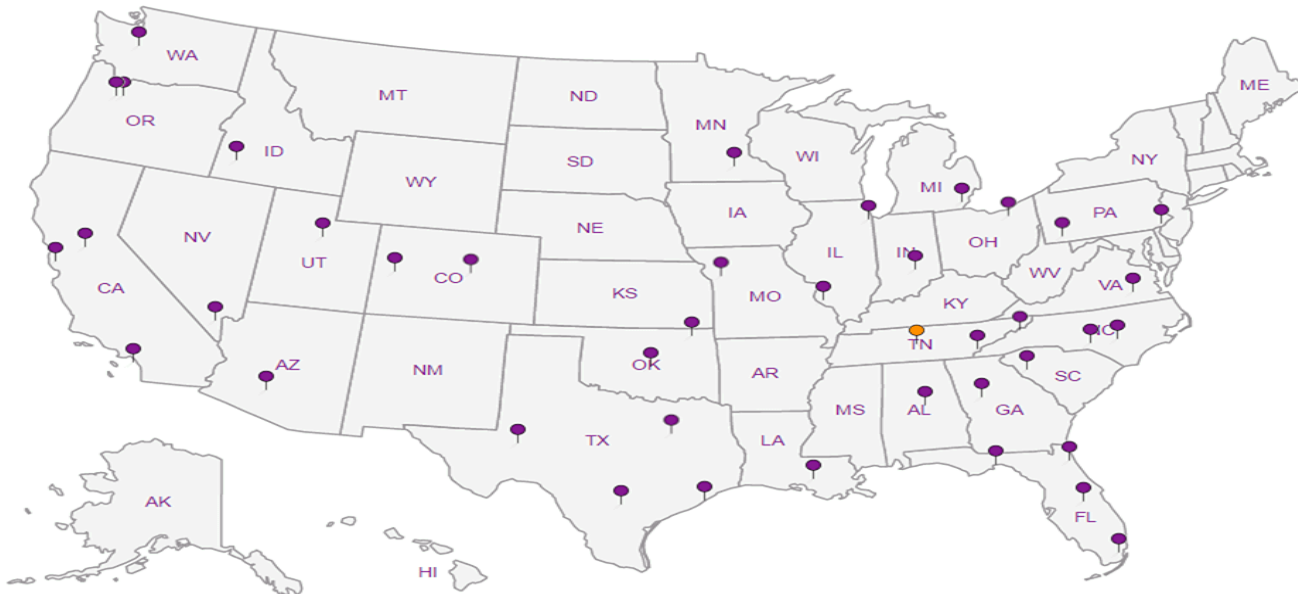
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Report to:
Dana Derrington

Project Description:
Plum Point Energy Station

Phone: **501-920-9642**

Collected by (print):
Michael Clayton

Collected by (signature):
Michael Clayton

Immediately Packed on Ice N Y

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Email To: dld@ftn-assoc.com;mmv@ftn-assoc.com;hlf@ftn-assoc.com;hlf@ftn-

City/State Collected: **OSCEOLA AR**

Please Circle:
PT MT CT ET

Client Project #
R14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Site/Facility ID #

P.O. #
2020-00128

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Pres Chk

<2

CI, F, SO4 125mlHDPE-NoPres

TDS 250mlHDPE-NoPres

Total B, Ca 250mlHDPE-HNO3



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # **1272188**

Table #

F204

Accnum: **NAESOAR**

Template: **T175308**

Prelogin: **P800645**

PM: **134 - Mark W. Beasley**

PB: **EV 9/30/20**

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CI, F, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Total B, Ca 250mlHDPE-HNO3												
MW-101	Grab	GW		10/9/20	1035	3	X	X	X												01
MW-102		GW		10/9/20	1240	3	X	X	X												02
MW-103		GW		10/8/20	1405	3	X	X	X												03
MW-108		GW		10/7/20	1450	3	X	X	X												04
MW-113		GW		10/7/20	1340	3	X	X	X												05
MW-115		GW		10/7/20	1230	3	X	X	X												06
MW-116		GW		10/9/20	1135	3	X	X	X												07
MW-117		GW		10/8/20	1150	3	X	X	X												08
MW-118		GW		10/8/20	1305	3	X	X	X												09
MW-119		GW		10/8/20	1510	3	X	X	X												10

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
 UPS FedEx Courier

Tracking # **9159 8780 5512**

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist	
COC Seal Present/Intact:	<input type="checkbox"/> NP <input checked="" type="checkbox"/> Y <input type="checkbox"/> N
COC Signed/Accurate:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Bottles arrive intact:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Correct bottles used:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
Sufficient volume sent:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
If Applicable	
VOA Zero Headspace:	<input type="checkbox"/> Y <input checked="" type="checkbox"/> N
Preservation Correct/Checked:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature) <i>Michael Clayton</i>	Date: 10/9/20	Time: 1500	Received by: (Signature)	Trip Blank Received: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	HCL/MeOH TBR
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.6-1.1.5	Bottles Received: 36
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>Olivia Turner</i>	Date: 10/10/20	Time: 900
				Hold:	Condition: NCF / OK

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Email To: dld@ftn-assoc.com;mmv@ftn-assoc.com;hlf@ftn-assoc.com;hlf@ftn-

Report to:
Dana Derrington

City/State Collected: **Osceola AR**

Please Circle:
PT MT CT ET

Project Description:
Plum Point Energy Station

Client Project #
R14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Phone: **501-920-9642**

Site/Facility ID #

P.O. #
2020-00128

Collected by (print):
Michael Clayton

Rush? (Lab MUST Be Notified)

Quote #

Date Results Needed

Collected by (signature):
Michael Clayton

Same Day ___ Five Day ___
Next Day ___ 5 Day (Rad Only) ___
Two Day ___ 10 Day (Rad Only) ___
Three Day ___

Immediately Packed on Ice N ___ Y ___

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 2 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # **1272188**

Table #

Acctnum: **NAESOAR**

Template: **T175308**

Prelogin: **P800645**

PM: **134 - Mark W. Beasley**

PB: **90 9/30/20**

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CI, F, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Total B, Ca 250mlHDPE-HNO3										
MW-117 DUP	GRAB	GW		10/8/20	1155	3	X	X	X										11
EPA EB-1	↓	GW		10/9/20	1255	3	X	X	X										12
		GW				3	X	X	X										
		GW				3	X	X	X										

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
___ UPS ___ FedEx ___ Courier

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact: ___ NP ___ Y ___ N
COC Signed/Accurate: ___ Y ___ N
Bottles arrive intact: ___ Y ___ N
Correct bottles used: ___ Y ___ N
Sufficient volume sent: ___ Y ___ N
If Applicable
VOA Zero Headpace: ___ Y ___ N
Preservation Correct/Checked: ___ Y ___ N
RAD Screen <0.5 mR/hr: ___ Y ___ N

Relinquished by: (Signature) *Michael Clayton*

Date: 10/9/20 Time: 15:00

Received by: (Signature)

Trip Blank Received: Yes/No
HCL/MeOH
TBR

Relinquished by: (Signature)

Date: Time:

Received by: (Signature)

Temp: 1.6-1.5
Bottles Received: 36

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature) *Olivia Tunn*

Date: 10/10/20 Time: 9:00

Hold:

Condition: NCF / OK

APPENDIX C

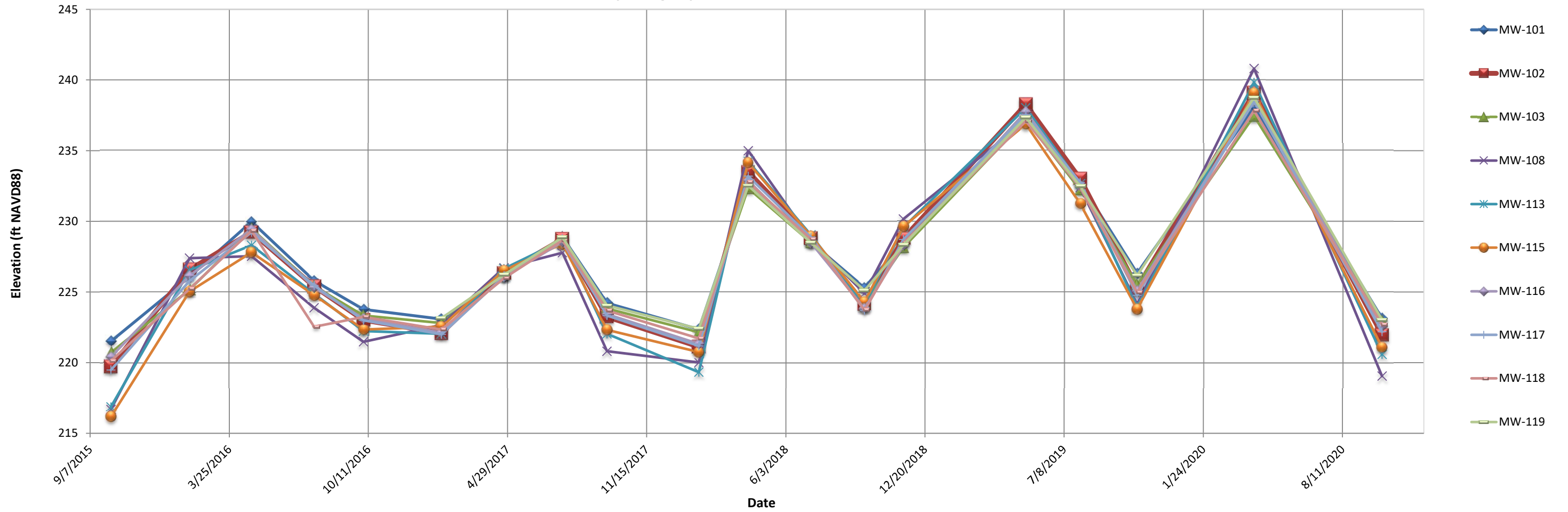
Water Elevation Data and Hydrographs

Historical water levels.

Date	Water Surface Elevation (ft, North American Vertical Datum of 1988)									
	MW-101	MW-102	MW-103	MW-108	MW-113	MW-115	MW-116	MW-117	MW-118	MW-119
10/7/2015	221.51	219.73	220.71	216.68	216.87	216.17	220.40	219.48	220.12	N/A*
1/28/2016	226.07	226.58	225.16	227.39	226.53	225.03	226.14	225.78	225.22	N/A*
4/26/2016	229.97	229.24	229.48	227.53	228.30	227.80	229.43	229.23	229.33	N/A*
7/25/2016	225.79	225.38	225.41	223.87	224.87	224.78	225.33	225.45	222.53	N/A*
10/4/2016	223.76	223.00	223.33	221.47	222.23	222.34	223.10	222.99	223.23	N/A*
1/24/2017	223.08	222.09	222.79	222.66	222.03	222.54	222.12	222.00	222.34	223.14
4/24/2017	226.04	226.33	226.33	226.71	226.65	226.53	226.07	226.11	225.98	226.22
7/17/2017	228.89	228.74	228.48	227.77	228.65	228.41	228.53	228.77	228.65	228.86
9/19/2017	224.21	223.23	223.82	220.80	222.03	222.32	223.42	223.33	223.67	224.04
1/29/2018	222.35	221.12	222.14	220.01	219.32	220.74	221.33	221.18	221.71	222.39
4/10/2018	232.63	233.50	232.34	234.99	234.23	234.15	232.89	233.19	232.76	232.52
7/9/2018	228.52	228.81	228.50	228.72	229.03	228.95	228.49	228.87	228.73	228.49
9/24/2018	225.29	224.15	224.16	224.89	224.08	224.29	223.83	223.71	223.72	225.11
11/19/2018	228.54	228.80	228.16	230.16	229.57	229.62	228.31	228.71	228.46	228.33
2/18/2019	NM	NM	NM	NM	NM	NM	NM	NM	NM	236.90
5/14/2019	237.60	238.28	237.17	237.13	238.03	236.89	237.76	237.55	237.08	237.35
7/31/2019	232.75	233.02	232.22	232.39	232.66	231.26	232.55	232.75	232.40	232.48
10/21/2019	226.32	225.29	225.52	224.14	223.95	223.78	225.08	224.77	224.98	226.16
4/6/2020	238.06	239.09	237.46	240.81	239.83	239.08	238.49	238.51	237.83	238.76
10/7/2020	223.12	221.96	222.96	219.05	220.58	221.09	222.58	222.19	222.70	223.03

*Monitoring well not installed yet.

Hydrographs of Groundwater Elevations



APPENDIX D

Appendix III Groundwater Quality Historical Database

Plum Point Energy Station EPA CCR Landfill Historical Database

Well ID	Sampling Date	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
MW-101	downgradient							
	10/7/2015	0.0858(J)	116	3.02	0.281	12.4	401	6.4
	1/28/2016	0.114(J)	117	2.74	0.274	11.4	421(B)	6.6
	4/27/2016	0.105(J)	120	6.61	0.283	19.9	437	6.3
	7/26/2016	0.0877(J)	115	3.41	0.241	12.8	448(B)	6.6
	10/6/2016	0.089(J)	110	1.93	0.267	8.44	387	6.2
	1/25/2017	0.0681(J)	109	1.67	0.3	11.5	381	6.7
	4/26/2017	<1.8(O)	80.5	2.14	0.273	9.57	407	6.9
	7/20/2017	0.0903(BJ)	110	1.98	0.331	13.5	414	6.7
	9/20/2017	0.0718(J)	153	1.57	0.328	9.68	385	7.0
	12/11/2017	n/a	120	n/a	n/a	n/a	n/a	6.4
	4/12/2018	0.084(BJ)	121	2.75	0.307	17.4	420	6.4
	9/26/2018	0.0981(BJ)	115	1.94(B)	0.29(B)	14.6	421	6.8
	5/16/2019	0.118(J)	103	1.01	0.263(B)	9.17	392	6.6
	10/23/2019	0.0491(J)	109	1.37	0.264	11.9	404	7.0
	4/8/2020	0.078(J)	105	0.823(J)	0.279	10.3	362	6.8
	10/9/2020	0.0556(J)	107	1.75	0.309	9.91	389	6.7
MW-102	downgradient							
	11/10/2015	0.0818(J)	121	5.53	0.16	82.3	434	6.8
	1/28/2016	0.125(J)	123	5.33	0.157	85.9	470	6.8
	4/27/2016	0.135(J)	131	6.32	0.154	103	478	6.7
	7/26/2016	0.122(J)	122	5.42	0.15	88.1	474(B)	7.7(R)
	10/6/2016	0.0999(J)	120	5.18	0.158	83.2	458	6.0
	1/25/2017	0.0938(J)	118	4.5	0.182	88.8	435	5.8
	4/27/2017	0.12(J)	121	4.85	0.175	91	504	6.7
	7/19/2017	0.108(BJ)	126	4.28	0.207	85.4	461	6.6
	9/20/2017	0.0536(J)	25.9(O)	4.29	0.194	88.7	454	6.7
	4/11/2018	0.144(BJ)	136	1.77	0.206	46.7	472	6.3
	7/9/2018	n/a	124	n/a	n/a	n/a	n/a	6.7
	9/27/2018	0.121(BJ)	121	3.84	0.183(B)	88.6	453	6.5
	5/16/2019	0.15(J)	121	2.87	0.196(B)	75.4	466	6.6
	10/23/2019	0.0602(J)	117	3.62	0.201	85.6	461	6.7
	4/7/2020	0.089(J)	116	2.79	0.199	84.7	461	6.6
	10/9/2020	0.0699(J)	115	3.3	0.178	96.1	438	6.5
MW-103	downgradient							
	10/7/2015	0.119(J)	168	3.92	0.198	95	591	6.5
	1/28/2016	0.149(J)	153	2.66	0.188	60.1	539(B)	6.3
	4/27/2016	0.166(J)	147	4.06	0.17	62	517	6.5
	7/26/2016	0.142(J)	148	3.63	0.163	60.9	539(B)	6.3
	10/6/2016	0.137(J)	152	2.69	0.201	54.5	518	6.3
	1/26/2017	0.138(J)	135	2.82	0.223	52	477	6.8

B: analyte was detected in associated blank sample.

J: analyte was detected below the RDL; value is an estimate.

O: value is a statistical outlier.

R: value was rejected due to suspected error; not used in statistics.

Plum Point Energy Station EPA CCR Landfill Historical Database

Well ID	Sampling Date	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
MW-103	4/27/2017	0.137(J)	136	2.89	0.2	49.8	513	6.5
(cont.)	7/20/2017	0.124(BJ)	136	2.28	0.24	52.2	506	6.6
	9/20/2017	0.134(J)	141	1.79	0.24	48.2	496	6.6
	4/11/2018	0.122(BJ)	128	3.24	0.163	80.6	468	6.2
	9/26/2018	0.145(BJ)	129	1.36(B)	0.217(B)	32.8	440	6.6
	5/15/2019	0.154(J)	106	1.1	0.213(B)	23.4	396	6.6
	10/22/2019	0.0816(J)	107	1.29	0.253	24.4	384	6.7
	4/8/2020	0.0541(J)	88.2	0.726(J)	0.219	9.93	318	6.7
	10/8/2020	0.0763(J)	91.9	3.55	0.234	15	319	6.4
MW-108	upgradient							
	1/28/2016	0.164(J)	166	5.34	0.158	44.4	555	6.7
	4/28/2016	0.194(J)	178	2.81	0.134	45.2	638(B)	6.6
	7/26/2016	0.158(J)	144	2.43	0.144	39.3	475(B)	9.8(R)
	10/6/2016	0.174(J)	158	2.48	0.169	41.4	539	6.2
	1/26/2017	0.164(J)	154	2.64	0.202	51.6	513	7.0
	4/25/2017	0.147(J)	151	3.1	0.167	45.7	488	6.8
	7/18/2017	0.162(J)	167	3.03	0.191	39.4	576	6.7
	9/19/2017	0.158(J)	170	2.06	0.199	43.8	578	6.7
	4/10/2018	0.171(BJ)	183	3.03	0.177	44.5	582	6.5
	9/25/2018	0.183(BJ)	163	3.11	0.188(B)	52.2	537	6.7
	5/14/2019	0.224(B)	169	2.44	0.184(B)	34.5	529	6.8
	8/1/2019	0.127(BJ)	n/a	n/a	n/a	n/a	n/a	7.1
	10/22/2019	0.11(J)	153	1.95	0.205	32.9	528	6.7
	4/6/2020	0.143(J)	160	1.87	0.185	33.8	557	6.9
	10/7/2020	0.111(J)	151	2.23	0.185	42.4	515	6.8
MW-113	upgradient							
	1/28/2016	0.102(J)	84.7	3.61	0.0808(J)	11	320(B)	6.6
	4/28/2016	0.127(J)	72.5	2.05	0.0604(J)	8.99	321(B)	6.9
	7/26/2016	0.144(J)	69.8	0.856(J)	0.057(J)	4.97(J)	281(B)	8.1(R)
	10/5/2016	0.0963(J)	84.7	2.63	0.0827(J)	9.51	323	6.0
	1/26/2017	0.0891(J)	88.9	5.81	0.0901(J)	13.3	332	7.1
	4/25/2017	0.089(J)	87.9	5.49	0.0944(J)	11.8	339	6.9
	7/18/2017	0.0982(BJ)	82.5	3.96	0.119	10.9	321	6.8
	9/19/2017	0.0998(J)	84.1	2.19	0.117	9.45	326	6.9
	4/10/2018	0.0899(BJ)	92	2.94	0.0562(J)	10.1	340	6.4
	9/25/2018	0.111(BJ)	90	2.84(B)	0.114(B)	9.81	337	6.7
	5/14/2019	0.168(J)	87.2	1.58	0.12(B)	3.15(J)	342	6.7
	10/22/2019	0.0881(J)	75.9	1.73	0.11	4.88(J)	307	6.7
	4/6/2020	0.131(J)	77.1	1.08	0.0943(J)	3.61(J)	332	6.7
	10/7/2020	0.0879(J)	70.6	1.62	0.106(J)	4.61(J)	274	6.5

B: analyte was detected in associated blank sample.

J: analyte was detected below the RDL; value is an estimate.

O: value is a statistical outlier.

R: value was rejected due to suspected error; not used in statistics.

Plum Point Energy Station EPA CCR Landfill Historical Database

Well ID	Sampling Date	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
MW-115	upgradient							
	11/10/2015	0.0473(J)	109	2.14	0.23	8.23	363	7.0
	1/28/2016	0.0617(J)	103	7.55	0.201	14.8	376	7.1
	4/28/2016	0.0863(J)	115	1.83	0.179	5.63	443(B)	6.8
	7/26/2016	0.0604(J)	114	1.22	0.2	4.79(J)	399(B)	9.0(R)
	10/5/2016	0.0737(J)	114	1.31	0.218	4.59(J)	446	6.1
	1/27/2017	0.0602(J)	110	1.77	0.244	6.52	406	7.0
	4/25/2017	0.0641(J)	106	2.71	0.203	6.75	385	6.8
	7/18/2017	0.0608(BJ)	105	2.32	0.238	7.1	369	6.6
	9/19/2017	0.0609(J)	116	0.835(J)	0.243	5.37	403	6.8
	4/10/2018	0.0666(BJ)	111	1.34	0.209	5.81	368	6.3
	9/25/2018	0.0764(BJ)	121	1.18(B)	0.216(B)	5(J)	417	6.7
	5/14/2019	0.0751(J)	128	0.598(J)	0.184(B)	5.63	440	6.6
	8/1/2019	n/a	125	n/a	n/a	n/a	n/a	7.1
	10/23/2019	0.0224(J)	114	1.23	0.22	5.83	411	6.9
	4/6/2020	0.0525(J)	108	0.922(J)	0.192	5.37	398	6.7
	10/7/2020	0.0704(J)	99.4	0.864(J)	0.18	2.97(J)	334	6.6
MW-116	downgradient							
	10/8/2015	0.108(J)	103	5.84	0.173	45.1	367	6.7
	1/28/2016	0.139(J)	111	5.67	0.165	78	426	6.8
	4/28/2016	0.142(J)	106	4.8	0.148	83.5	461(B)	6.6
	7/26/2016	0.115(J)	109	5.2	0.148	81.8	395(B)	6.2
	10/6/2016	0.126(J)	110	4.7	0.172	86.5	443	5.9
	1/25/2017	0.141(J)	118	4.85	0.201	89.2	467	5.9
	4/27/2017	0.137(J)	107	4.25	0.172	95.2	443	6.7
	7/19/2017	0.135(BJ)	111	4.45	0.208	98.4	435	6.5
	9/20/2017	0.132(J)	115	4.16	0.207	94.2	451	6.7
	1/30/2018	n/a	n/a	n/a	n/a	35.5	n/a	6.5
	4/11/2018	0.111(BJ)	137	4.9	0.166	113	511	6.4
	7/9/2018	n/a	125	n/a	n/a	n/a	n/a	6.6
	9/26/2018	0.153(BJ)	130	4.13	0.183(B)	97.5	500	6.6
	5/16/2019	0.144(J)	93.2	1.66	0.189(B)	27	349	6.6
	10/23/2019	0.0829(J)	109	2.75	0.216	63.1	417	6.7
	4/8/2020	0.0768(J)	98.3	2.5	0.184	38.7	365	6.6
	10/9/2020	0.0772(J)	134	7.05	0.187	103	537	6.3
MW-117	downgradient							
	10/8/2015	0.0733(J)	80.4	1.17	0.077(J)	5.21	281	6.6
	1/28/2016	0.096(J)	75.2	1.61	0.126	6.32	271(B)	6.5
	4/27/2016	0.13(J)	76.9	1.3	0.101	6.19	272	6.6
	7/26/2016	0.105(J)	78.2	1.25	0.0971(J)	5.48	271(B)	7.9(R)
	10/5/2016	0.115(J)	85.5	1.53	0.11	5.68	287	5.1

B: analyte was detected in associated blank sample.

J: analyte was detected below the RDL; value is an estimate.

O: value is a statistical outlier.

R: value was rejected due to suspected error; not used in statistics.

Plum Point Energy Station EPA CCR Landfill Historical Database

Well ID	Sampling Date	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
MW-117	1/26/2017	0.097(J)	75.7	1.34	0.12	7.46	268	6.1
(cont.)	4/25/2017	0.0835(J)	76.7	1.48	0.131	6.55	277	6.6
	7/18/2017	0.102(BJ)	77.6	1.36	0.151	6.56	292	6.4
	9/20/2017	0.106(J)	84.2	0.747(J)	0.144	6.43	280	6.5
	4/11/2018	0.0952(BJ)	82.5	1.57	0.124	7.28	290	6.4
	9/27/2018	0.127(BJ)	89.7	1.25(B)	0.144(B)	7.19	318	6.4
	11/19/2018	n/a	85.7	n/a	n/a	n/a	288	6.6
	5/15/2019	0.133(J)	98.3	1.25	0.147(B)	6.66	341	6.5
	8/2/2019	n/a	102	n/a	n/a	n/a	302	6.3
	10/22/2019	0.061(J)	80.9	0.864(J)	0.136	5.45	322	6.5
	4/7/2020	0.0759(J)	98.1	1.33	0.144(J)	7.47	323	6.6
	6/22/2020	n/a	90.1	n/a	n/a	n/a	n/a	n/a
	10/8/2020	0.0721(J)	84.1	0.793(J)	0.137(J)	7.75	298	6.3
MW-118	downgradient							
	10/9/2015	0.0916(J)	75.1	1.08	0.175	12	271	6.4
	1/28/2016	0.121(J)	73.4	1.59	0.175	11.5	269(B)	6.2
	4/28/2016	0.123(J)	94.1	1.8	0.119	26.7	378(B)	6.2
	7/26/2016	0.101(J)	85.4	2.13	0.133	26.6	322(B)	8.0(R)
	10/5/2016	0.103(J)	78.1	1.48	0.157	15.1	294	6.3
	1/26/2017	0.106(J)	74.7	1.13(B)	0.188	13.4	275	6.1
	4/26/2017	0.0994(J)	71.1	1.47	0.163	12.2	276	6.3
	7/20/2017	0.104(BJ)	74.9	1.62	0.172	20.4	313	6.5
	9/20/2017	0.104(J)	85.1	1.17	0.187	18.5	305	6.5
	4/11/2018	0.0949(BJ)	71.8	1.36	0.157	15.2	257	5.8
	7/10/2018	n/a	n/a	n/a	n/a	n/a	n/a	6.5
	9/27/2018	0.113(BJ)	80.6	1.33(B)	0.165(B)	17	375	6.3
	5/15/2019	0.125(J)	76.4	1.44	0.185	16.5	286	6.0
	8/2/2019	n/a	n/a	n/a	n/a	n/a	n/a	6.1
	10/22/2019	0.0459(J)	91.6	1.45	0.162	17.5	335	6.4
	4/8/2020	0.0739(J)	82.9	1.62	0.152	16.6	304	6.1
	10/8/2020	0.0596(J)	84.8	1.13	0.15(J)	18.3	301	6.1
MW-119	downgradient							
	1/25/2017	0.0922(J)	104	2.62	0.255	47.6	409	6.6
	4/27/2017	0.108(J)	106	2.8	0.198	39.1	403	6.8
	7/20/2017	0.0936(BJ)	103	6.84	0.256	48.7	432	6.6
	9/20/2017	0.0798(J)	92.7	2.3	0.289	38.7	338	6.8
	1/30/2018	0.0805(BJ)	99.3	2.07	0.259	35.5	380	6.4
	4/11/2018	0.095(BJ)	85.9	2.15	0.23	31.1	315	6.4
	9/27/2018	0.103(BJ)	99	2.3(B)	0.253(B)	41.6	290	6.7
	11/20/2018	0.0826(BJ)	94	1.96	0.271	33	343	6.8
	12/18/2018	n/a	n/a	n/a	n/a	n/a	n/a	n/a

B: analyte was detected in associated blank sample.

J: analyte was detected below the RDL; value is an estimate.

O: value is a statistical outlier.

R: value was rejected due to suspected error; not used in statistics.

Plum Point Energy Station EPA CCR Landfill Historical Database

Well ID	Sampling Date	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	pH (su)
MW-119	2/18/2019	0.11(J)	103	2.27	0.253	43	374	6.6
(cont.)	5/16/2019	0.109(J)	135	2.86	0.252	47.4	487	6.4
	8/2/2019	n/a	97.4	n/a	n/a	n/a	n/a	6.4
	10/22/2019	0.048(J)	110	2.86	0.266	47.7	400	6.7
	4/8/2020	0.0639(J)	109	2.45	0.229	39.4	426	6.6
	10/8/2020	0.0588(J)	109	2.22	0.251	52.9	415	6.5

B: analyte was detected in associated blank sample.

J: analyte was detected below the RDL; value is an estimate.

O: value is a statistical outlier.

R: value was rejected due to suspected error; not used in statistics.

APPENDIX E

Background Data Sets Used for Statistics

BACKGROUND DATA SETS

Background data sets are generally evaluated every 2 to 3 years in accordance with the landfill's SAP and Unified Guidance recommendations. This document describes recommended methods and procedures used to evaluate compliance data for inclusion in the background data sets in accordance with §257.94(b), the landfill's SAP, and the Unified Guidance. The Unified Guidance recommends updating background data sets to include more recent observations, because some long-term fluctuation in background levels may be possible even though a given well has not been impacted by the landfill. As identified in the Unified Guidance, the term "background" refers to the natural or baseline groundwater quality at a site. Background conditions can range from an uncontaminated aquifer to a historically contaminated site with baseline conditions that are unaffected by recent releases that are actionable under the Resource Conservation and Recovery Act. The terms "background" and "baseline" are used interchangeably herein. Procedures used for establishing the initial background data sets were described in the 2018 and 2019 annual reports.

Background data sets were evaluated for an update prior to the first half of 2020 monitoring period for all wells except MW-119, which was excluded from the evaluation due to the limited compliance data available for comparison. Background data sets for calcium and total dissolved solids at MW-117 were also excluded from the background evaluation due to confirmed statistically significant increases (SSIs) identified during 2019. However, multiple alternate source demonstrations (ASDs) certified by an Arkansas-registered professional engineer are now on record for these two SSIs (FTN 2019a, 2019b, 2020). Each ASD successfully demonstrated that the SSIs were not due to a release from the CCR unit using multiple lines of evidence. As such, the SSIs are considered the result of statistical error stemming from a background data set that does not fully capture the natural variation in water quality at this well. In view of this, the background data sets for calcium and TDS at MW-117 will be evaluated for an update along with all data for MW-119 prior to statistical evaluation of the first half of 2021 data set.

Updated background data sets used for the first and second half of 2020 statistical evaluations are attached to this appendix.

Exploratory Analyses

Background data sets for the wells installed prior to 2016 (MW-101 through MW-103, MW-108, and MW-115 through MW-118) were screened using exploratory data analyses to identify potential trends, outliers, and spatial variability. Time-series plots and box-and-whiskers plots were applied to all background data sets to identify potential excursions from normal.

Updating Background Data Sets

Existing background and compliance populations for each well-parameter pair were evaluated with the intrawell Mann-Whitney (Wilcoxon Rank-Sum) test. This test evaluates whether the existing background data set is statistically different from the compliance data set. When comparing a minimum of four compliance values to the background data set, the background data set is updated if the test finds no significant difference at the 95% confidence level ($\alpha = 0.05$). When comparing compliance populations of five or more values, background data sets are updated if the test finds no significant difference at the 99% confidence level ($\alpha = 0.01$).

Outliers and Rejected Data in Background Data Sets

The Unified Guidance recommends that background data be screened for potential outliers. However, it also advises that outliers not be removed unless a source of error or reason for the discrepancy can be identified. As advised in the Unified Guidance, select removal of extreme outliers without knowledge of error may be warranted to improve environmental protection, but removal of all outliers can mask real and legitimate changes in background data. Outlier screening included the application of Dixon's or Tukey's outlier tests to the updated background data sets to identify potential outliers for exclusion.

Extreme outliers and data that are excluded from the historical database based on independent evidence of error or that are suspected of being unrepresentative of groundwater

quality (e.g., due to excessively high sample turbidity) are listed in Table E.1. Outlier data that are excluded from statistical evaluations are flagged with an “O” and data that are excluded due to independent evidence of error are flagged with an “R” in the historical database.

Table E.1. Data excluded from statistical analyses.

Parameter	Well	Date	Value (mg/L)	Flag	Note
Boron	MW-101	4/26/2017	<1.8	O	Laboratory reporting detection limit was nine times higher than normal due to a sample dilution.
Calcium	MW-102	9/20/2017	25.9	O	Statistically low outlier; suspected laboratory error.
pH	MW-102	7/26/2016	7.7 (su)	R	Known equipment malfunction.
pH	MW-108	7/26/2016	9.8 (su)	R	
pH	MW-113	7/26/2016	8.1 (su)	R	
pH	MW-115	7/26/2016	9.0 (su)	R	
pH	MW-117	7/26/2016	7.9 (su)	R	
pH	MW-118	7/26/2016	8.0 (su)	R	

Screening for Trends in Background Data Sets

EPA guidance recommends screening background populations for statistically significant trends, because some tests (such as a prediction limit test) require a stationary statistical distribution for valid results. The presence of statistically significant trends in background data may violate key assumptions of some statistical tests and require an alternate approach to testing the data. If trends are indicated in background populations, testing strategies that either correct for, or are not sensitive to, temporal variation may be required.

Well-parameter pairs containing statistically significant trends in their background data sets are summarized in Table E.2. The well-parameter pairs below are tested for compliance using the Mann-Kendall test and Theil-Sen trend line as opposed to a prediction limit test. All remaining well-parameter pairs are tested for compliance using prediction limits.

Table E.2. Well-parameter pairs tested with Mann-Kendall test and Theil-Sen trend line.

Parameter	Well(s)
Calcium	MW-103
Chloride	MW-101, MW-102, MW-103, MW-116
Sulfate	MW-103
TDS	MW-103

References

- FTN [FTN Associates, Ltd.]. 2019a. *Alternate Source Demonstration for Statistically Significant Increases, First Half of 2019 Monitoring Period, Plum Point Energy Station Landfill*. Prepared for Plum Point Services Company, LLC, and posted to facility operating record on October 24, 2019. Little Rock, AR: FTN Associates, Ltd.
- . 2019b. *Alternate Source Demonstration for Statistically Significant Increases, Second Half of 2019 Monitoring Period, Plum Point Energy Station Landfill*. Prepared for Plum Point Services Company, LLC, and posted to facility operating record on December 17, 2019. Little Rock, AR: FTN Associates, Ltd.
- . 2020. *Alternate Source Demonstration for Statistically Significant Increases, First Half of 2020 Monitoring Period, Plum Point Energy Station Landfill*. Prepared for Plum Point Services Company, LLC, and posted to facility operating record on August 3, 2020. Little Rock, AR: FTN Associates, Ltd.

Date Ranges

Date: 11/9/2020 3:31 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Boron (mg/l)

MW-101 background:10/7/2015-10/23/2019
MW-102 background:10/7/2015-10/23/2019
MW-103 background:10/7/2015-10/23/2019
MW-108 background:10/7/2015-10/23/2019
MW-113 background:10/7/2015-10/23/2019
MW-115 background:10/7/2015-10/23/2019
MW-116 background:10/7/2015-10/23/2019
MW-117 background:10/7/2015-10/23/2019
MW-118 background:10/7/2015-10/23/2019
MW-119 background:1/25/2017-2/18/2019

Calcium (mg/l)

MW-101 background:10/7/2015-10/23/2019
MW-102 background:10/7/2015-10/23/2019
MW-103 background:10/7/2015-10/23/2019
MW-108 background:10/7/2015-10/23/2019
MW-113 background:10/7/2015-10/23/2019
MW-115 background:10/7/2015-10/23/2019
MW-116 background:10/7/2015-10/23/2019
MW-117 background:10/7/2015-7/20/2017
MW-118 background:10/7/2015-10/23/2019
MW-119 background:1/25/2017-2/18/2019

Chloride (mg/l)

MW-101 background:10/7/2015-10/23/2019
MW-102 background:10/7/2015-10/23/2019
MW-103 background:10/7/2015-10/23/2019
MW-108 background:10/7/2015-10/23/2019
MW-113 background:10/7/2015-10/23/2019
MW-115 background:10/7/2015-10/23/2019
MW-116 background:10/7/2015-10/23/2019
MW-117 background:10/7/2015-10/23/2019
MW-118 background:10/7/2015-10/23/2019
MW-119 background:1/25/2017-2/18/2019

Dissolved Solids (mg/l)

MW-101 background:10/7/2015-10/23/2019
MW-102 background:10/7/2015-10/23/2019
MW-103 background:10/7/2015-10/23/2019
MW-108 background:10/7/2015-10/23/2019
MW-113 background:10/7/2015-10/23/2019
MW-115 background:10/7/2015-10/23/2019
MW-116 background:10/7/2015-10/23/2019
MW-117 background:10/7/2015-7/20/2017
MW-118 background:10/7/2015-10/23/2019
MW-119 background:1/25/2017-2/18/2019

Fluoride (mg/l)

MW-101 background:10/7/2015-10/23/2019
MW-102 background:10/7/2015-7/20/2017
MW-103 background:10/7/2015-10/23/2019
MW-108 background:10/7/2015-10/23/2019
MW-113 background:10/7/2015-10/23/2019
MW-115 background:10/7/2015-10/23/2019
MW-116 background:10/7/2015-10/23/2019
MW-117 background:10/7/2015-7/20/2017
MW-118 background:10/7/2015-10/23/2019
MW-119 background:1/25/2017-2/18/2019

pH (su)

MW-101 background:10/7/2015-10/23/2019
MW-102 background:10/7/2015-10/23/2019
MW-103 background:10/7/2015-10/23/2019
MW-108 background:10/7/2015-10/23/2019
MW-113 background:10/7/2015-10/23/2019
MW-115 background:10/7/2015-10/23/2019
MW-116 background:10/7/2015-10/23/2019

Date Ranges

Date: 11/9/2020 3:31 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

MW-117 background:10/7/2015-10/23/2019

MW-118 background:10/7/2015-10/23/2019

MW-119 background:1/25/2017-2/18/2019

Sulfate (mg/l)

MW-101 background:10/7/2015-10/23/2019

MW-102 background:10/7/2015-10/23/2019

MW-103 background:10/7/2015-10/23/2019

MW-108 background:10/7/2015-10/23/2019

MW-113 background:10/7/2015-10/23/2019

MW-115 background:10/7/2015-10/23/2019

MW-116 background:10/7/2015-10/23/2019

MW-117 background:10/7/2015-10/23/2019

MW-118 background:10/7/2015-10/23/2019

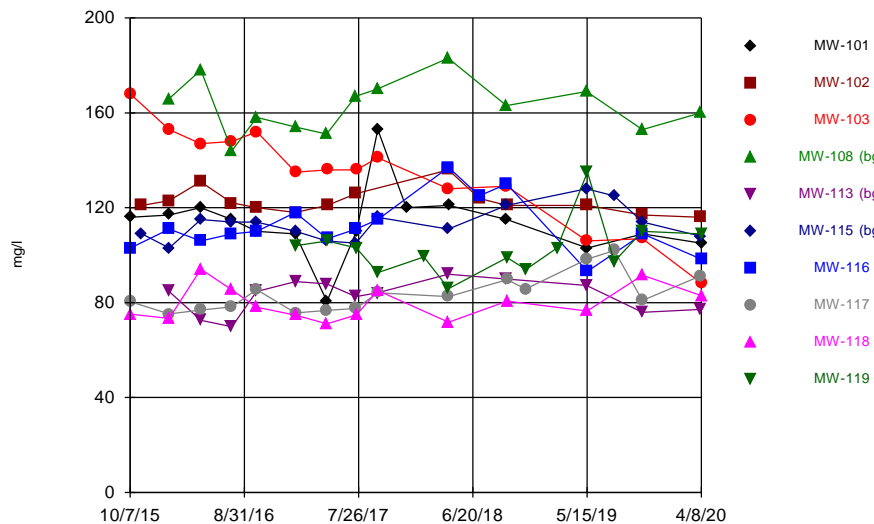
MW-119 background:1/25/2017-2/18/2019

APPENDIX F

Exploratory Data Analysis Plots

Time-Series Plots, First Half of 2020 Data Set

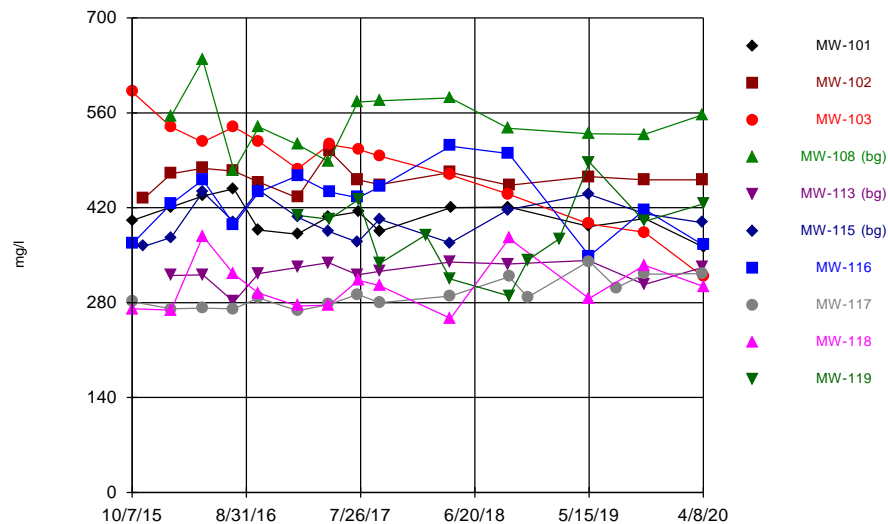
Time Series



Constituent: Calcium Analysis Run 4/21/2020 12:07 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

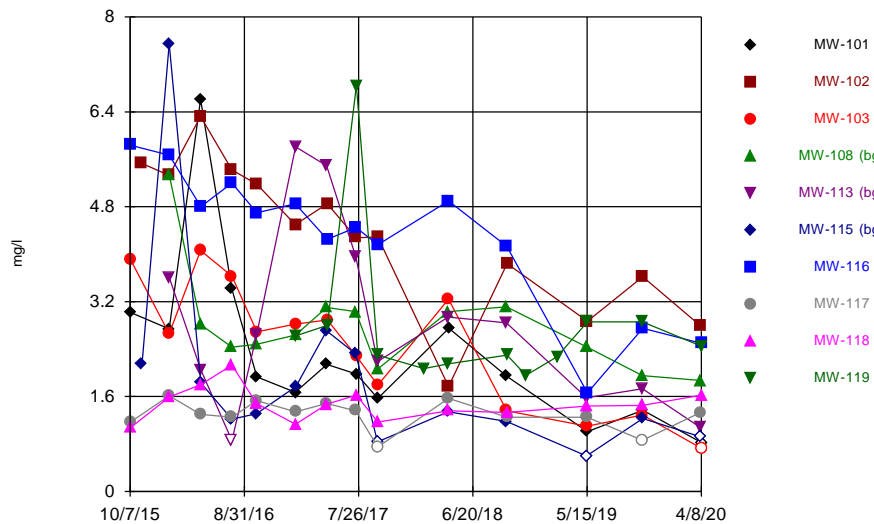
Time Series



Constituent: Dissolved Solids Analysis Run 4/21/2020 12:07 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

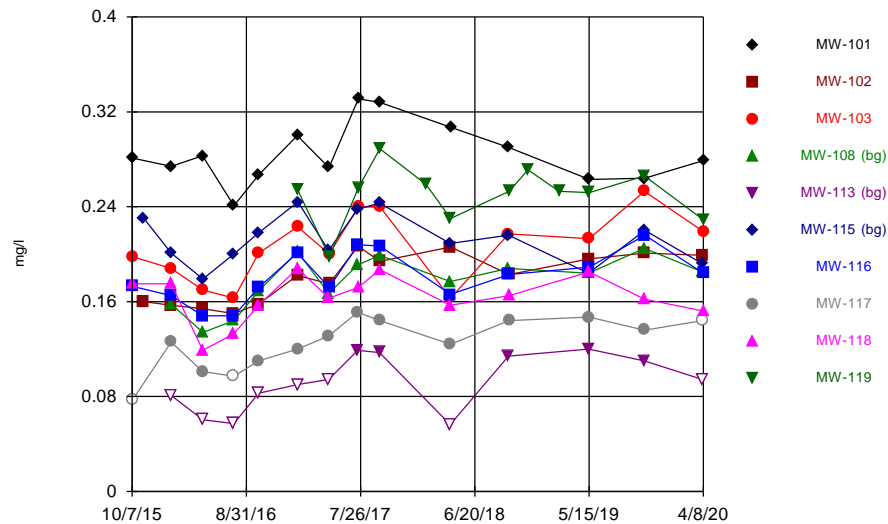
Time Series



Constituent: Chloride Analysis Run 4/21/2020 12:07 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

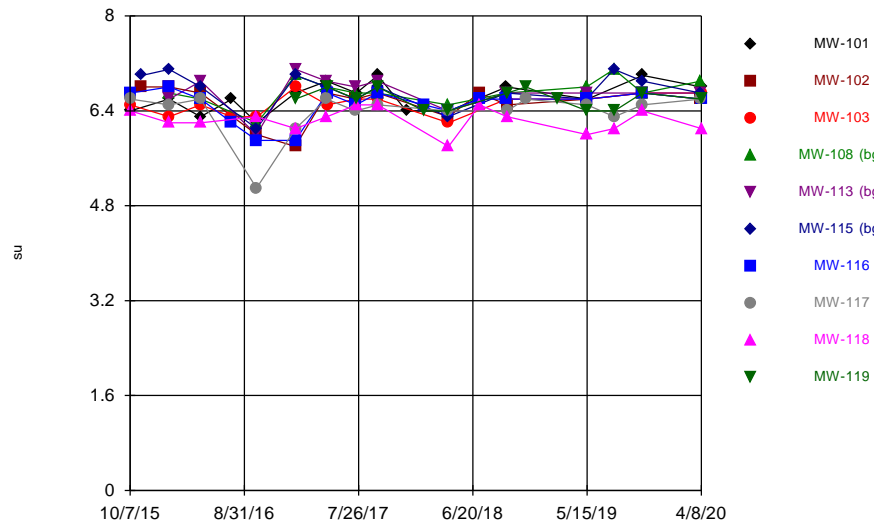
Time Series



Constituent: Fluoride Analysis Run 4/21/2020 12:07 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

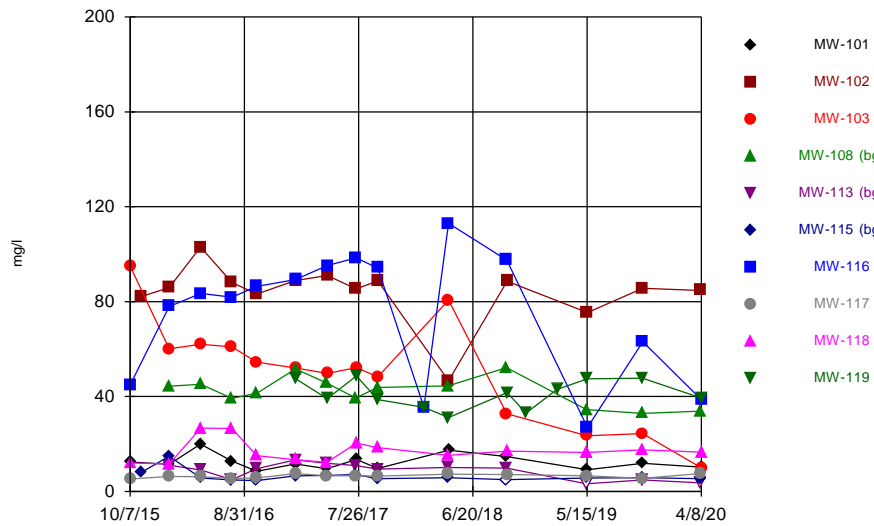
Time Series



Constituent: pH Analysis Run 4/21/2020 12:07 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Time Series

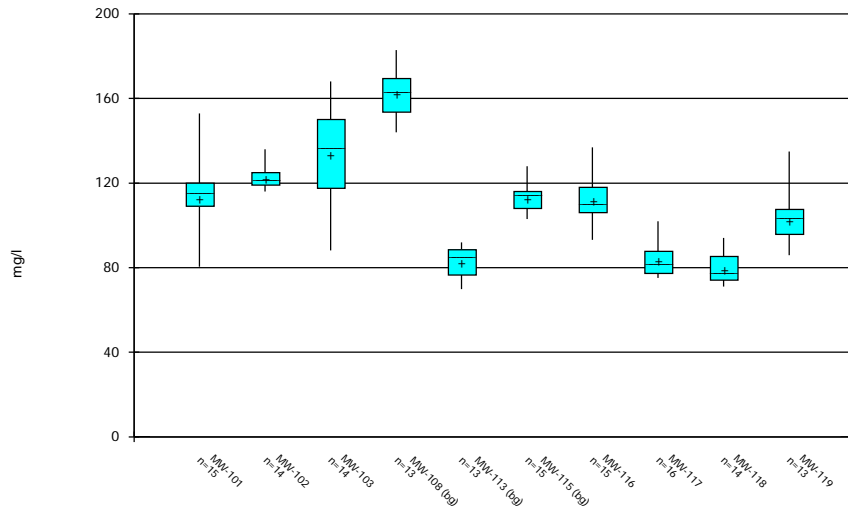


Constituent: Sulfate Analysis Run 4/21/2020 12:07 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box-and-Whisker Plots, First Half of 2020 Data Set

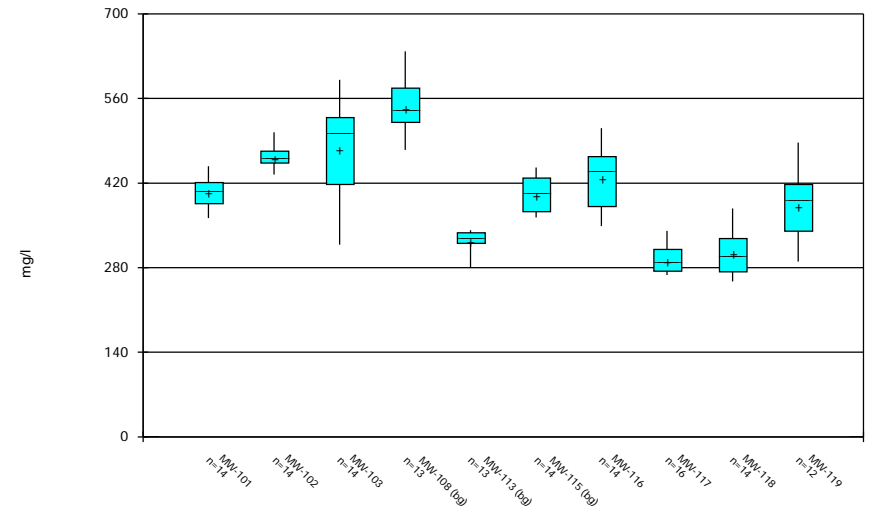
Box & Whiskers Plot



Constituent: Calcium Analysis Run 4/21/2020 12:08 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

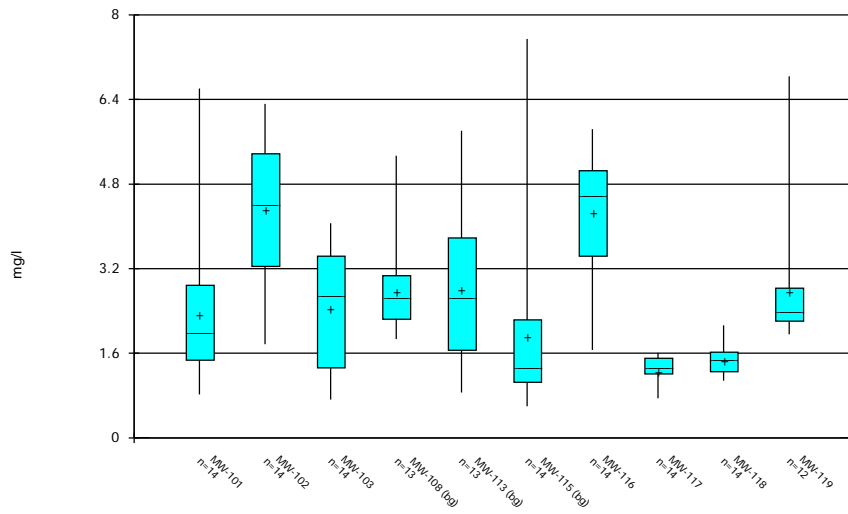
Box & Whiskers Plot



Constituent: Dissolved Solids Analysis Run 4/21/2020 12:08 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

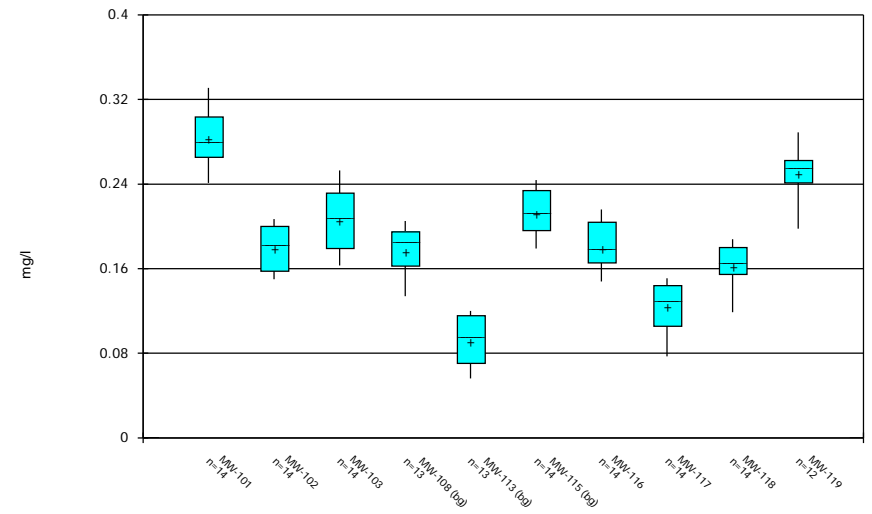
Box & Whiskers Plot



Constituent: Chloride Analysis Run 4/21/2020 12:08 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

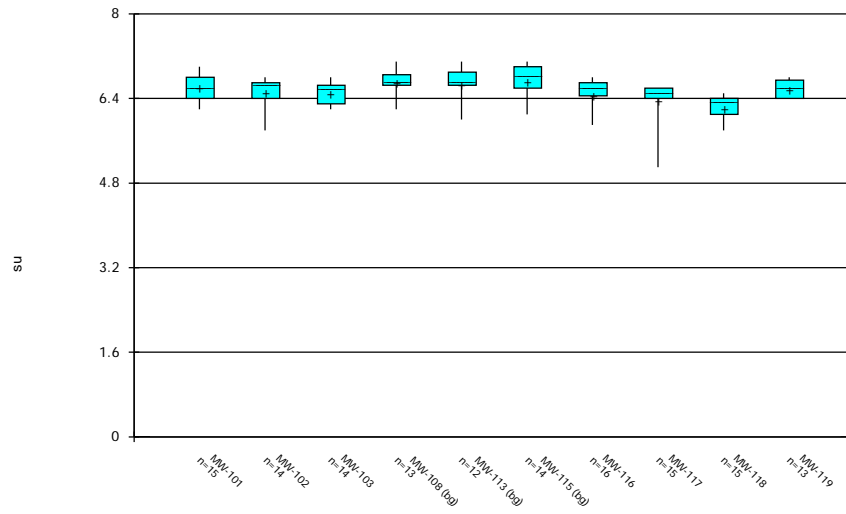
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 4/21/2020 12:08 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

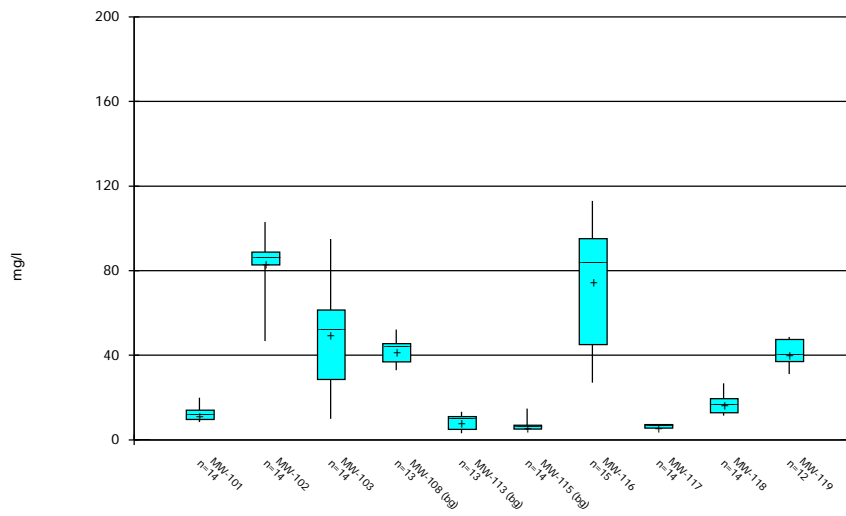
Box & Whiskers Plot



Constituent: pH Analysis Run 4/21/2020 12:08 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



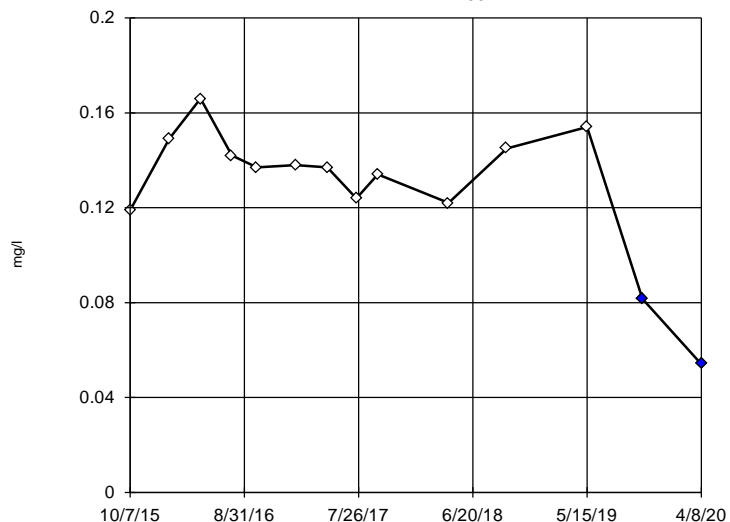
Constituent: Sulfate Analysis Run 4/21/2020 12:08 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

**Statistically Significant Outliers,
Period of Record through First Half of 2020**

Dixon's Outlier Test

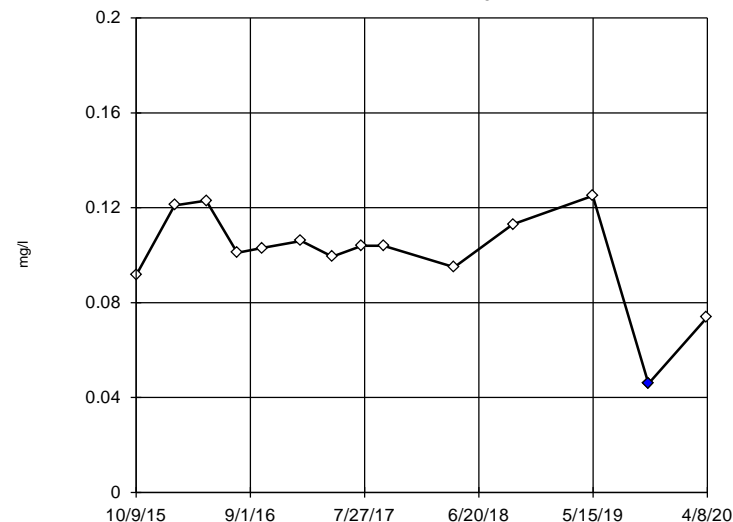
MW-103



n = 14
 Statistical outliers are drawn as solid.
 Testing for 2 low outliers.
 Mean = 0.1288.
 Std. Dev. = 0.0292.
 0.0816 (J); c = 0.5994
 tabl = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9664
 Critical = 0.883
 The distribution, after removal of suspect values, was found to be normally distributed.

Dixon's Outlier Test

MW-118



n = 14
 Statistical outlier is drawn as solid.
 Testing for 2 low outliers.
 Mean = 0.1004.
 Std. Dev. = 0.02065.
 0.0739 (J); c = 0.4459
 tabl = 0.546.
 Alpha = 0.05.
 0.0459 (J); c = 0.6085
 tabl = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9438
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Boron Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

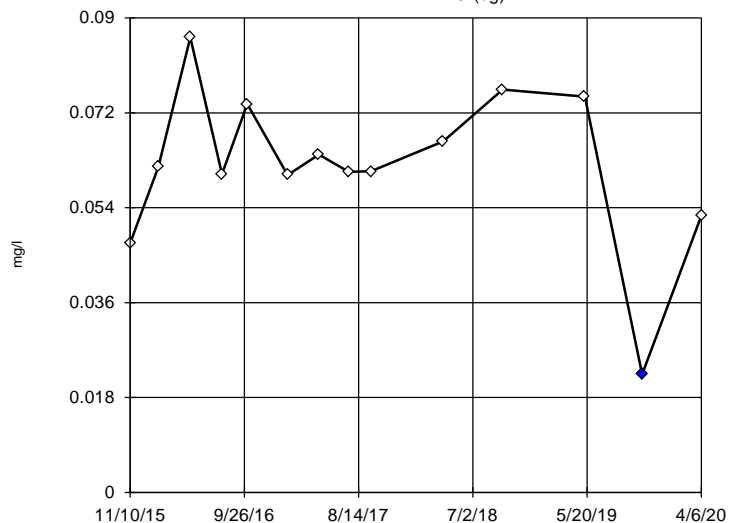
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Constituent: Boron Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-115 (bg)



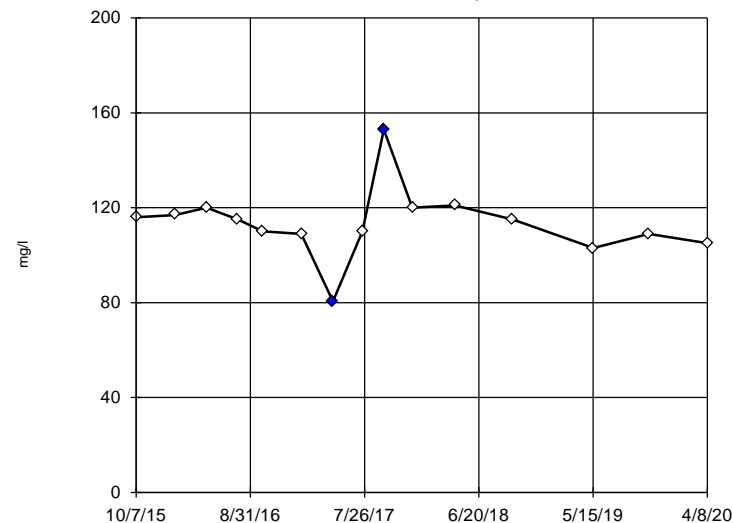
n = 14
 Statistical outlier is drawn as solid.
 Testing for 1 low outlier.
 Mean = 0.06203.
 Std. Dev. = 0.01523.
 0.0224 (J); c = 0.5712
 tabl = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9532
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Boron Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-101



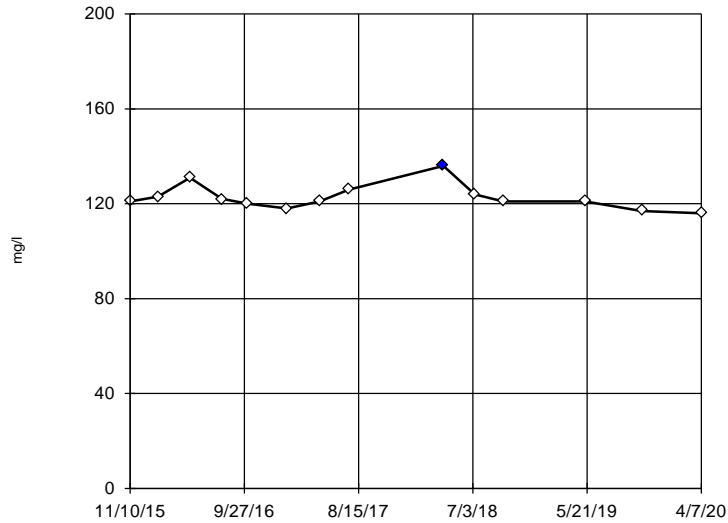
n = 15
 Statistical outliers are drawn as solid.
 Testing for 1 high and 1 low outliers.
 Mean = 113.6.
 Std. Dev. = 14.79.
 153; c = 0.6875
 tabl = 0.525.
 80.5; c = 0.6203
 tabl = 0.525.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9377
 Critical = 0.889
 The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Calcium Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

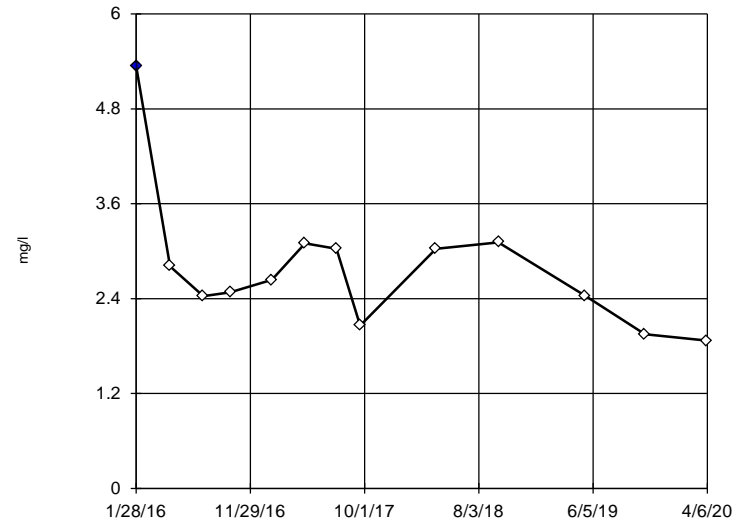
MW-102



n = 14
 Statistical outlier is drawn as solid.
 Testing for 2 high outliers.
 Mean = 122.6.
 Std. Dev. = 5.387.
 131: c = 0.5385
 tab1 = 0.546.
 Alpha = 0.05.
 136: c = 0.5556
 tab1 = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk@alpha = 0.1
 Calculated = 0.9273
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Dixon's Outlier Test

MW-108 (bg)



n = 13
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 2.792.
 Std. Dev. = 0.879.
 5.34: c = 0.6608
 tab1 = 0.521.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk@alpha = 0.1
 Calculated = 0.9056
 Critical = 0.883
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Calcium Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

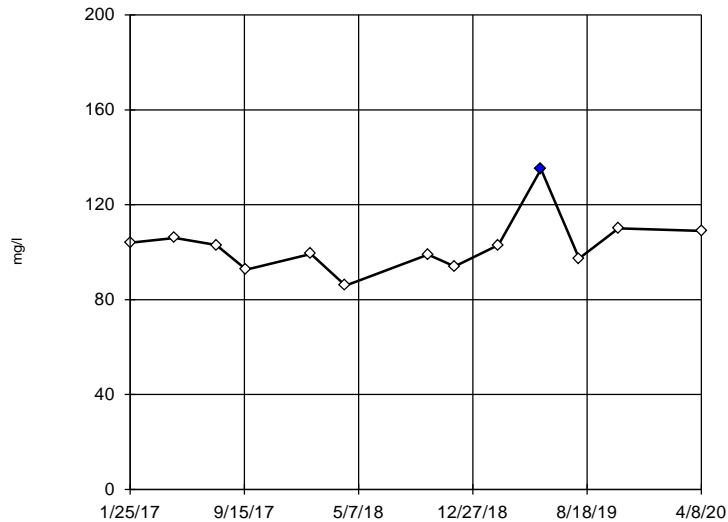
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Constituent: Chloride Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

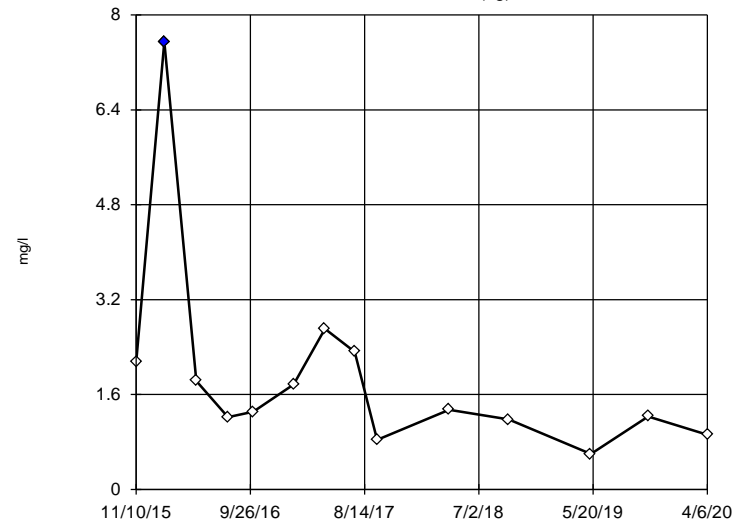
MW-119



n = 13
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 102.9.
 Std. Dev. = 11.76.
 135: c = 0.6147
 tab1 = 0.521.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk@alpha = 0.1
 Calculated = 0.9646
 Critical = 0.883
 The distribution, after removal of suspect value, was found to be normally distributed.

Dixon's Outlier Test

MW-115 (bg)



n = 14
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 1.925.
 Std. Dev. = 1.725.
 7.55: c = 0.7891
 tab1 = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk@alpha = 0.1
 Calculated = 0.949
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Calcium Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

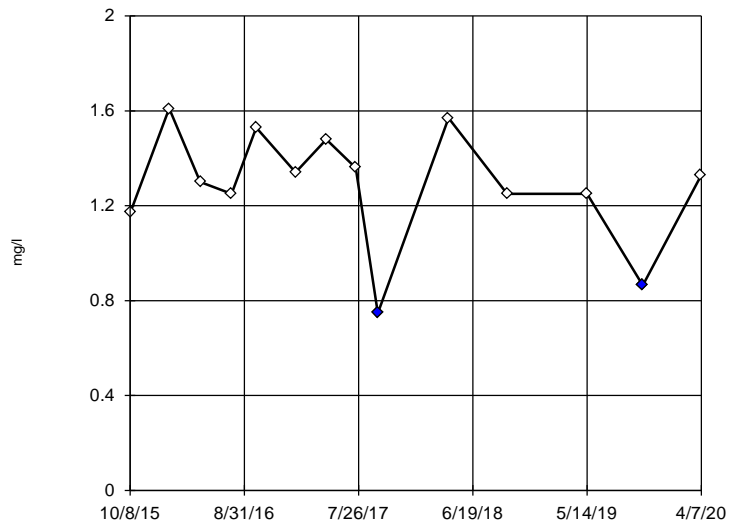
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Constituent: Chloride Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-117



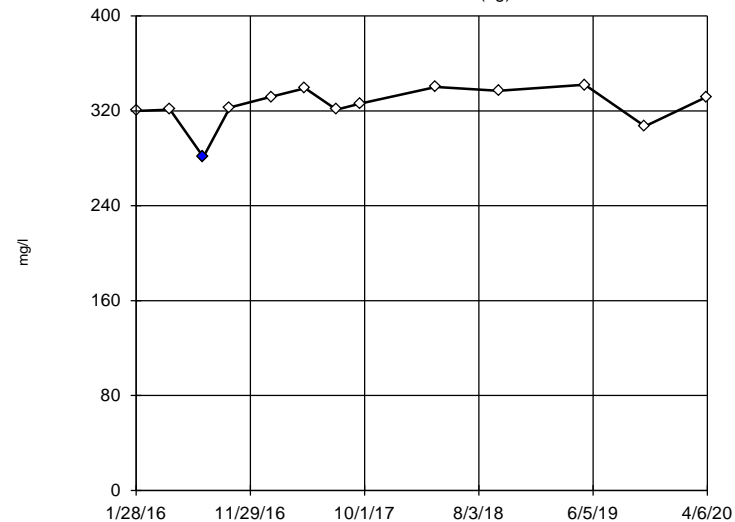
n = 14
 Statistical outliers are drawn as solid.
 Testing for 2 low outliers.
 Mean = 1.289.
 Std. Dev. = 0.2448.
 0.864 (J); c = 0.5796
 tabl = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9174
 Critical = 0.883
 The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Chloride Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-113 (bg)



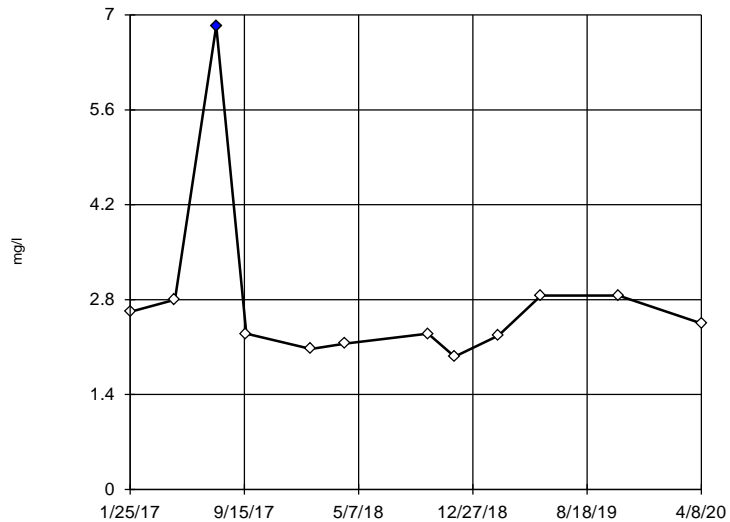
n = 13
 Statistical outlier is drawn as solid.
 Testing for 1 low outlier.
 Mean = 324.7.
 Std. Dev. = 16.51.
 281 (B); c = 0.661
 tabl = 0.521.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9364
 Critical = 0.883
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Dissolved Solids Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-119



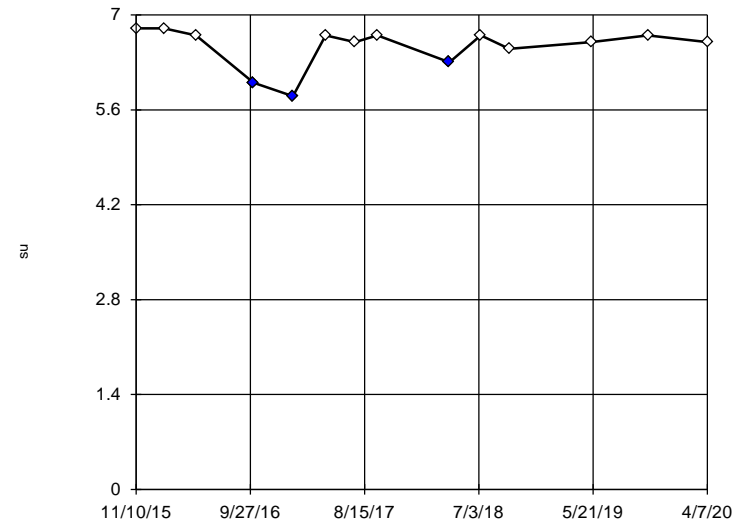
n = 12
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 2.79.
 Std. Dev. = 1.312.
 6.84; c = 0.8344
 tabl = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9191
 Critical = 0.876
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Chloride Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-102



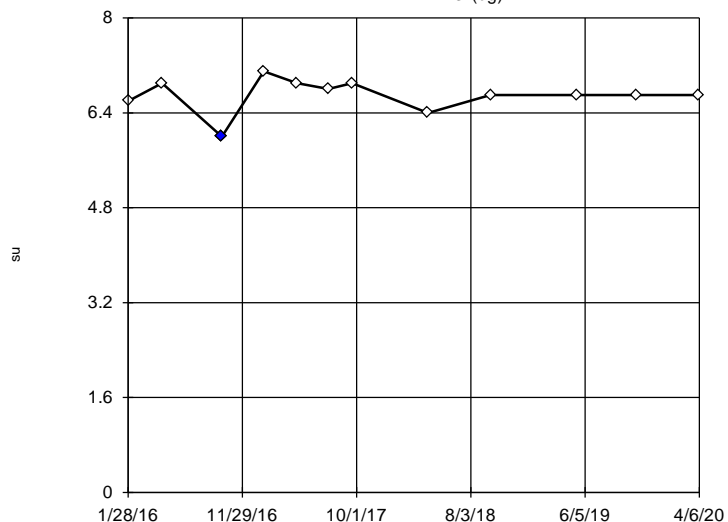
n = 14
 Statistical outliers are drawn as solid.
 Testing for 3 low outliers.
 Mean = 6.536.
 Std. Dev. = 0.3003.
 6.3; c = 0.75
 tabl = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.8991
 Critical = 0.876
 The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: pH Analysis Run 12/1/2020 3:25 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-113 (bg)



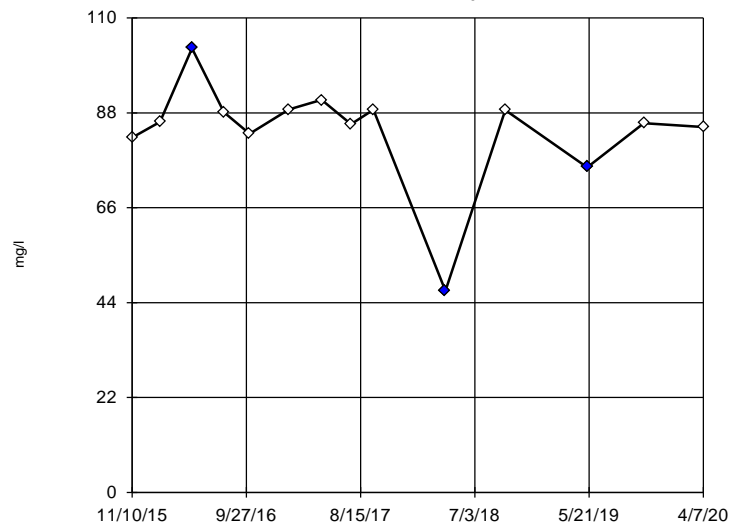
n = 12
 Statistical outlier is drawn as solid.
 Testing for 1 low outlier.
 Mean = 6.7.
 Std. Dev. = 0.2828.
 6: c = 0.6667
 tab1 = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9479
 Critical = 0.876
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: pH Analysis Run 12/1/2020 3:26 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-102



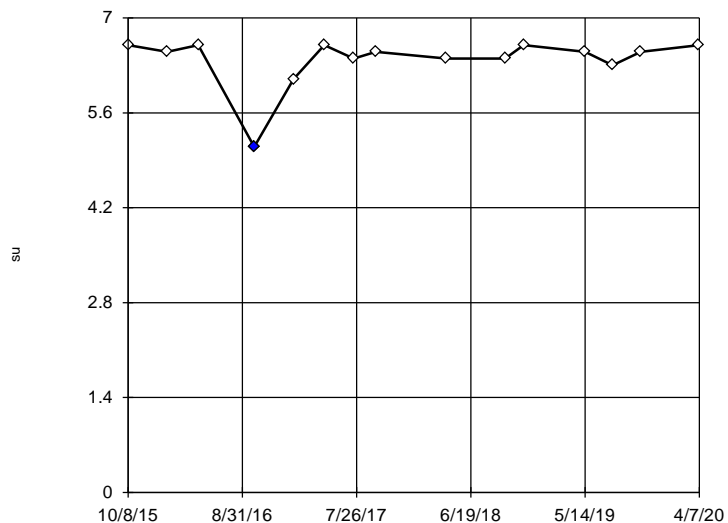
n = 14
 Statistical outliers are drawn as solid.
 Testing for 1 high and 2 low outliers.
 Mean = 84.1.
 Std. Dev. = 12.31.
 91: c = 0.7172
 tab1 = 0.546.
 75.4: c = 0.5821
 tab1 = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.956
 Critical = 0.876
 The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Sulfate Analysis Run 12/1/2020 3:26 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Tukey's Outlier Screening

MW-117



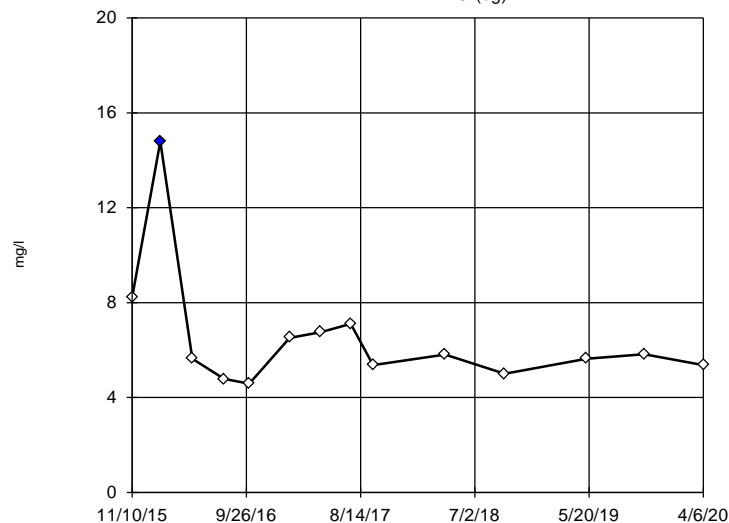
n = 15
 Outlier is drawn as solid.
 Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.
 Data were x*6 transformed to achieve best W statistic (graph shown in original units).
 High cutoff = 7.066, low cutoff = 5.474, based on IQR multiplier of 3.

Constituent: pH Analysis Run 12/1/2020 3:26 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-115 (bg)



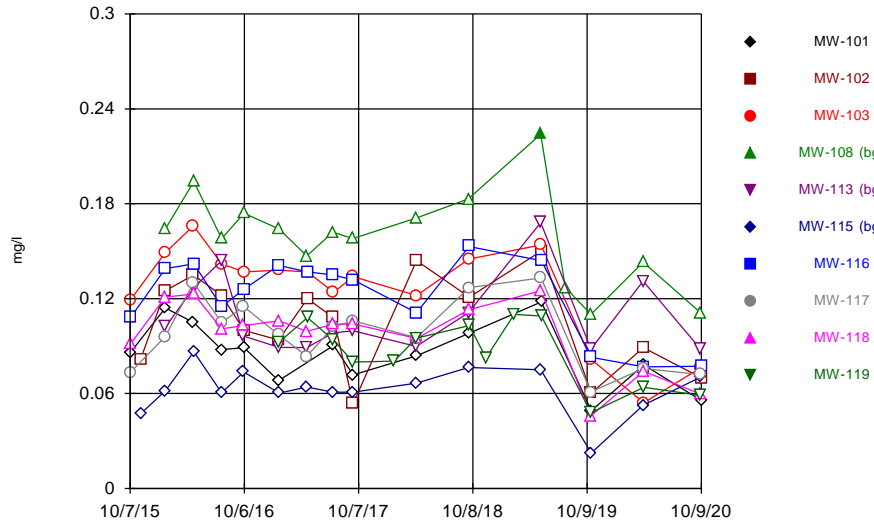
n = 14
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 6.53.
 Std. Dev. = 2.574.
 14.8: c = 0.7857
 tab1 = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9268
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Sulfate Analysis Run 12/1/2020 3:26 PM View: 2020-1H detected

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Time-Series Plots, Second Half of 2020 Data Set

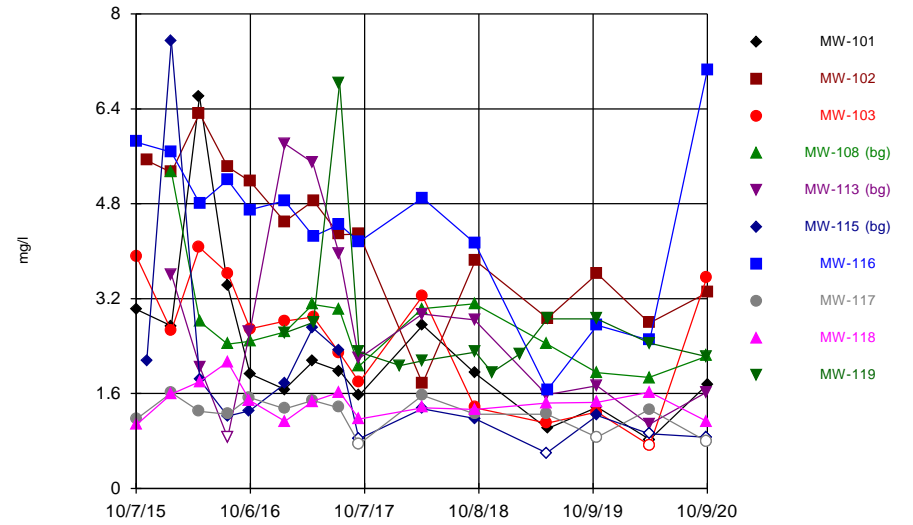
Time Series



Constituent: Boron Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

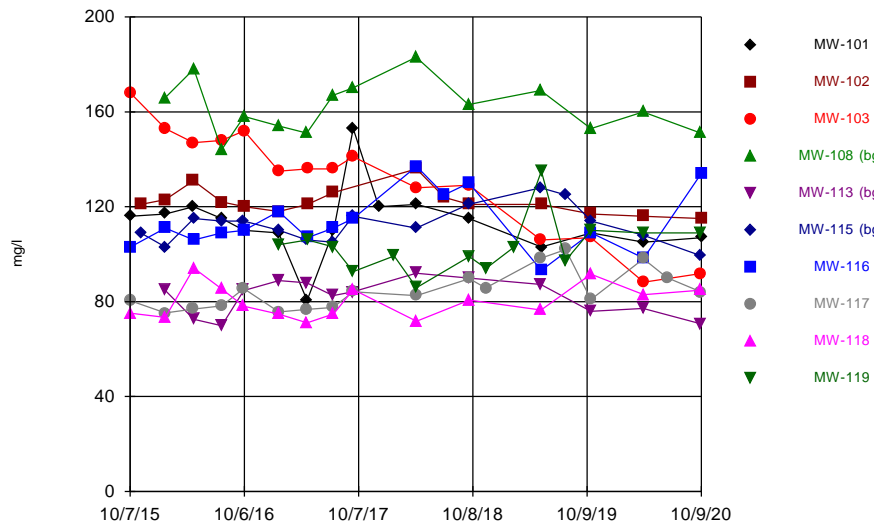
Time Series



Constituent: Chloride Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

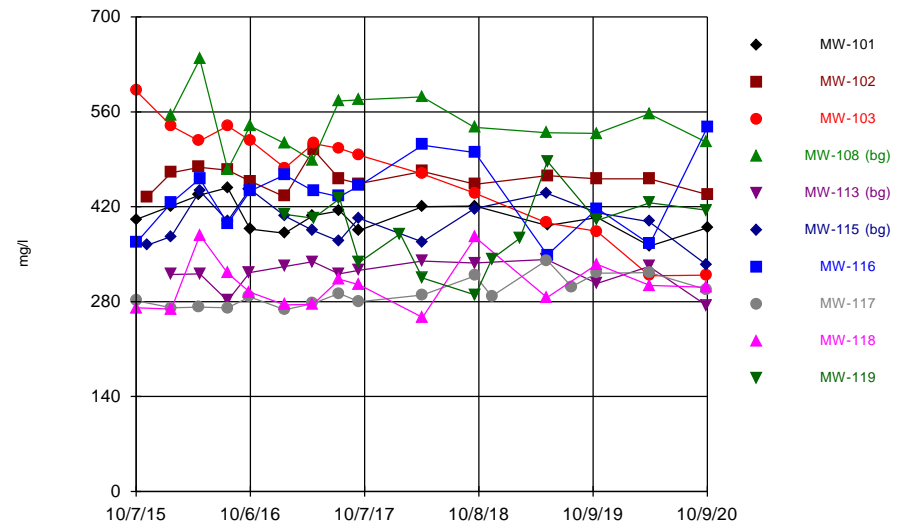
Time Series



Constituent: Calcium Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

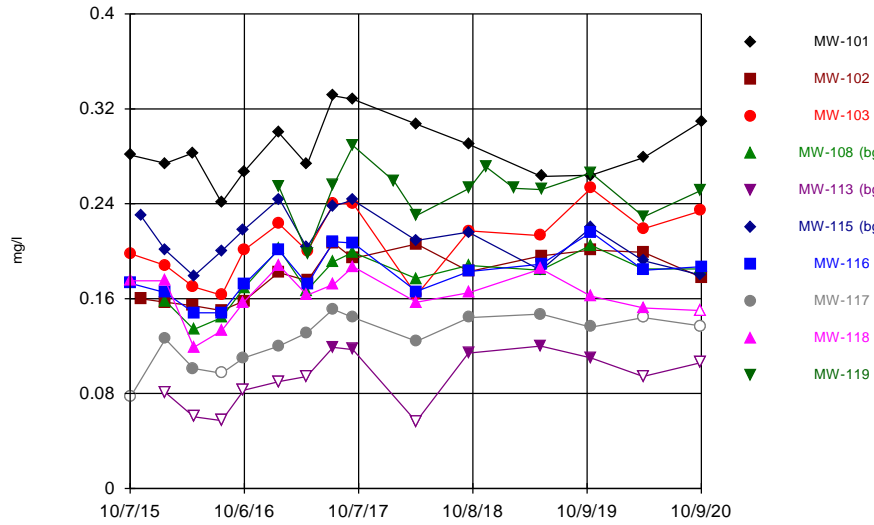
Time Series



Constituent: Dissolved Solids Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

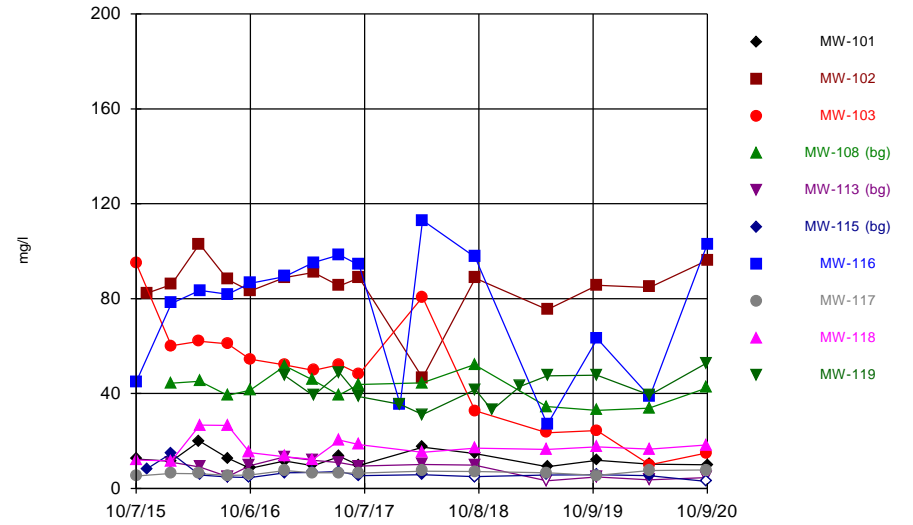
Time Series



Constituent: Fluoride Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

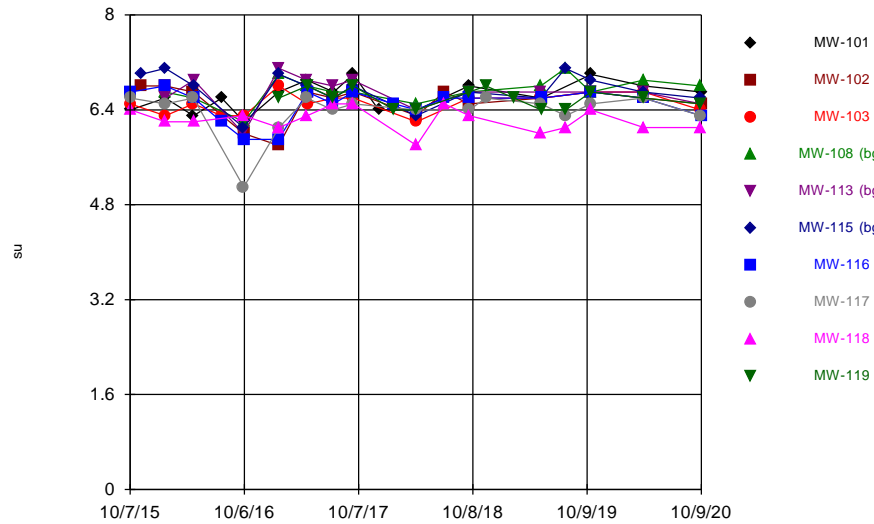
Time Series



Constituent: Sulfate Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Time Series

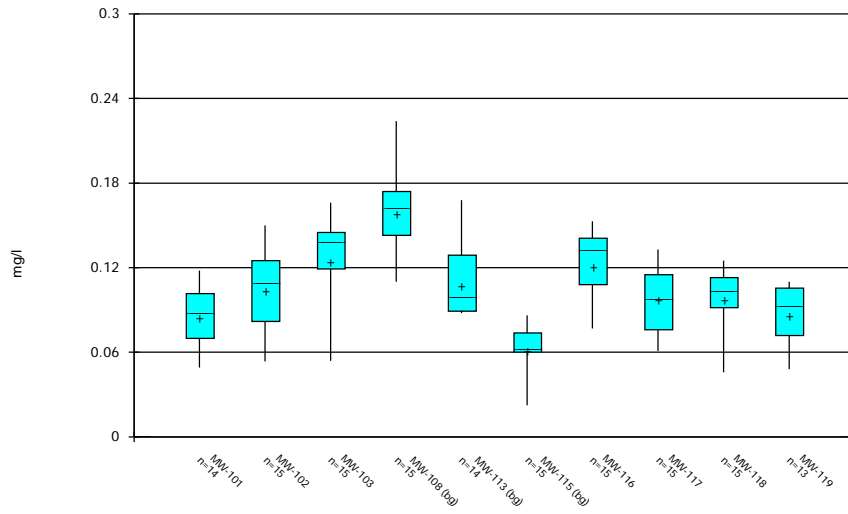


Constituent: pH Analysis Run 12/1/2020 1:02 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

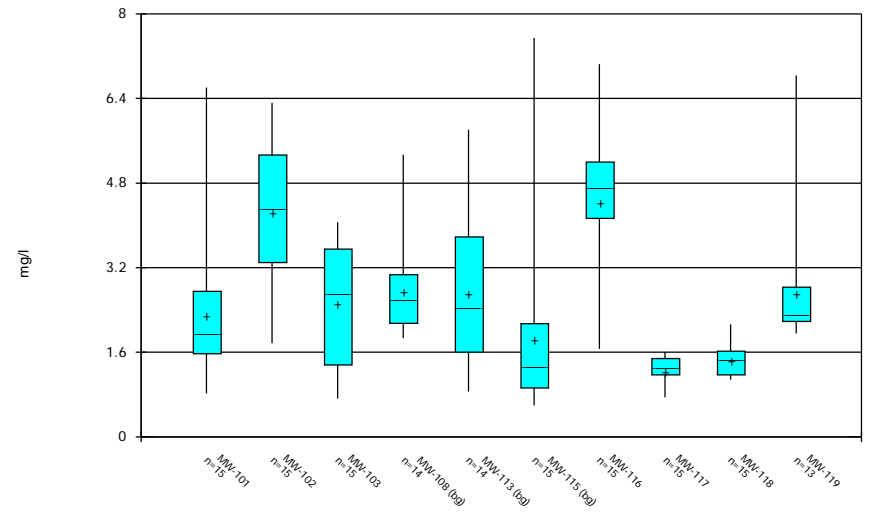
Box-and-Whisker Plots, Second Half of 2020 Data Set

Box & Whiskers Plot



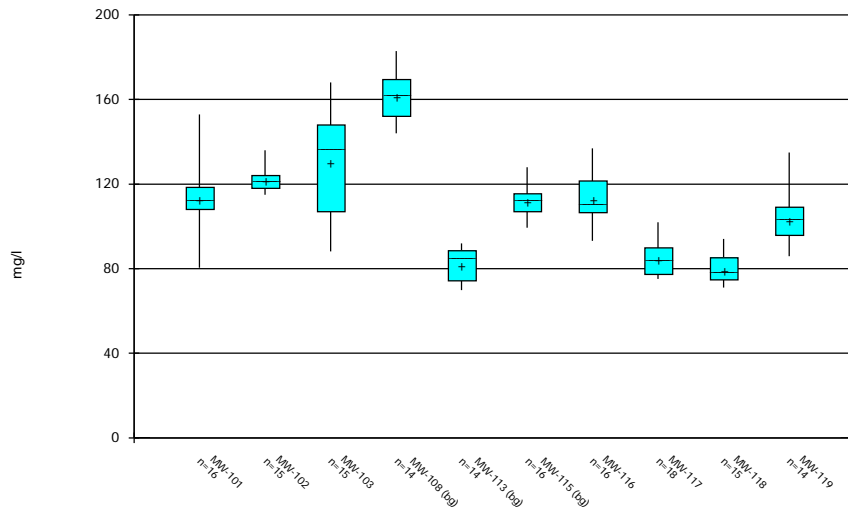
Constituent: Boron Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



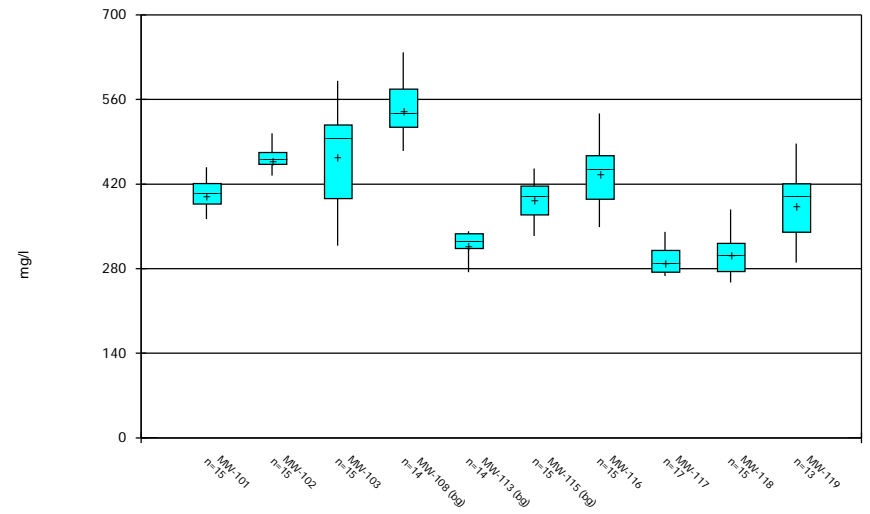
Constituent: Chloride Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



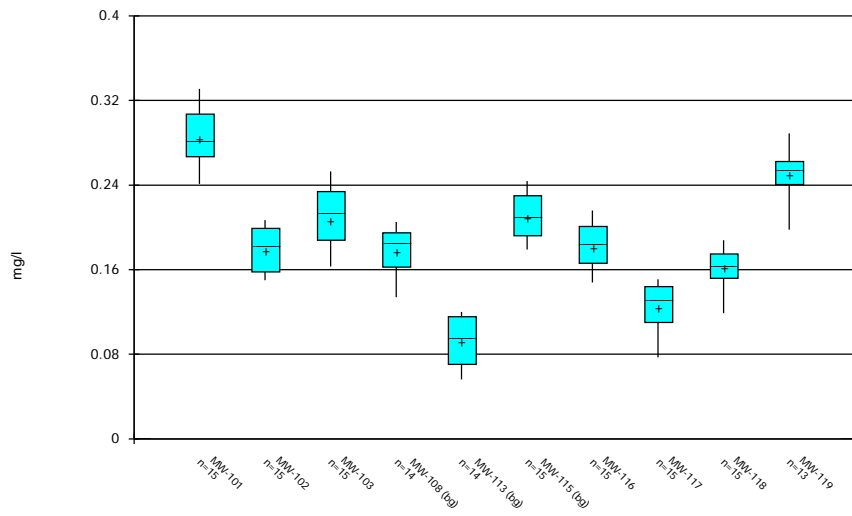
Constituent: Calcium Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



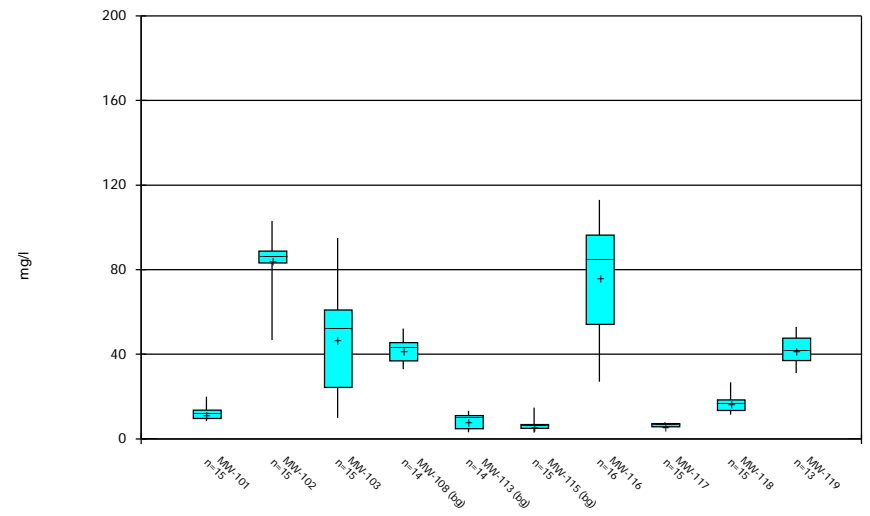
Constituent: Dissolved Solids Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



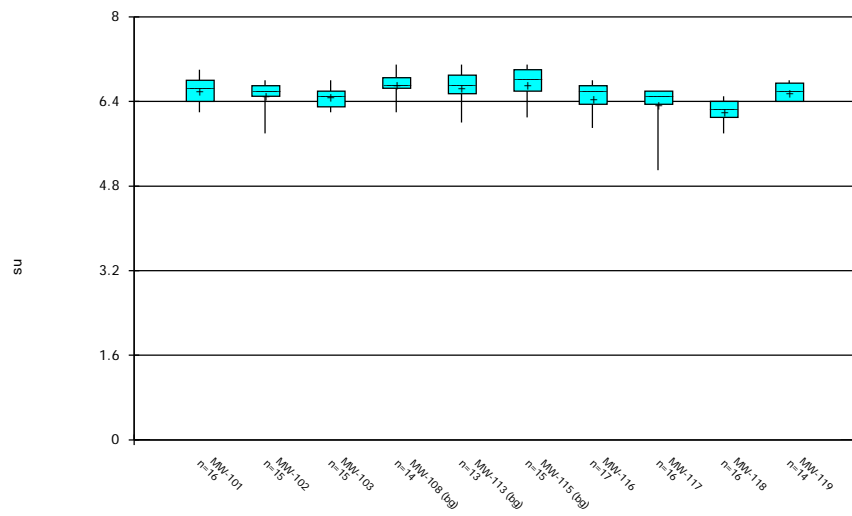
Constituent: Fluoride Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



Constituent: Sulfate Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot

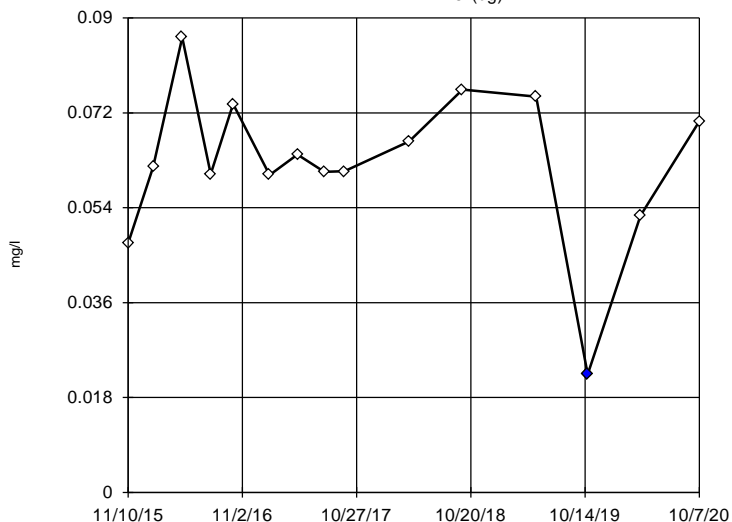


Constituent: pH Analysis Run 12/1/2020 1:03 PM View: 2020-2H Distributional
 Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

**Statistically Significant Outliers,
Period of Record through Second Half of 2020**

Dixon's Outlier Test

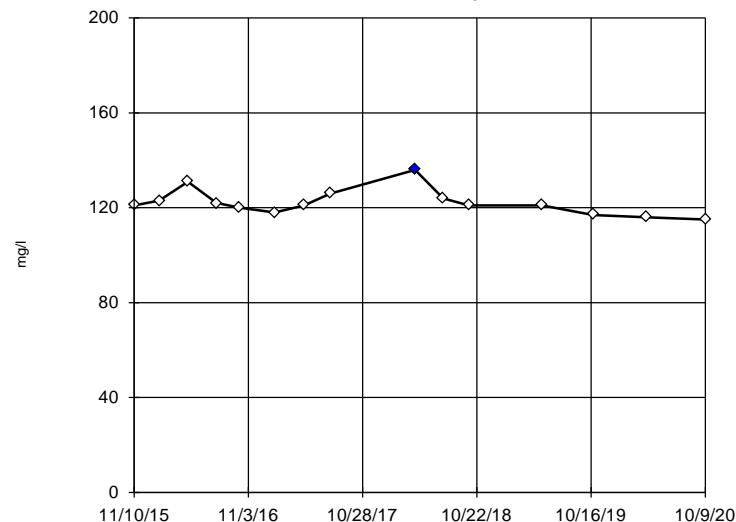
MW-115 (bg)



n = 15
 Statistical outlier is drawn as solid.
 Testing for 1 low outlier.
 Mean = 0.06259.
 Std. Dev. = 0.01483.
 0.0224 (J): c = 0.5712
 tab1 = 0.525.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9671
 Critical = 0.895
 The distribution, after removal of suspect value, was found to be normally distributed.

Dixon's Outlier Test

MW-102



n = 15
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 122.1.
 Std. Dev. = 5.553.
 136: c = 0.5263
 tab1 = 0.525.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9432
 Critical = 0.895
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Boron Analysis Run 12/1/2020 3:29 PM View: 2020-2H Distributional

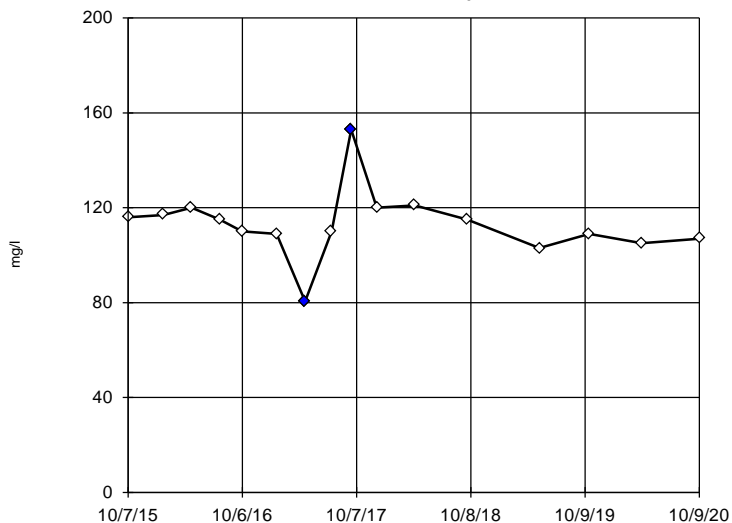
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Constituent: Calcium Analysis Run 12/1/2020 3:29 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

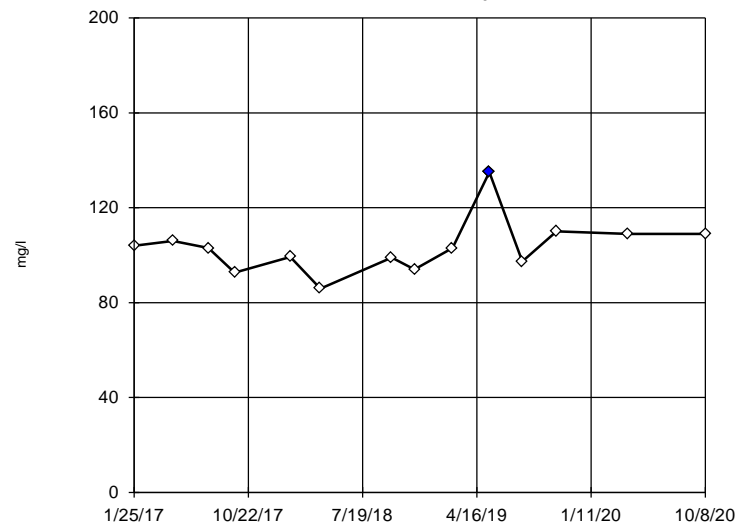
MW-101



n = 16
 Statistical outliers are drawn as solid.
 Testing for 1 high and 1 low outliers.
 Mean = 113.2.
 Std. Dev. = 14.38.
 153: c = 0.6875
 tab1 = 0.507.
 80.5: c = 0.6203
 tab1 = 0.507.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9408
 Critical = 0.895
 The distribution, after removal of suspect values, was found to be normally distributed.

Dixon's Outlier Test

MW-119



n = 14
 Statistical outlier is drawn as solid.
 Testing for 1 high outlier.
 Mean = 103.4.
 Std. Dev. = 11.41.
 135: c = 0.6341
 tab1 = 0.546.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9473
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Calcium Analysis Run 12/1/2020 3:29 PM View: 2020-2H Distributional

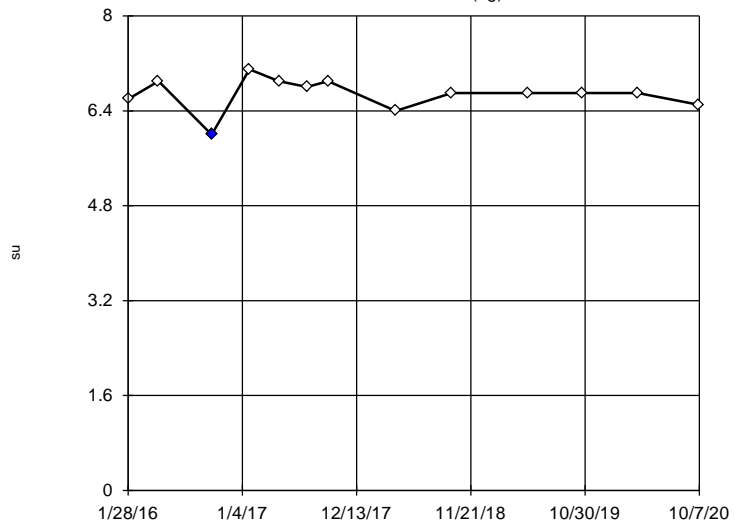
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Constituent: Calcium Analysis Run 12/1/2020 3:29 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-113 (bg)



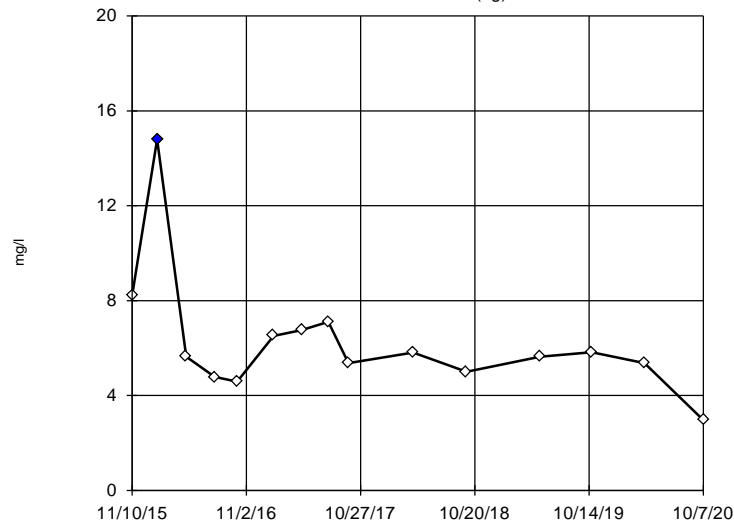
n = 13
 Statistical outlier is drawn as solid.
 Testing for 1 low outlier.
 Mean = 6.685.
 Std. Dev. = 0.2764.
 6: c = 0.5556
 tabl = 0.521.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9626
 Critical = 0.883
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: pH Analysis Run 12/1/2020 3:30 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-115 (bg)



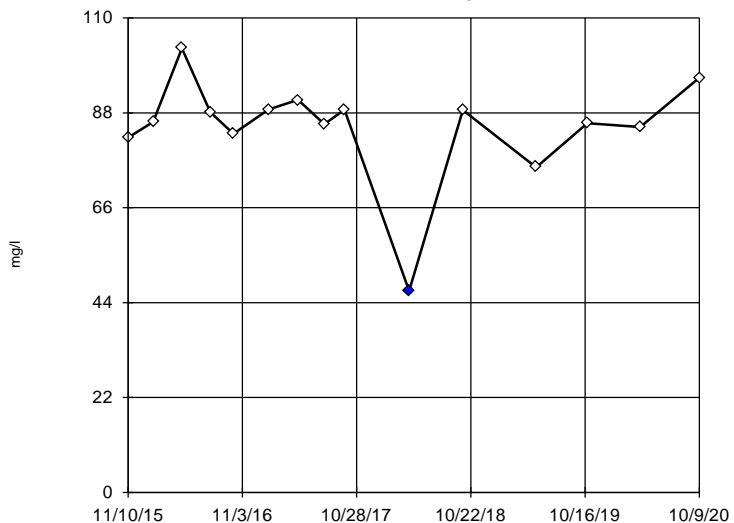
n = 15
 Statistical outlier is drawn as solid.
 Testing for 1 high and 1 low outliers.
 Mean = 6.293.
 Std. Dev. = 2.645.
 14.8: c = 0.7692
 tabl = 0.525.
 2.97 (J): c = 0.4407
 tabl = 0.525.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9268
 Critical = 0.889
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Sulfate Analysis Run 12/1/2020 3:30 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Dixon's Outlier Test

MW-102



n = 15
 Statistical outlier is drawn as solid.
 Testing for 1 low outlier.
 Mean = 84.9.
 Std. Dev. = 12.26.
 46.7: c = 0.8036
 tabl = 0.525.
 Alpha = 0.05.
 Normality test used:
 Shapiro Wilk @ alpha = 0.1
 Calculated = 0.9277
 Critical = 0.895
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Sulfate Analysis Run 12/1/2020 3:30 PM View: 2020-2H Distributional

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

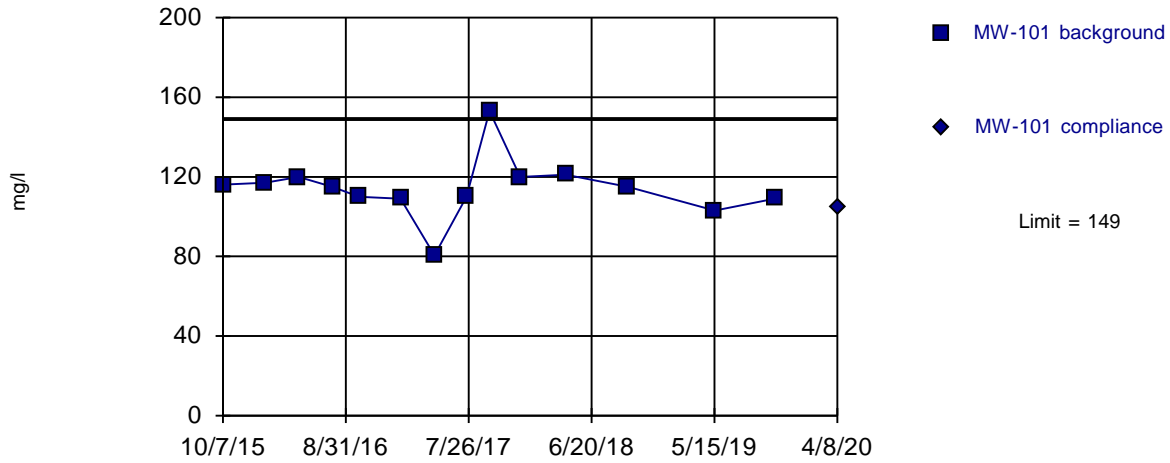
APPENDIX G

Statistical Evaluation Results

Prediction Limits, First Half 2020 Monitoring Event

Within Limit

Prediction Limit
Intrawell Parametric



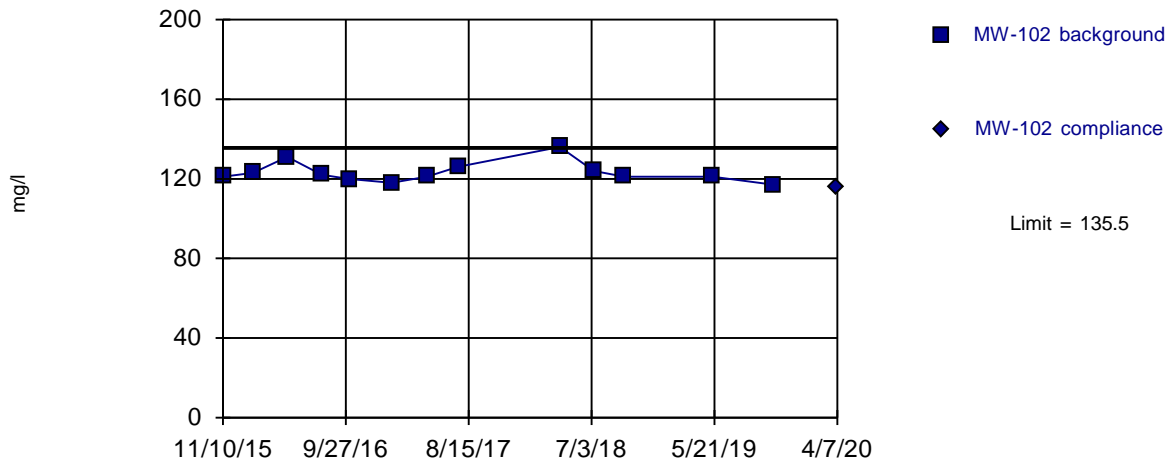
Background Data Summary: Mean=114.2, Std. Dev.=15.14, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8396, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



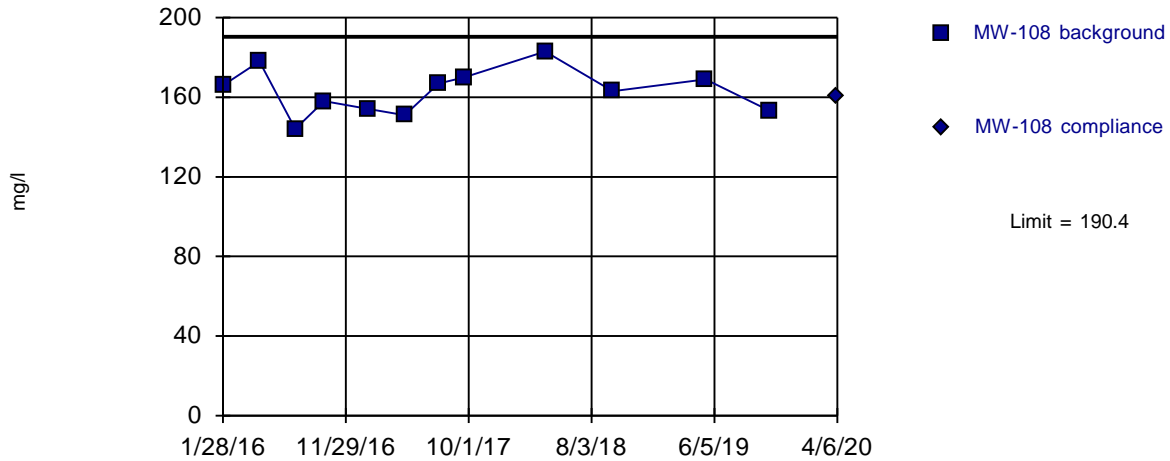
Background Data Summary: Mean=123.2, Std. Dev.=5.242, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8497, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



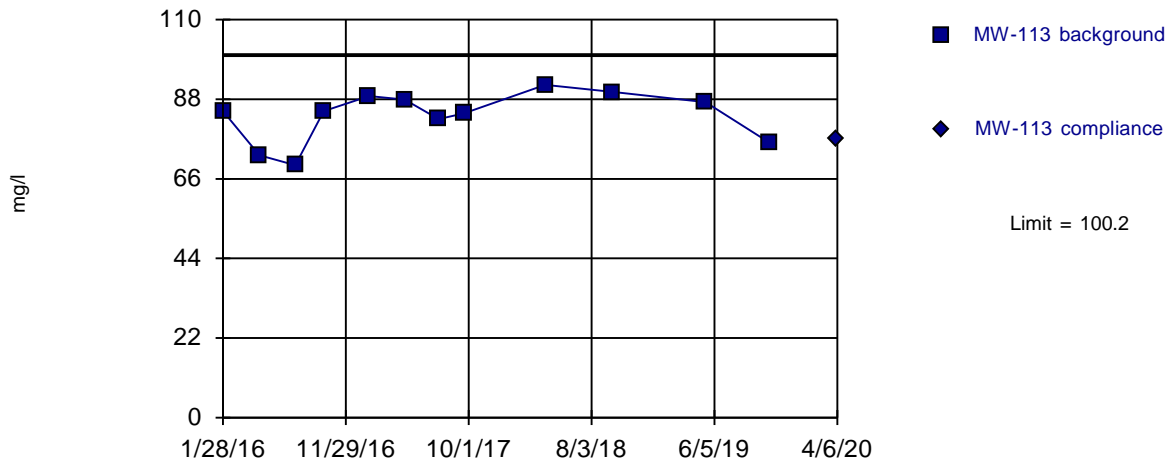
Background Data Summary: Mean=163, Std. Dev.=11.47, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



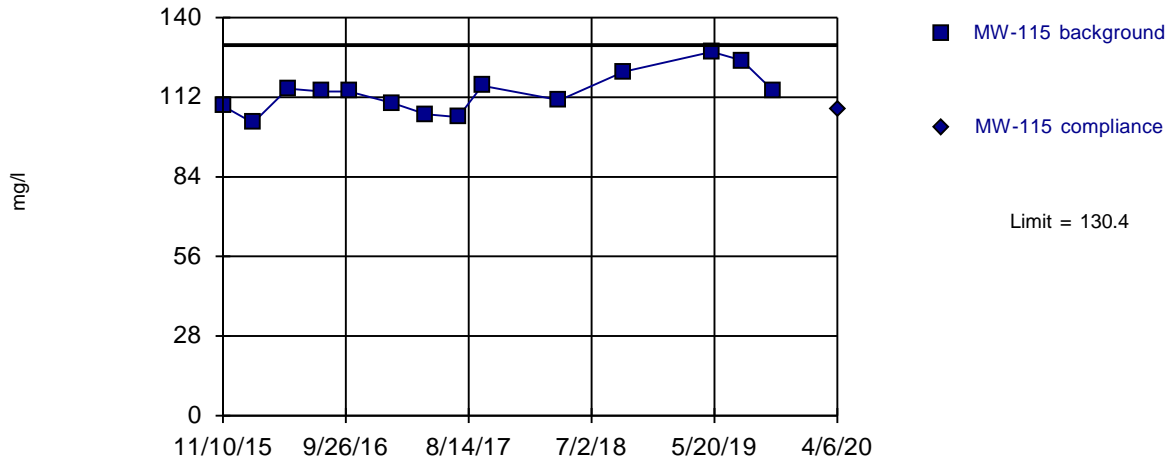
Background Data Summary: Mean=83.35, Std. Dev.=7.053, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8981, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



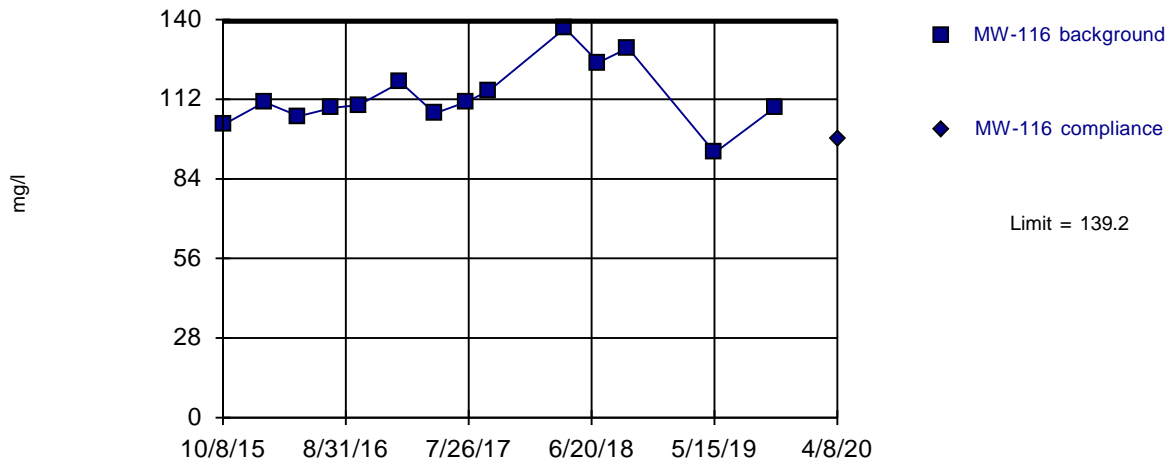
Background Data Summary: Mean=113.6, Std. Dev.=7.26, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9529, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/24/2020 10:37 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



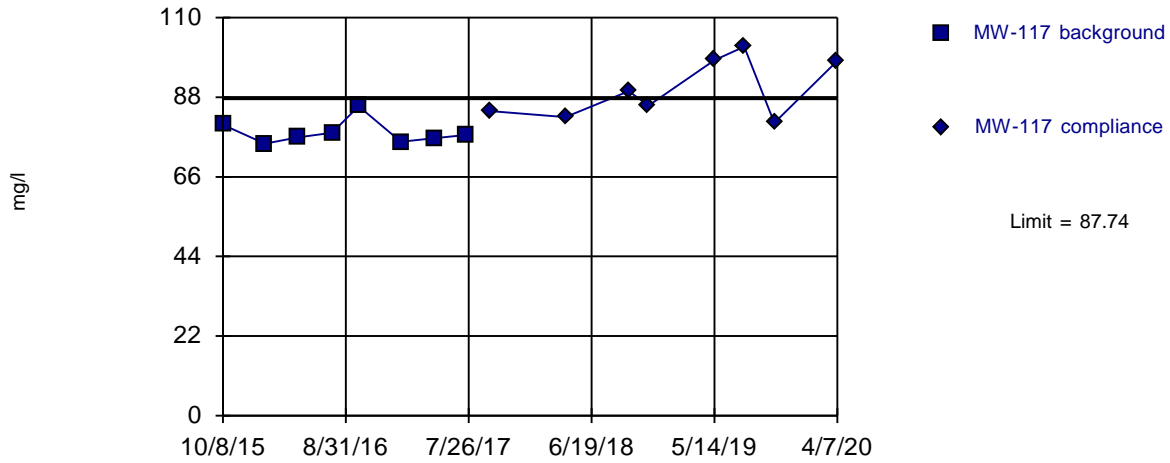
Background Data Summary: Mean=113.2, Std. Dev.=11.31, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9391, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Exceeds Limit

Prediction Limit Intrawell Parametric



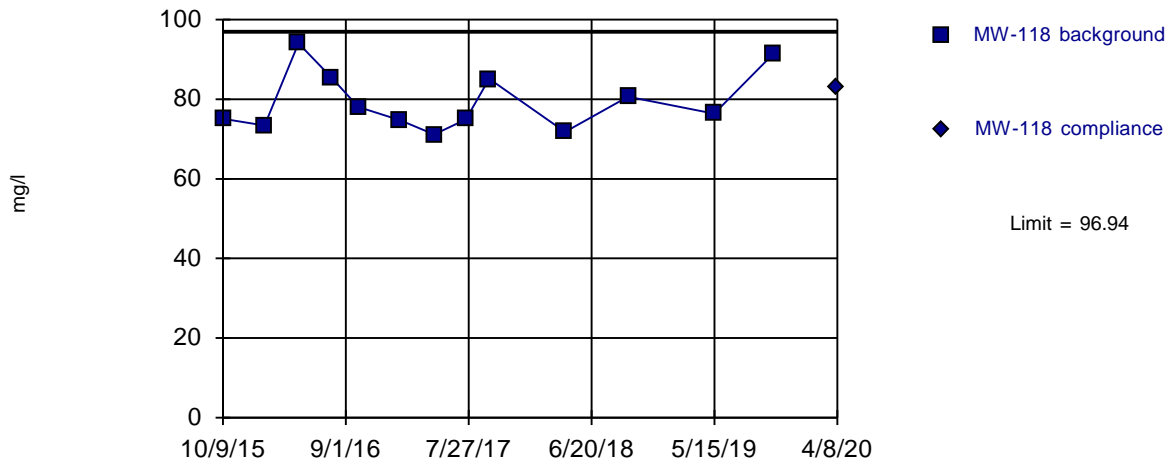
Background Data Summary: Mean=78.28, Std. Dev.=3.33, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8288, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/28/2020 10:10 AM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



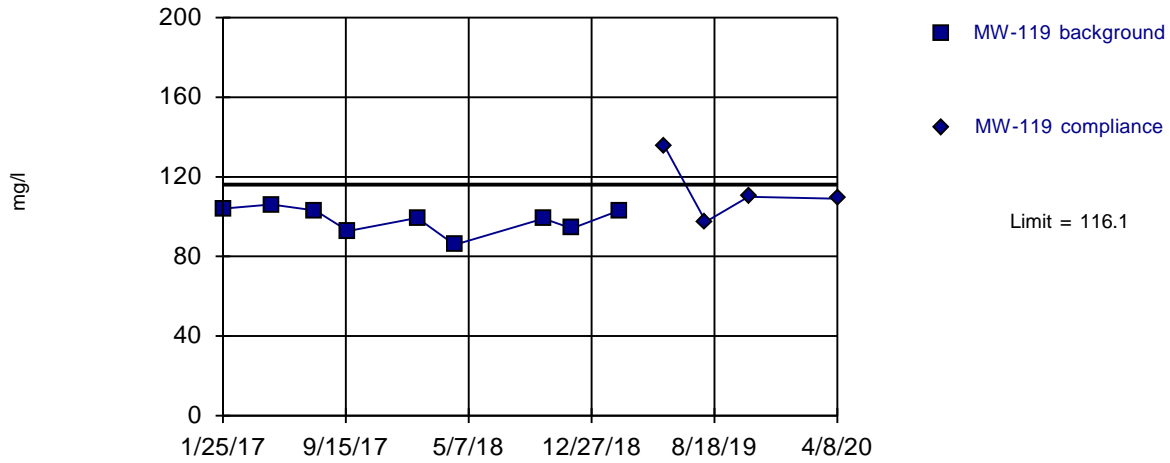
Background Data Summary: Mean=79.41, Std. Dev.=7.467, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8875, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



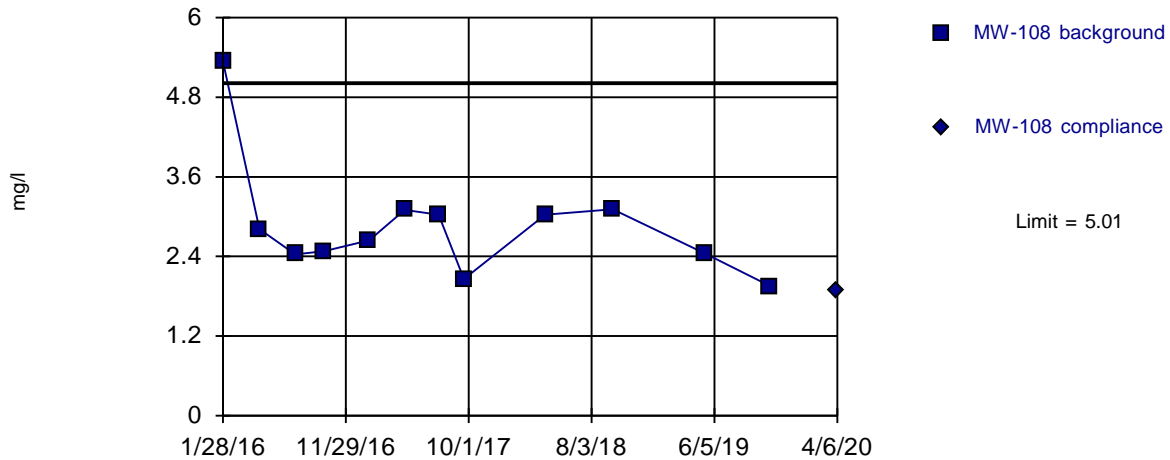
Background Data Summary: Mean=98.54, Std. Dev.=6.524, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9156, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



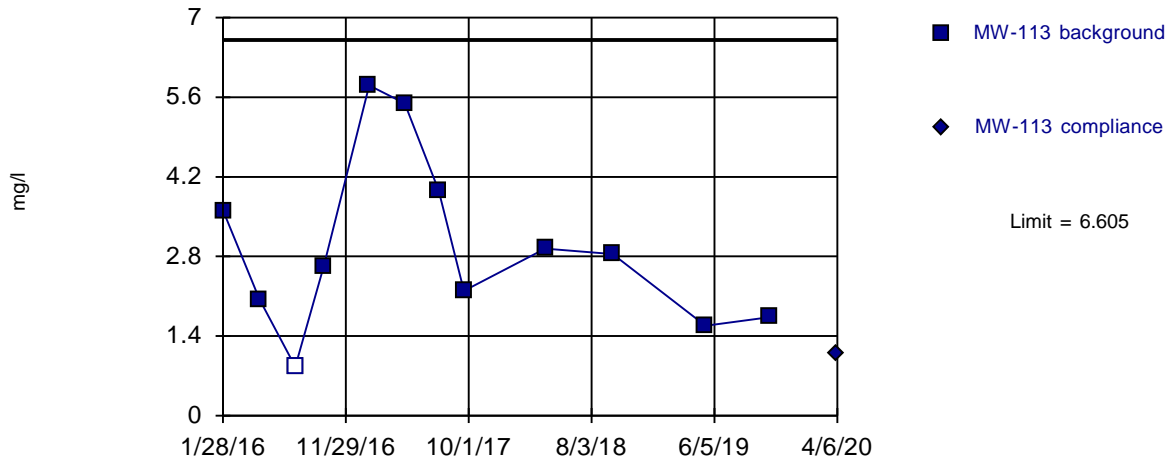
Background Data Summary (based on square root transformation): Mean=1.679, Std. Dev.=0.2339, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8197, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



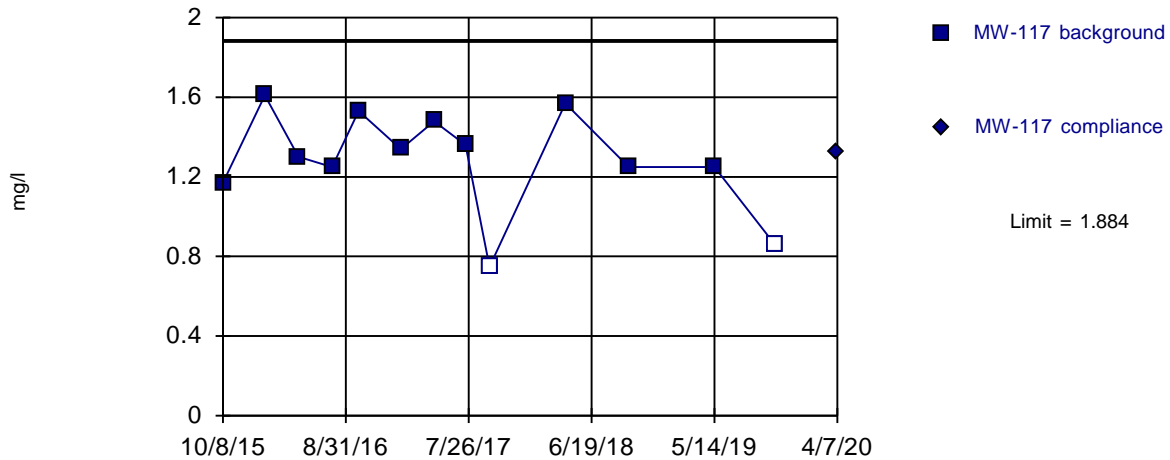
Background Data Summary: Mean=2.974, Std. Dev.=1.518, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9319, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



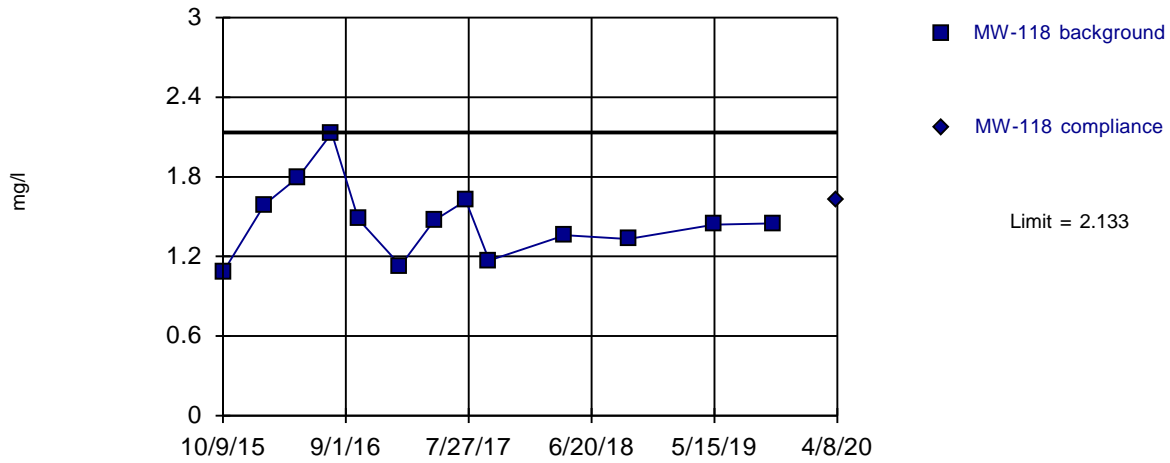
Background Data Summary: Mean=1.286, Std. Dev.=0.2545, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9083, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



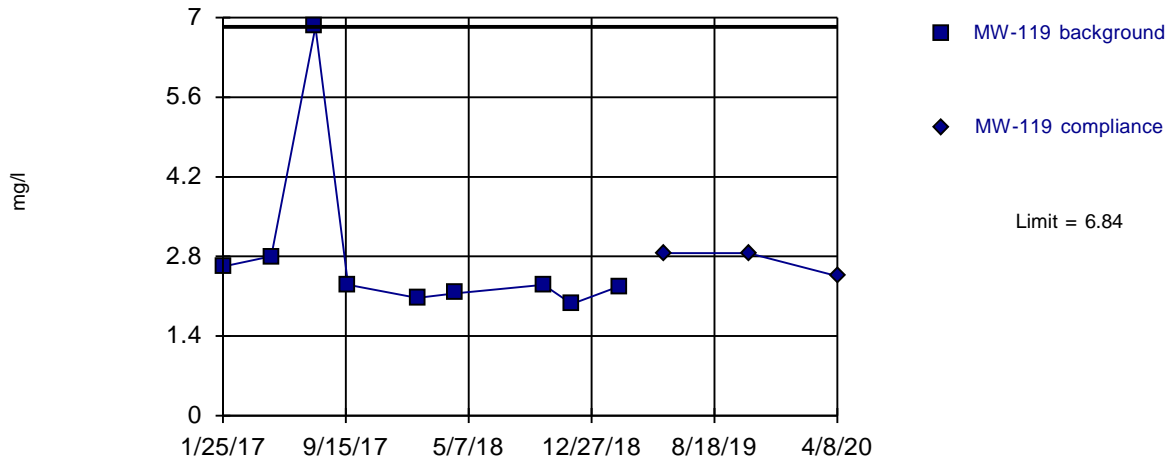
Background Data Summary: Mean=1.465, Std. Dev.=0.2846, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9348, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Non-parametric



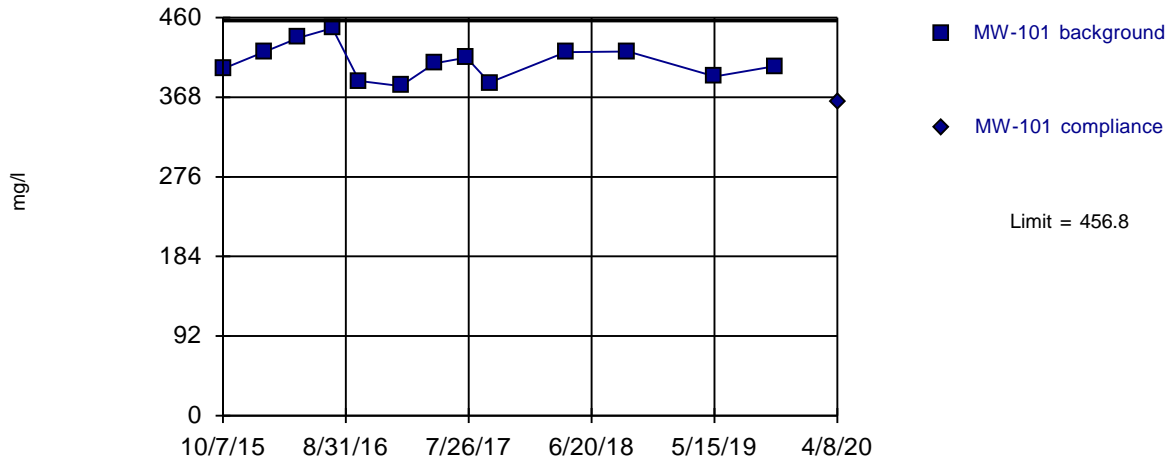
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 9 background values. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



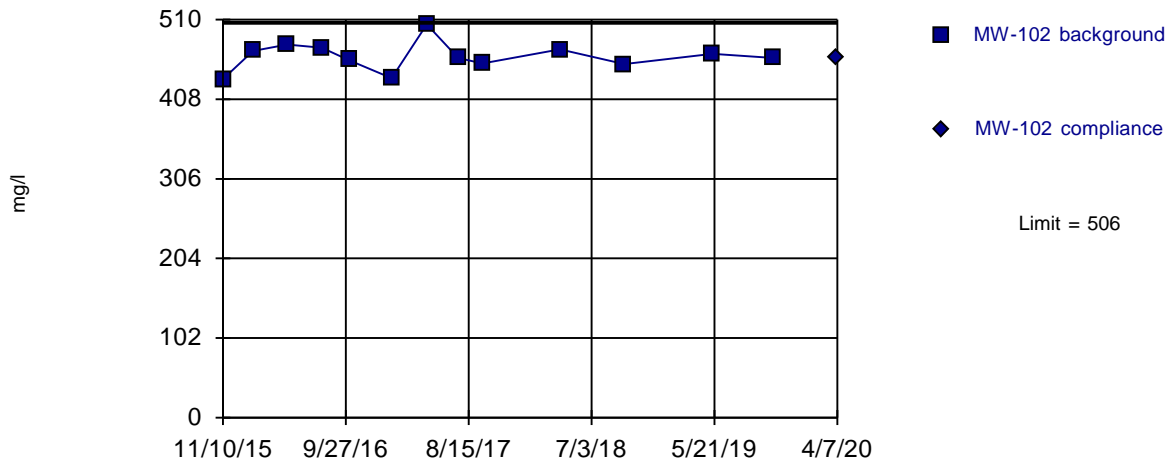
Background Data Summary: Mean=409.1, Std. Dev.=20.34, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9582, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



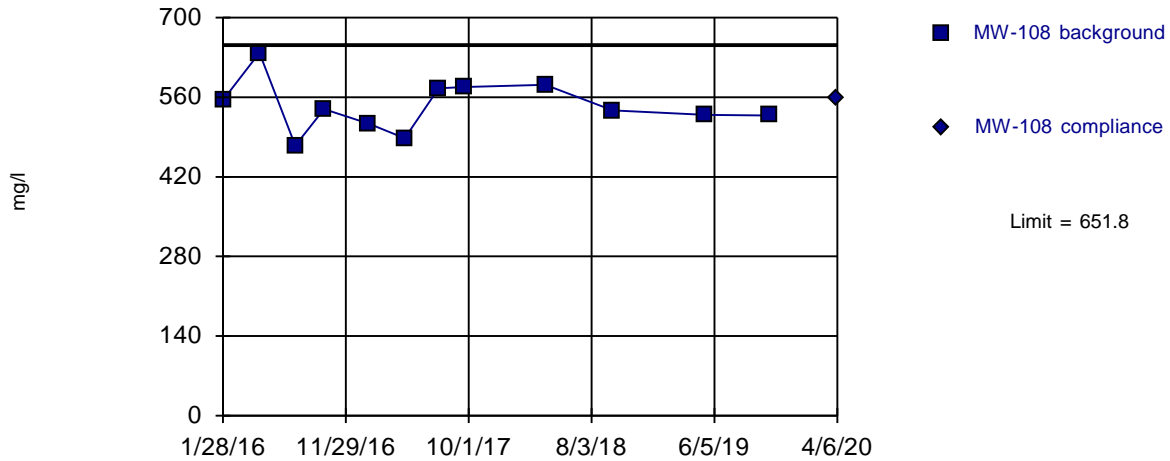
Background Data Summary: Mean=463.1, Std. Dev.=18.27, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9455, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



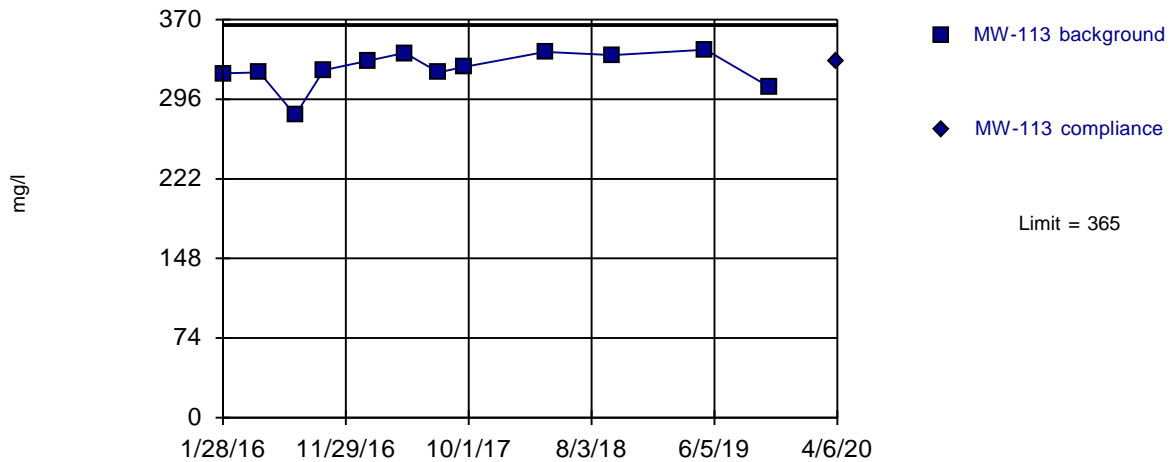
Background Data Summary: Mean=544.8, Std. Dev.=44.71, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9672, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



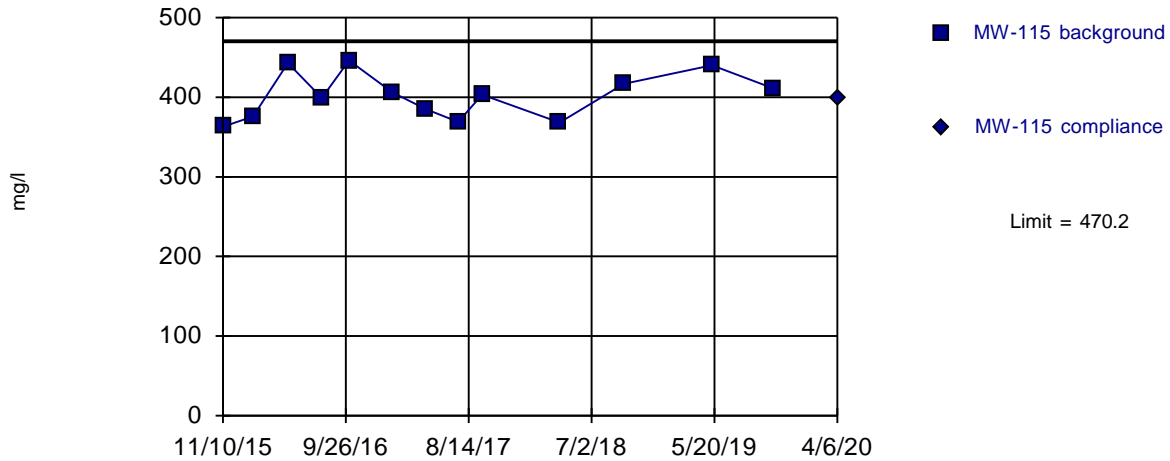
Background Data Summary: Mean=324.1, Std. Dev.=17.1, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8564, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



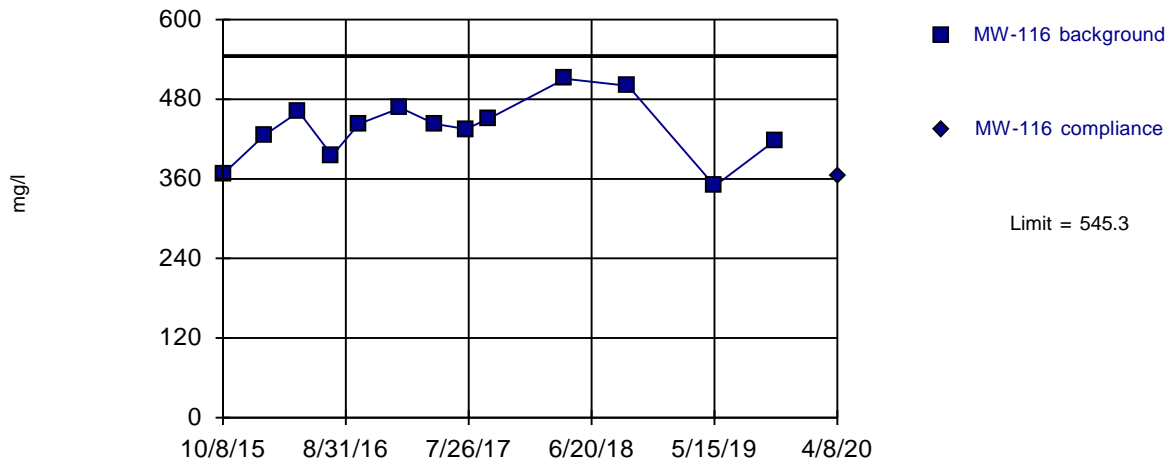
Background Data Summary: Mean=402, Std. Dev.=29.05, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9251, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



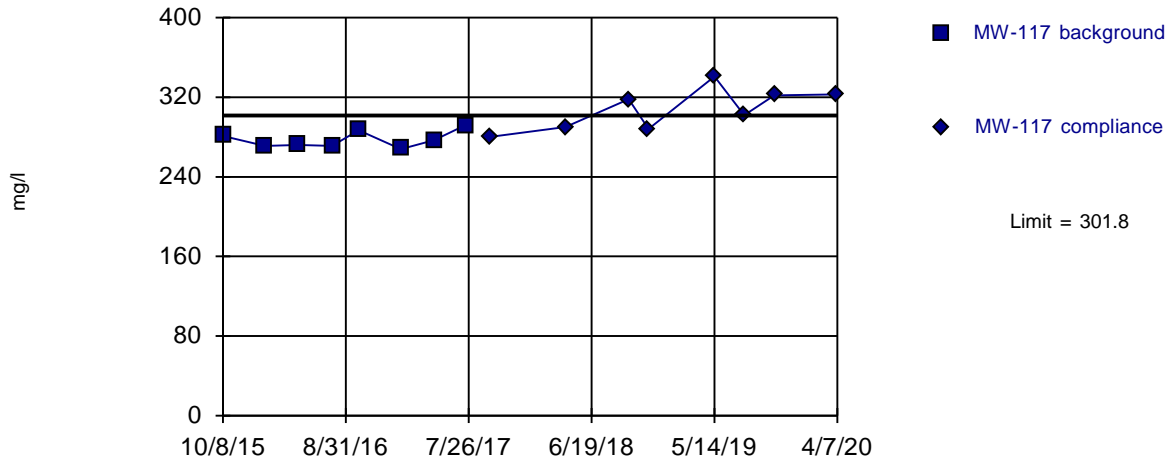
Background Data Summary: Mean=435.8, Std. Dev.=46.64, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9697, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Exceeds Limit

Prediction Limit Intrawell Parametric



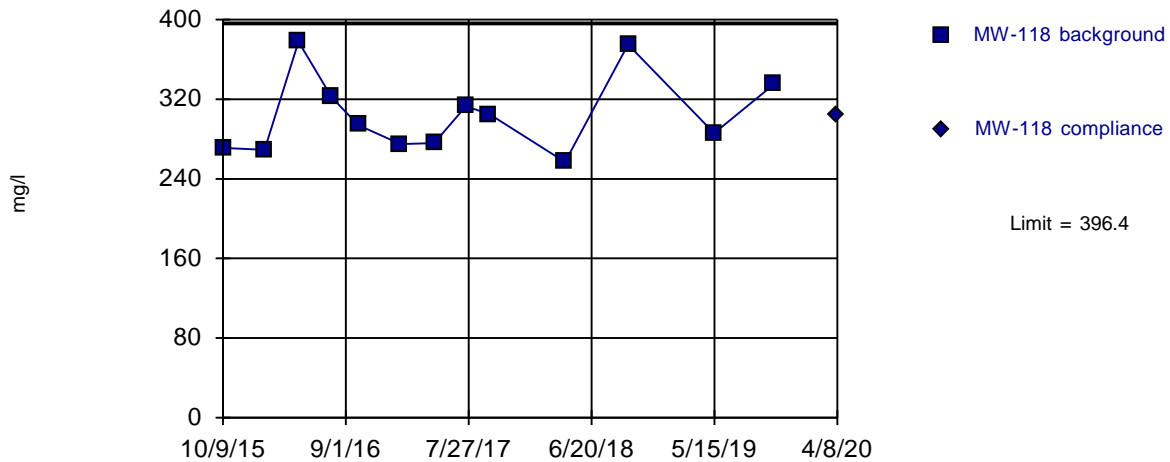
Background Data Summary: Mean=277.4, Std. Dev.=8.601, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9018, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



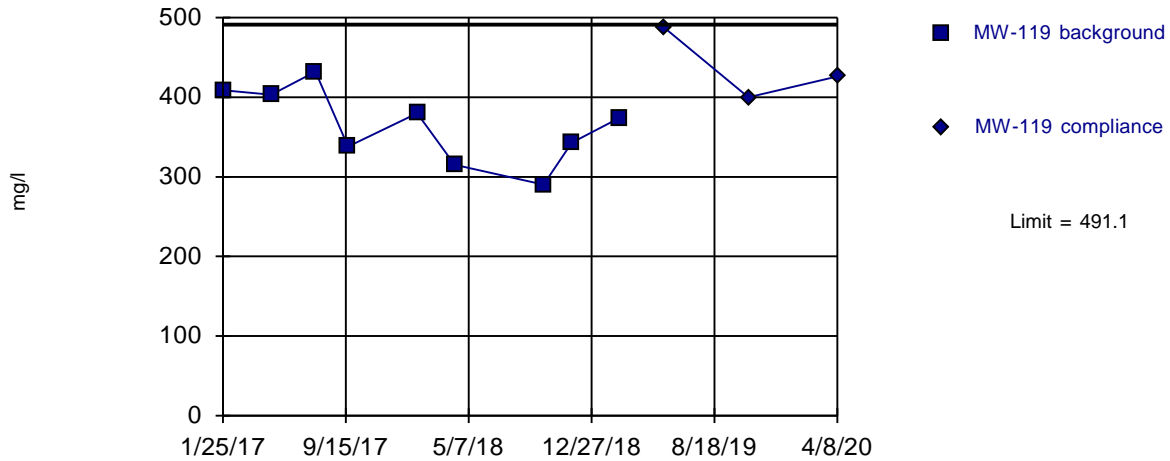
Background Data Summary: Mean=304.3, Std. Dev.=39.22, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8967, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



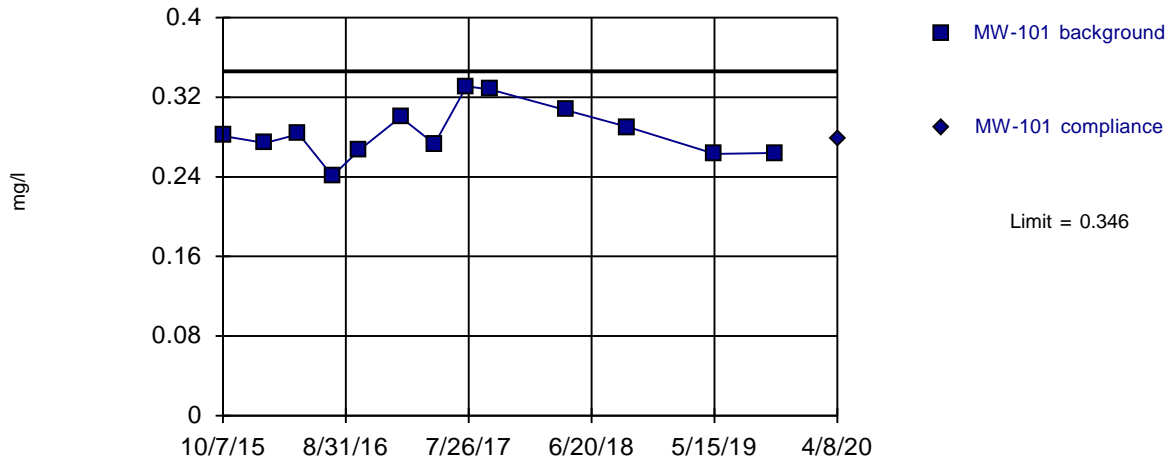
Background Data Summary: Mean=364.9, Std. Dev.=46.79, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9717, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



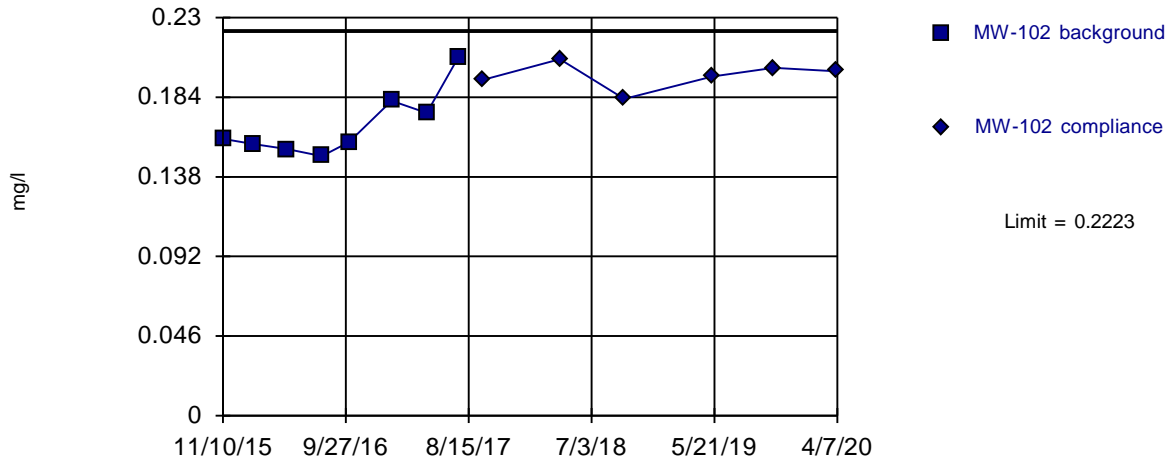
Background Data Summary: Mean=0.2848, Std. Dev.=0.02609, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9524, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



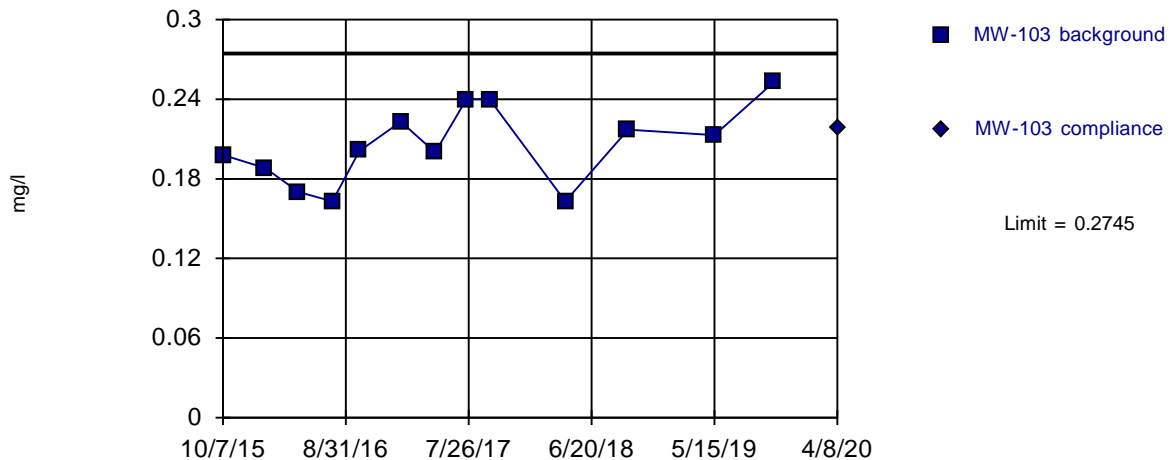
Background Data Summary: Mean=0.1679, Std. Dev.=0.01916, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8449, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



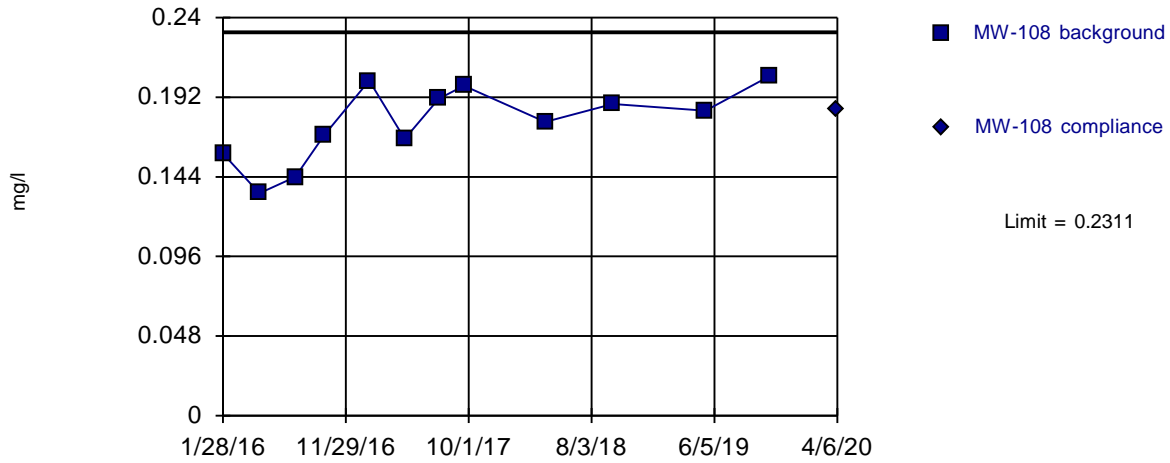
Background Data Summary: Mean=0.2053, Std. Dev.=0.02946, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.95, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



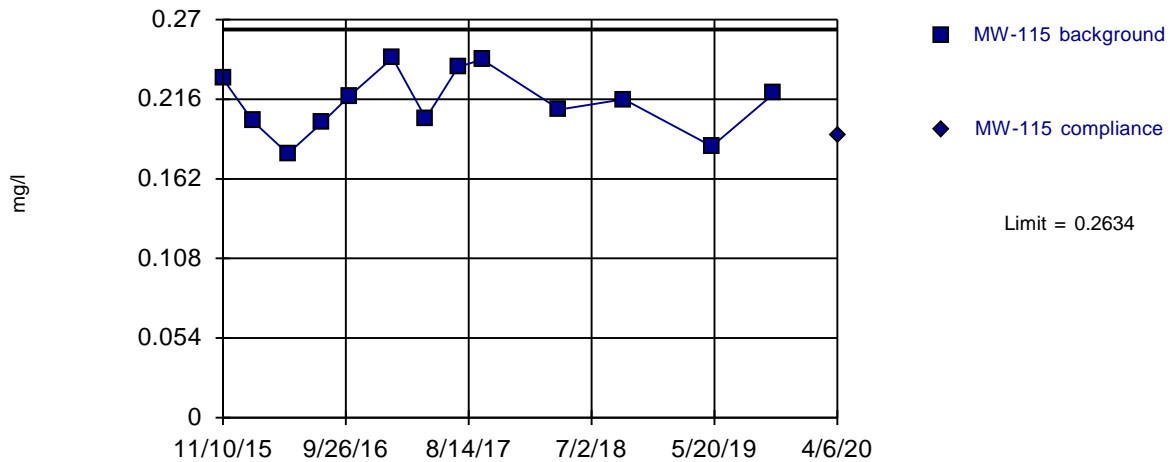
Background Data Summary: Mean=0.1765, Std. Dev.=0.0228, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9459, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



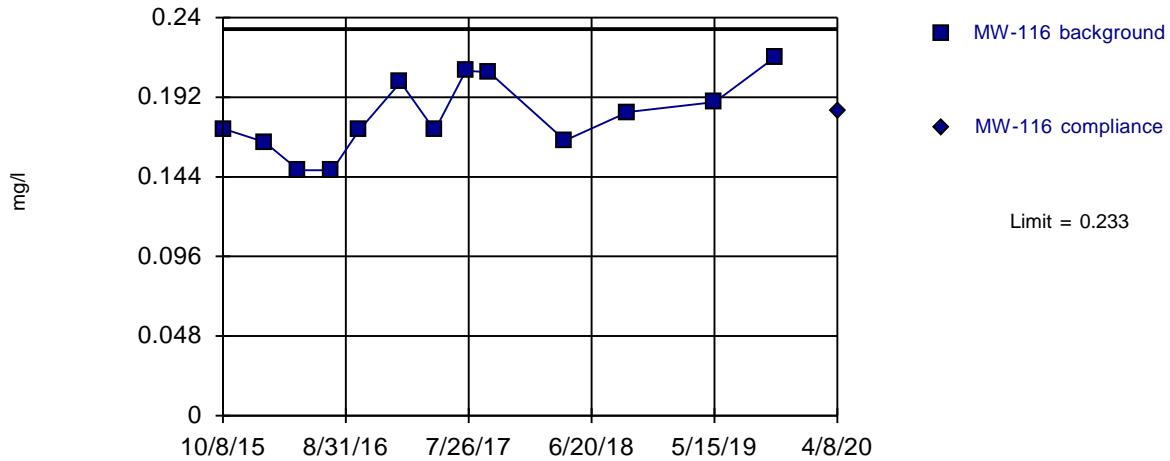
Background Data Summary: Mean=0.2142, Std. Dev.=0.02094, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9554, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



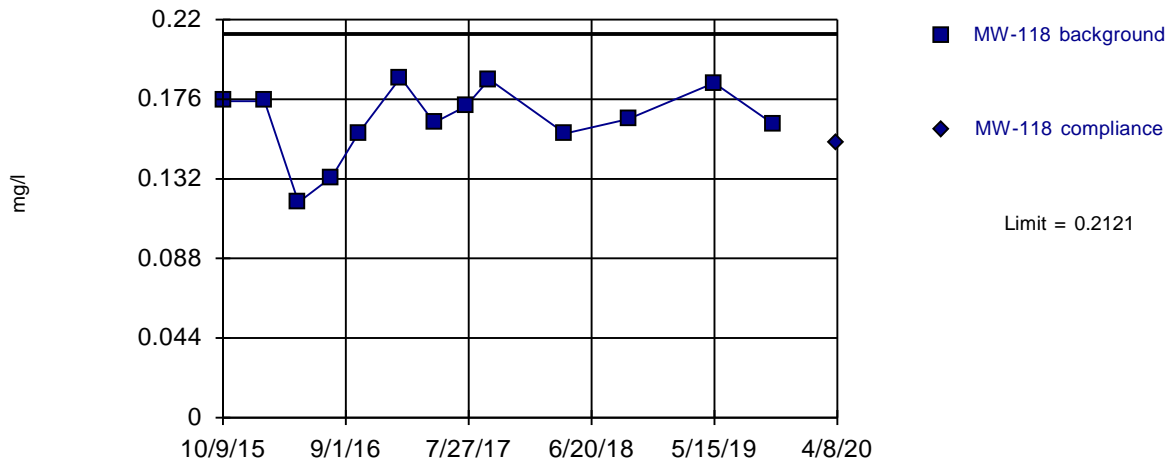
Background Data Summary: Mean=0.1806, Std. Dev.=0.02233, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9394, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



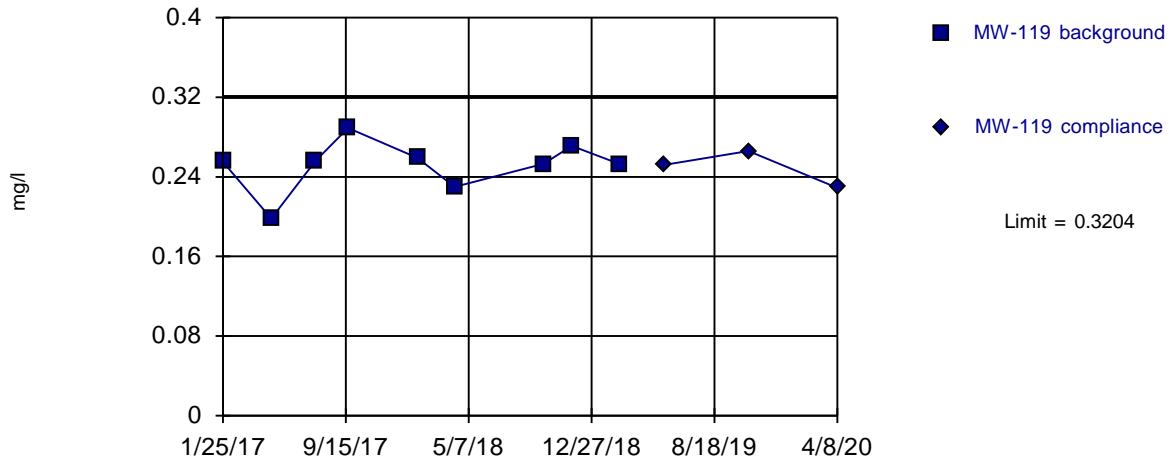
Background Data Summary: Mean=0.1645, Std. Dev.=0.02029, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



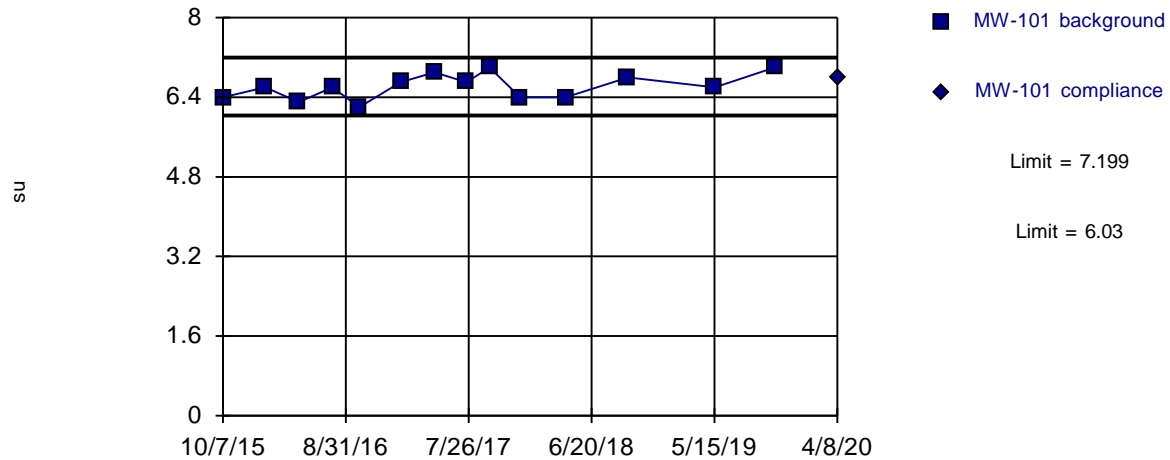
Background Data Summary: Mean=0.2516, Std. Dev.=0.02551, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8977, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



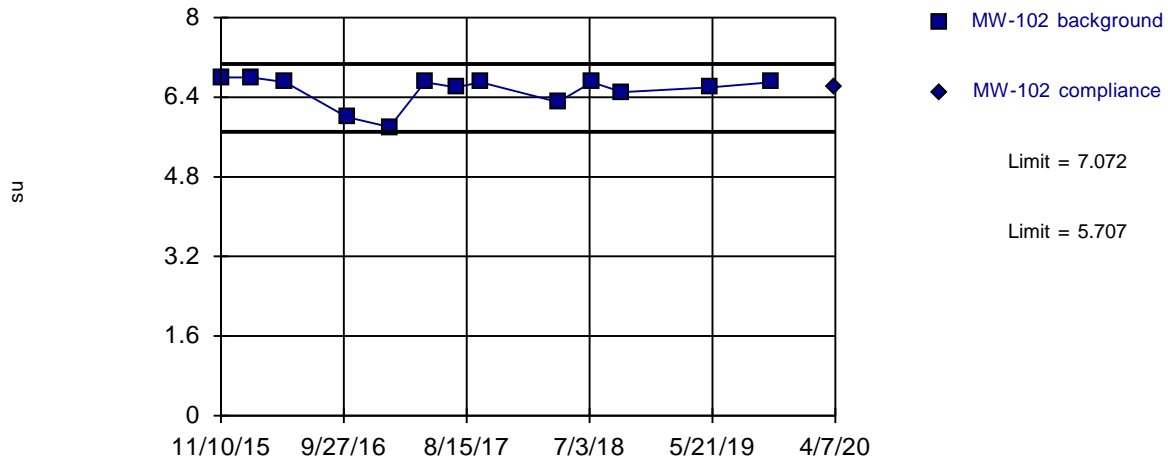
Background Data Summary: Mean=6.614, Std. Dev.=0.2538, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



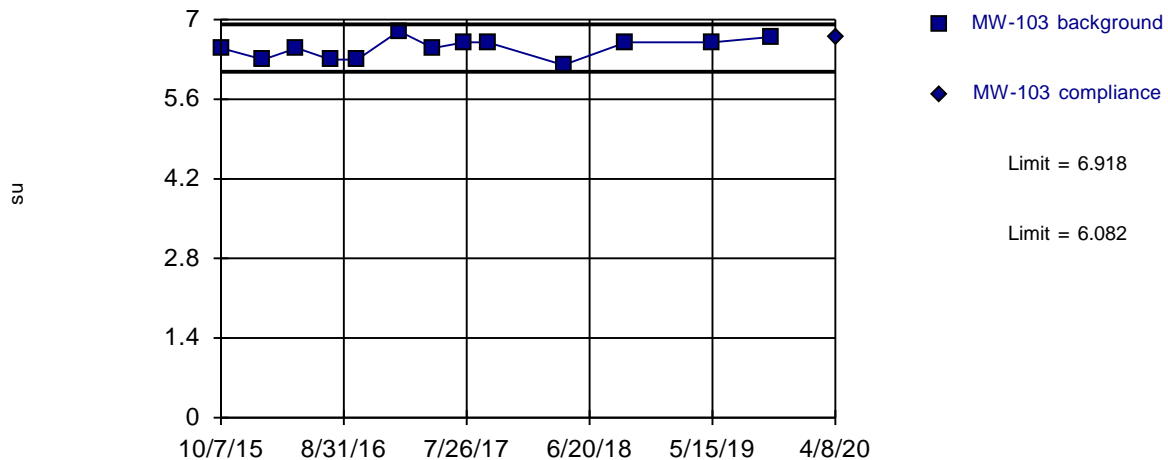
Background Data Summary (based on x^6 transformation): Mean=79846, Std. Dev.=19298, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8197, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



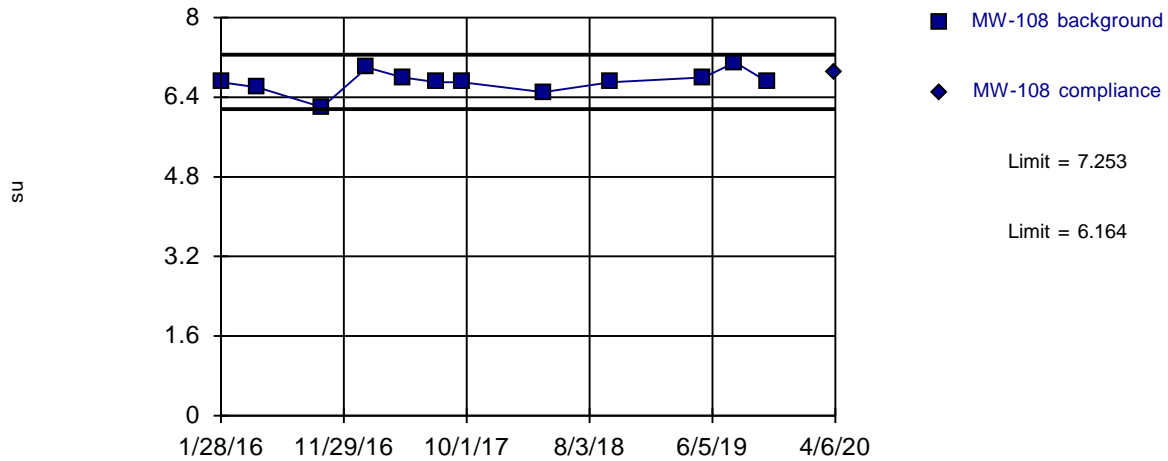
Background Data Summary: Mean=6.5, Std. Dev.=0.178, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.93, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



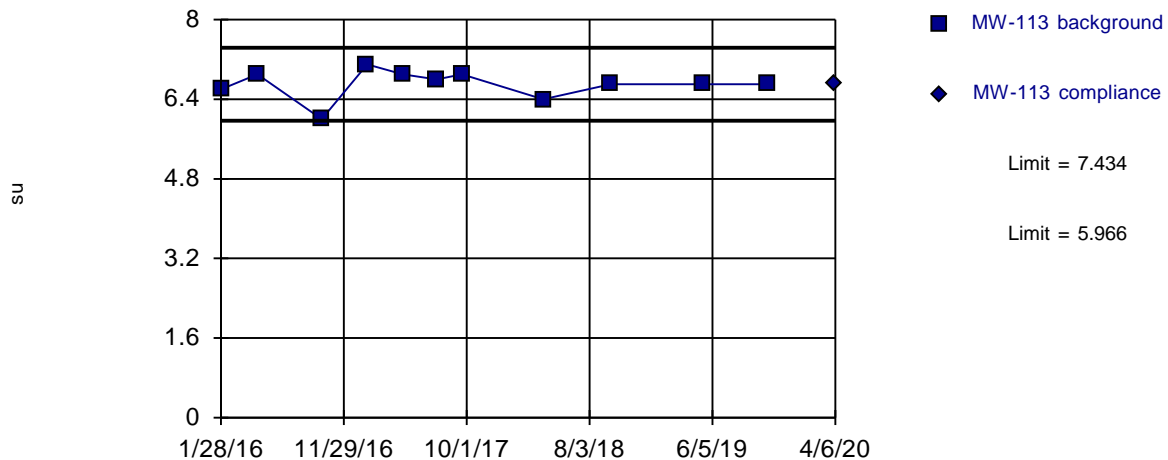
Background Data Summary: Mean=6.708, Std. Dev.=0.2275, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9154, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



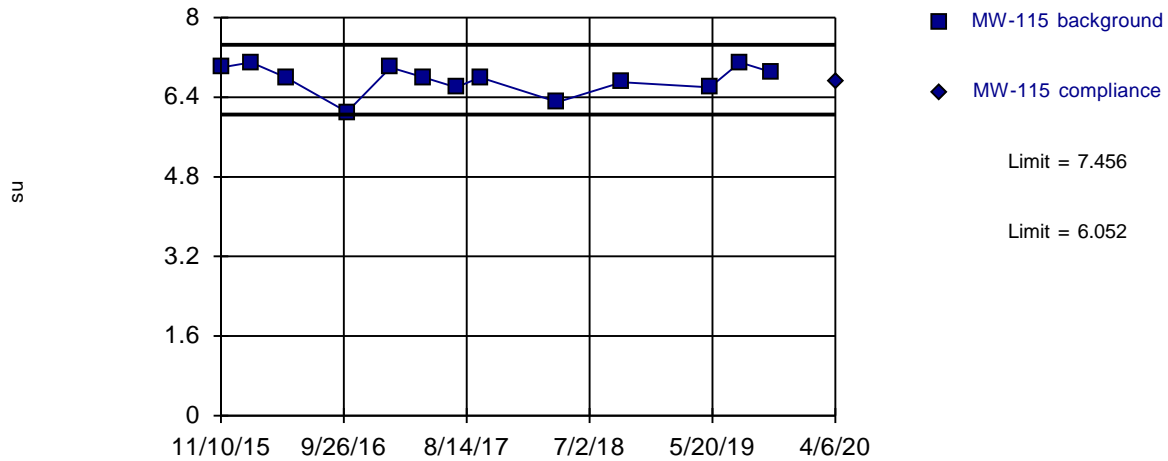
Background Data Summary: Mean=6.7, Std. Dev.=0.2966, n=11. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8904, critical = 0.792. Kappa = 2.474 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



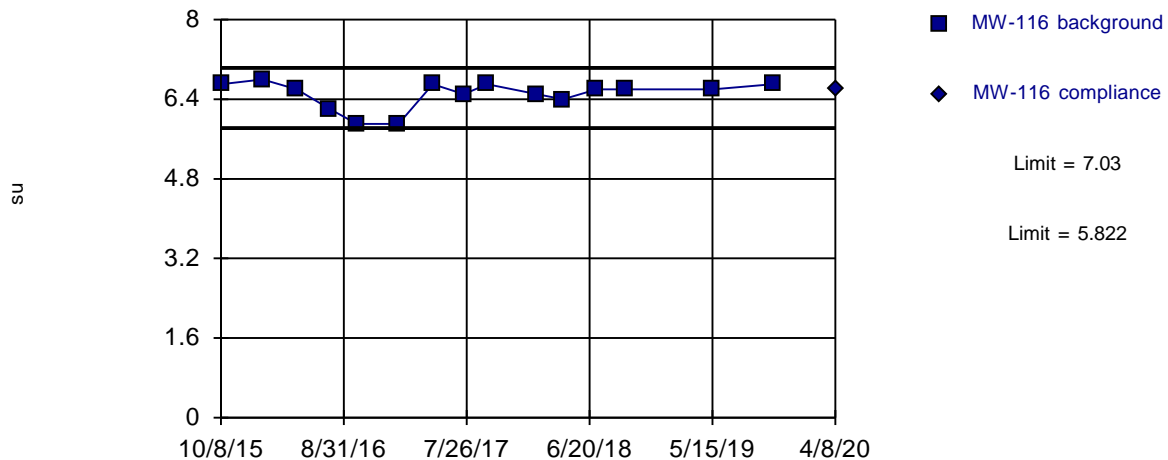
Background Data Summary: Mean=6.754, Std. Dev.=0.2989, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9115, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



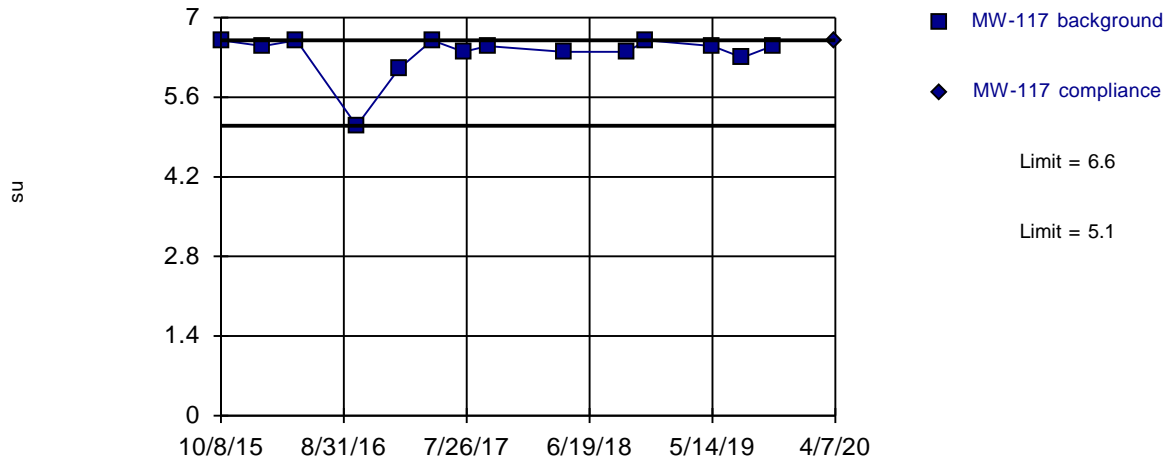
Background Data Summary (based on x^4 transformation): Mean=1796, Std. Dev.=286.4, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8382, critical = 0.835. Kappa = 2.257 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Non-parametric



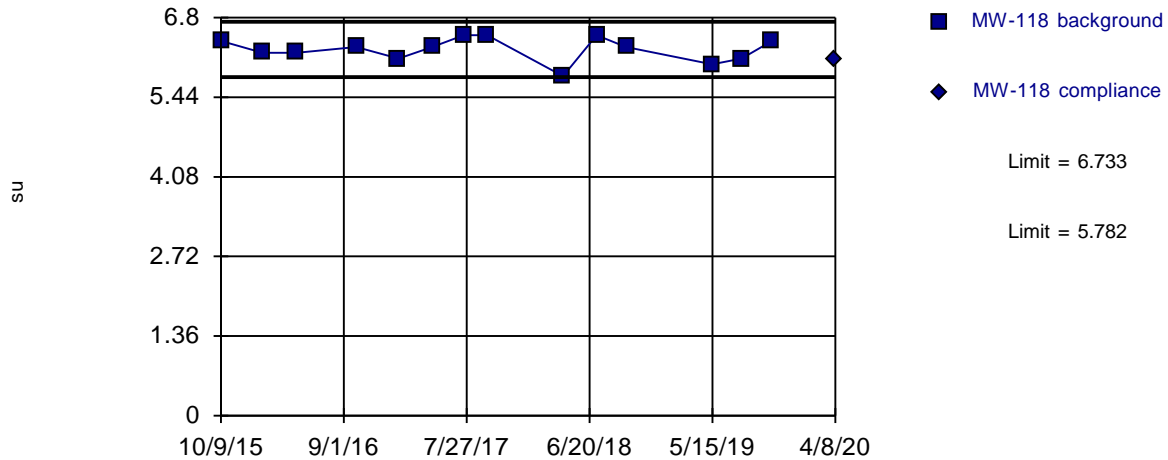
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 14 background values. Well-constituent pair annual alpha = 0.0343. Individual comparison alpha = 0.01722 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



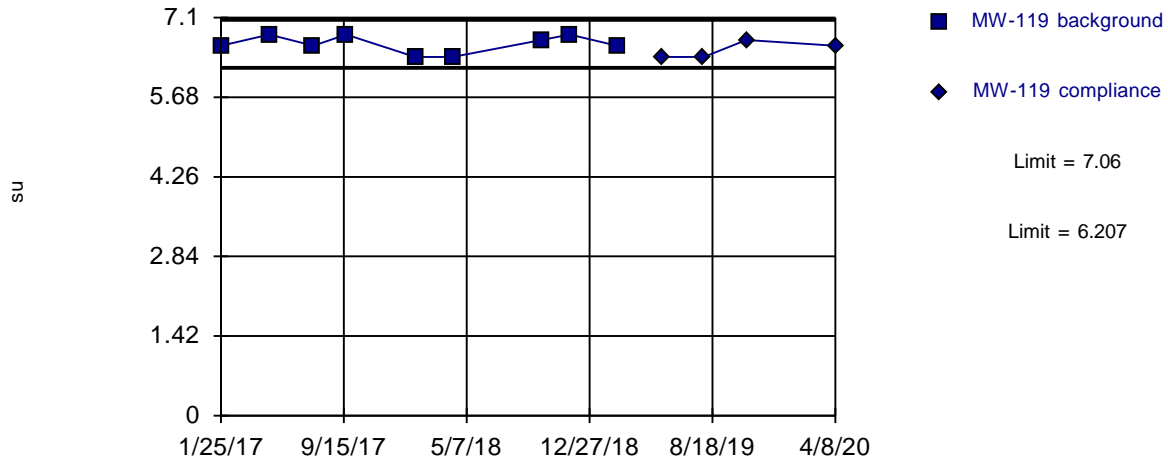
Background Data Summary: Mean=6.257, Std. Dev.=0.2065, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9301, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit
Intrawell Parametric



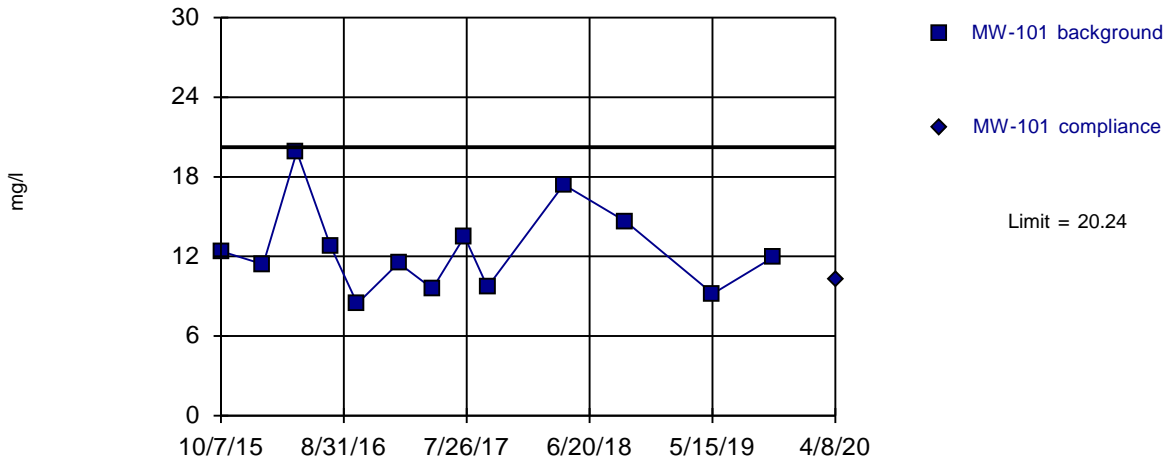
Background Data Summary: Mean=6.633, Std. Dev.=0.1581, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8581, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



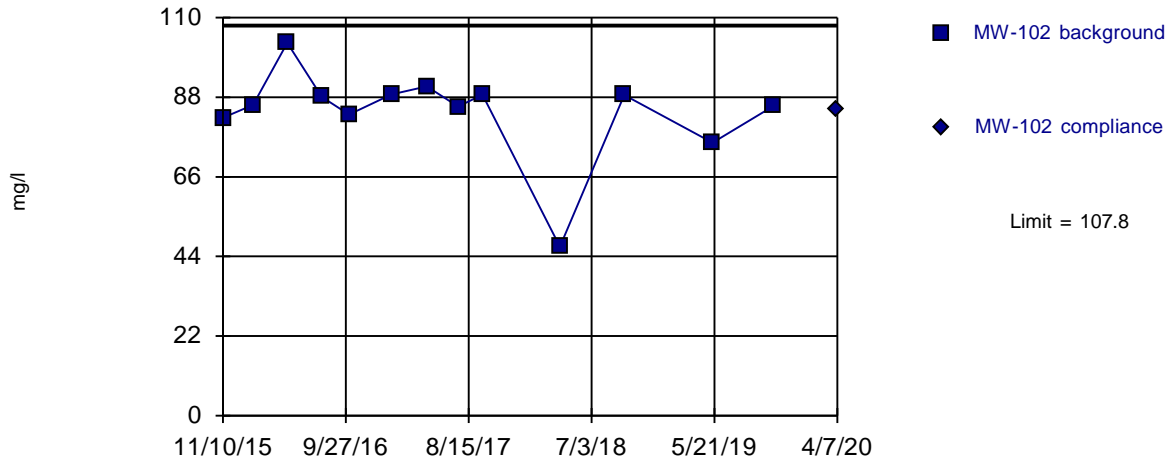
Background Data Summary: Mean=12.48, Std. Dev.=3.303, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9149, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



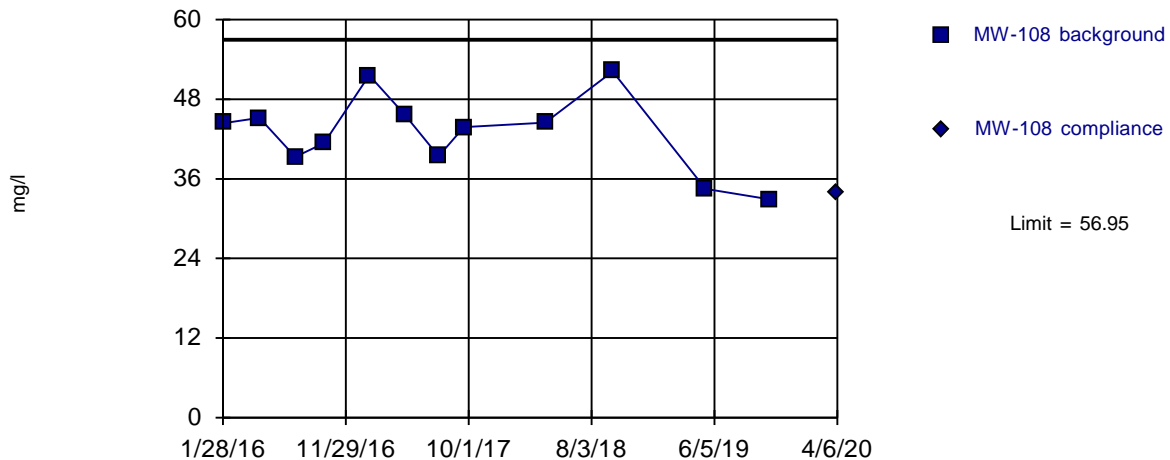
Background Data Summary (based on square transformation): Mean=7217, Std. Dev.=1876, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8224, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



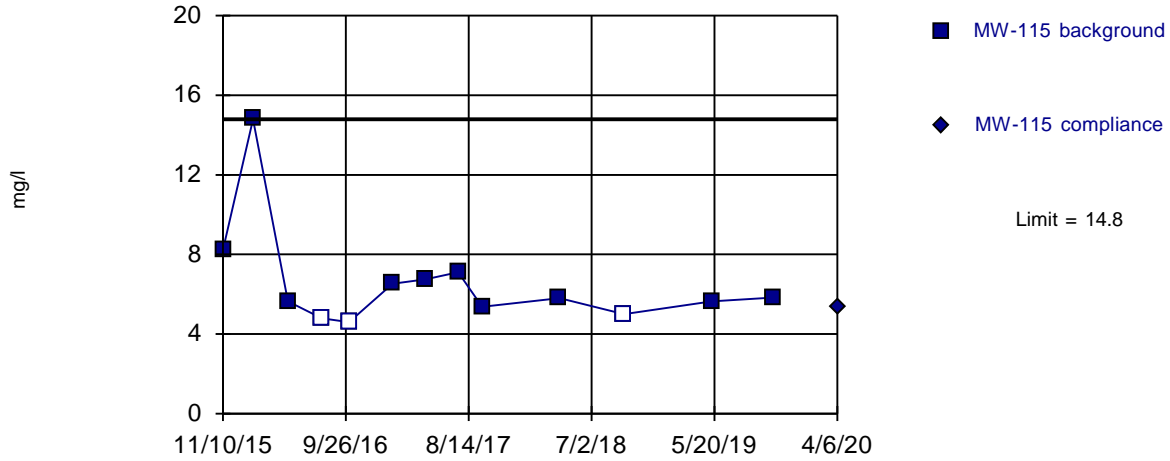
Background Data Summary: Mean=42.91, Std. Dev.=5.869, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9505, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Non-parametric



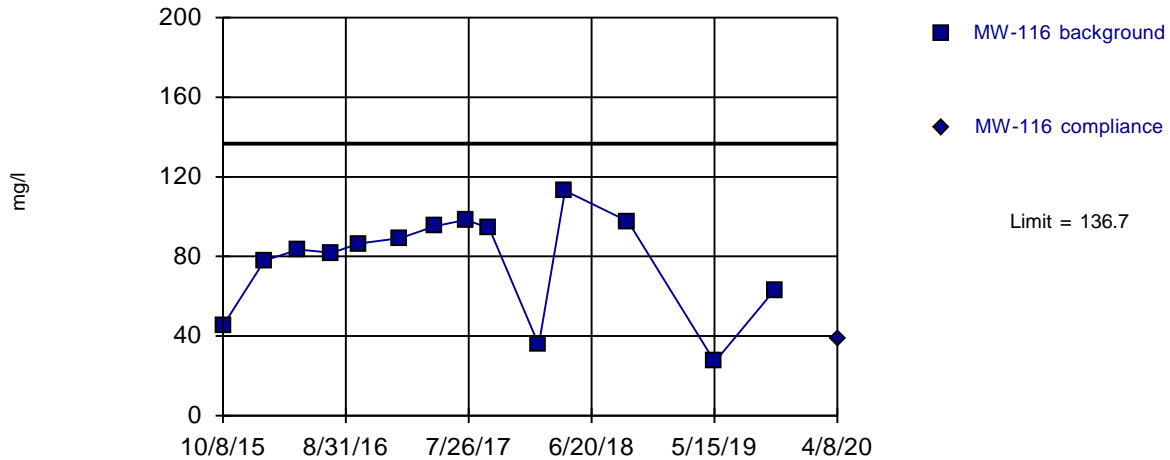
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 13 background values. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Sulfate Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



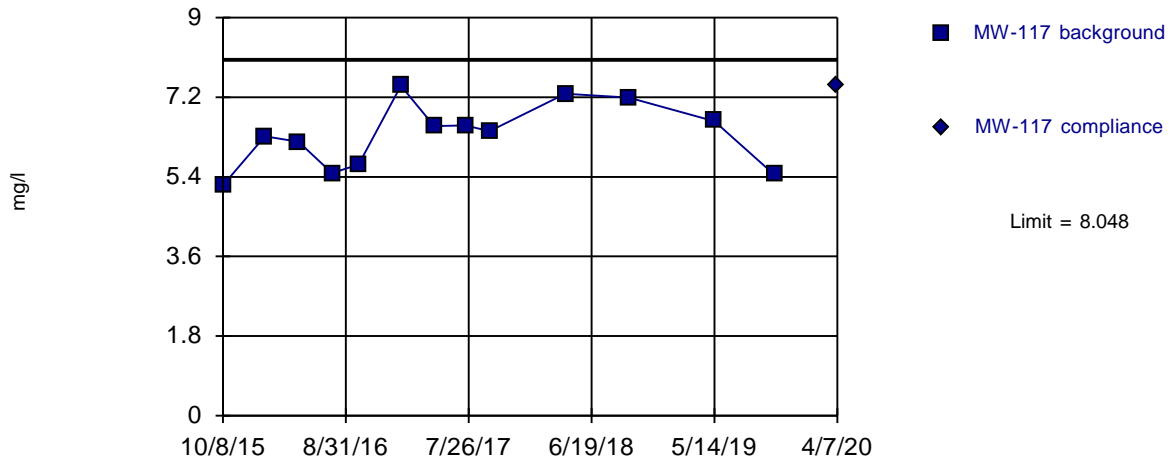
Background Data Summary: Mean=77.71, Std. Dev.=25.62, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8937, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



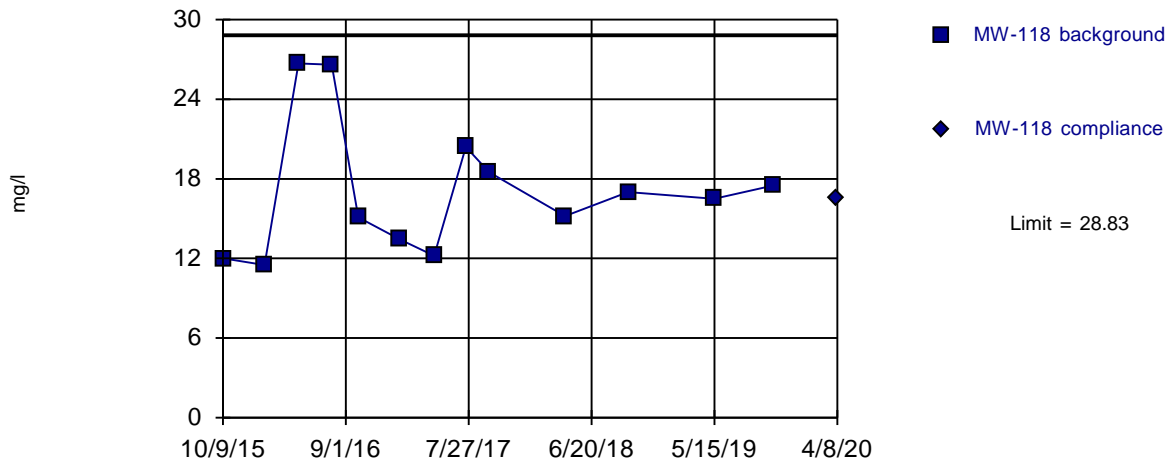
Background Data Summary: Mean=6.343, Std. Dev.=0.7263, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9459, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 4/21/2020 12:23 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



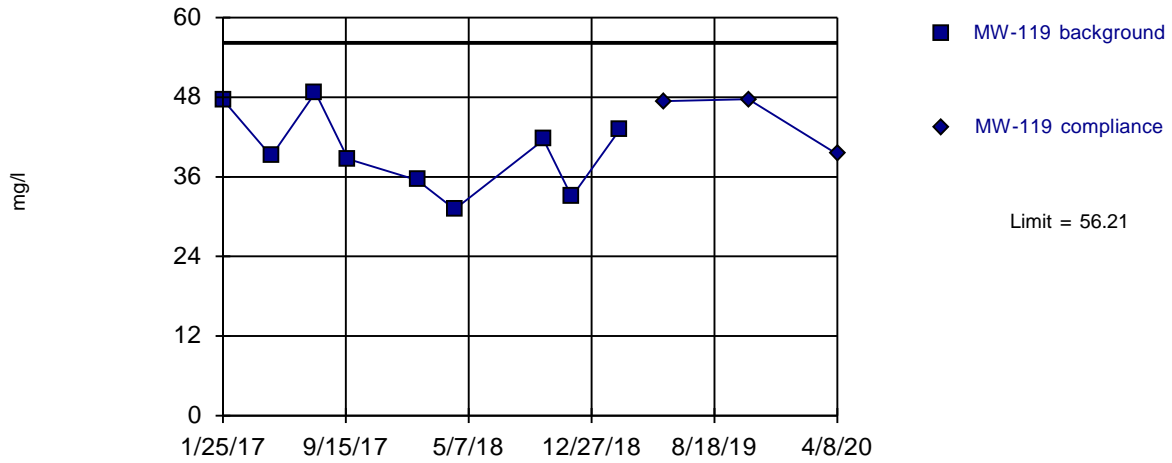
Background Data Summary: Mean=17.12, Std. Dev.=4.987, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8803, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 4/21/2020 12:23 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=39.81, Std. Dev.=6.079, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.961, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

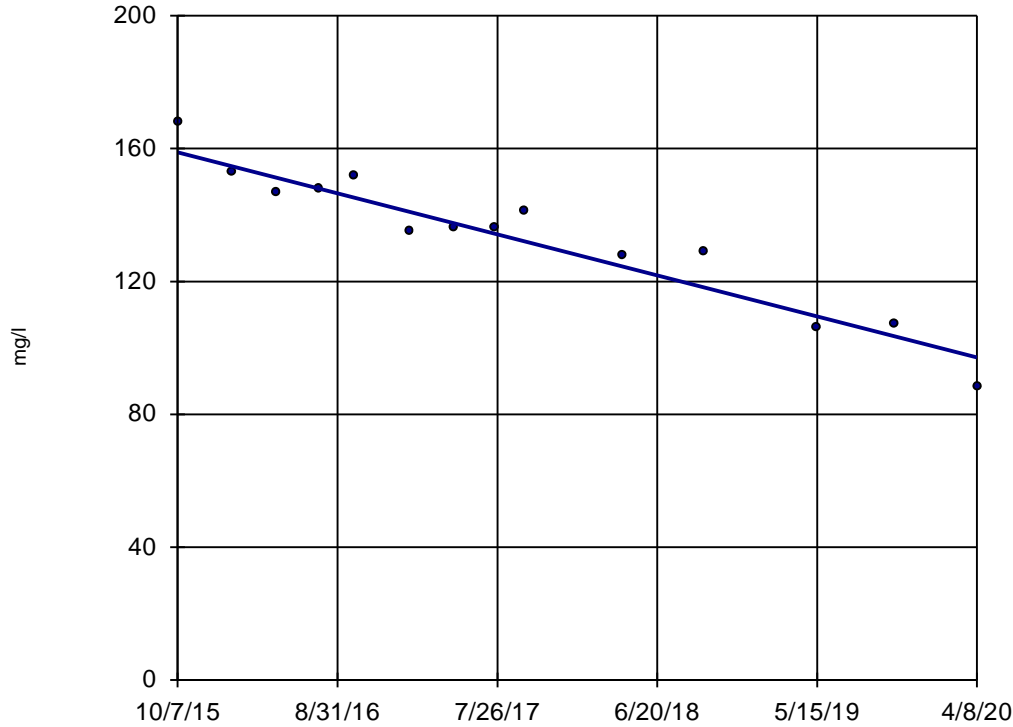
Constituent: Sulfate Analysis Run 4/21/2020 12:23 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Trend Testing, First Half 2020 Monitoring Event

Sen's Slope Estimator

MW-103



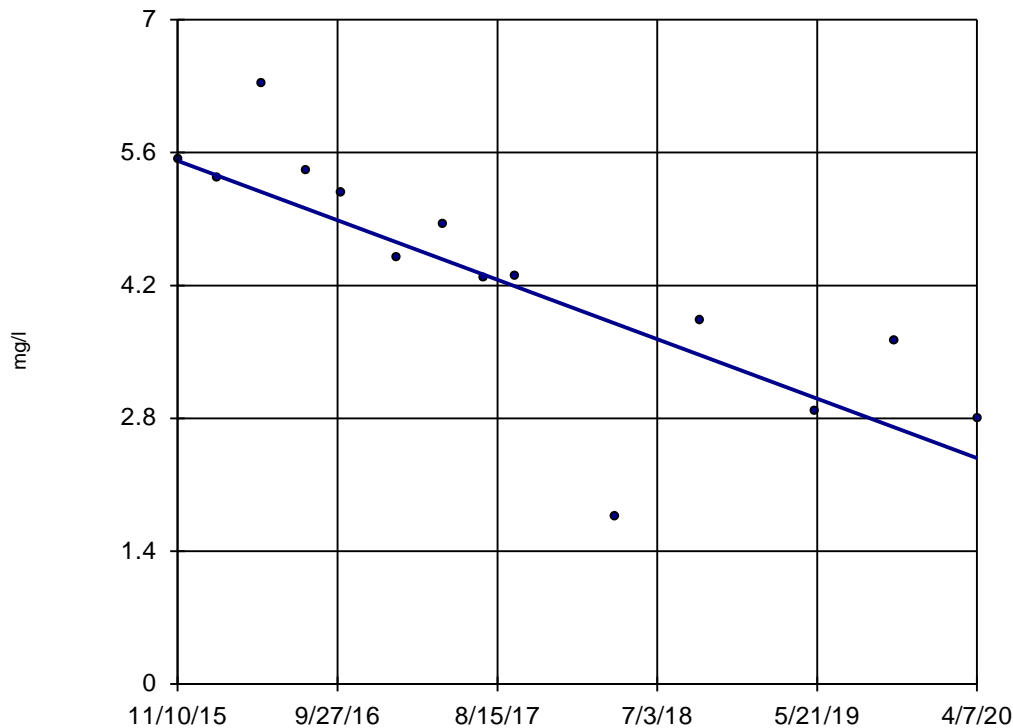
n = 14
 Slope = -13.71 units per year.
 Mann-Kendall statistic = -70 critical = -44
 Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Calcium Analysis Run 4/21/2020 12:26 PM View: 2020-1H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-102



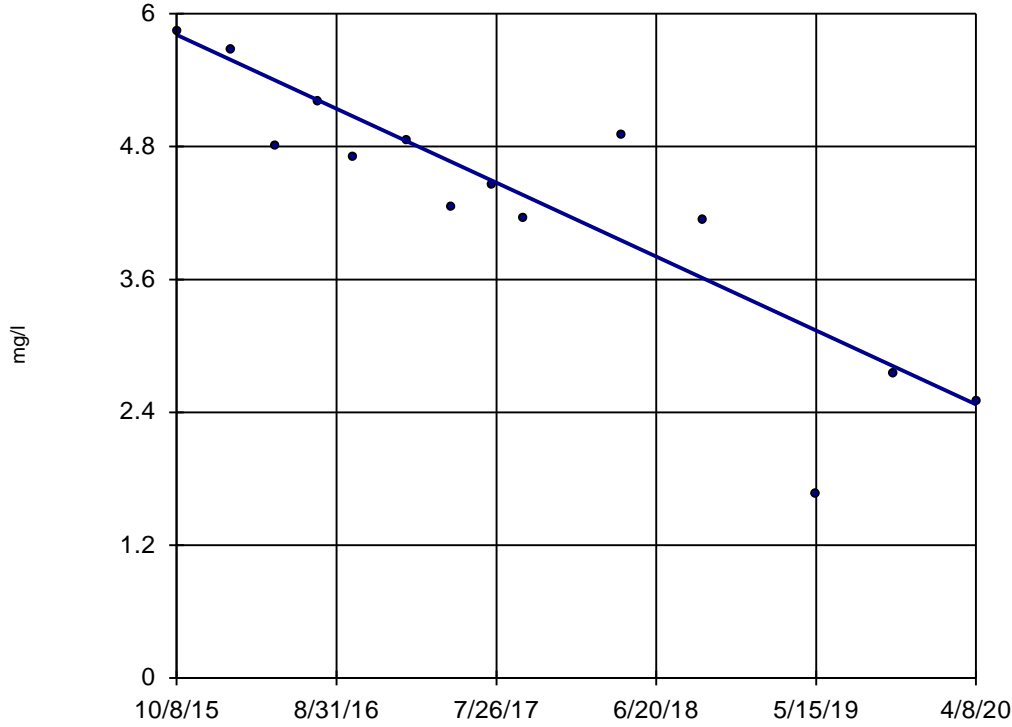
n = 14
 Slope = -0.7105 units per year.
 Mann-Kendall statistic = -71 critical = -44
 Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Chloride Analysis Run 4/21/2020 12:26 PM View: 2020-1H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-116



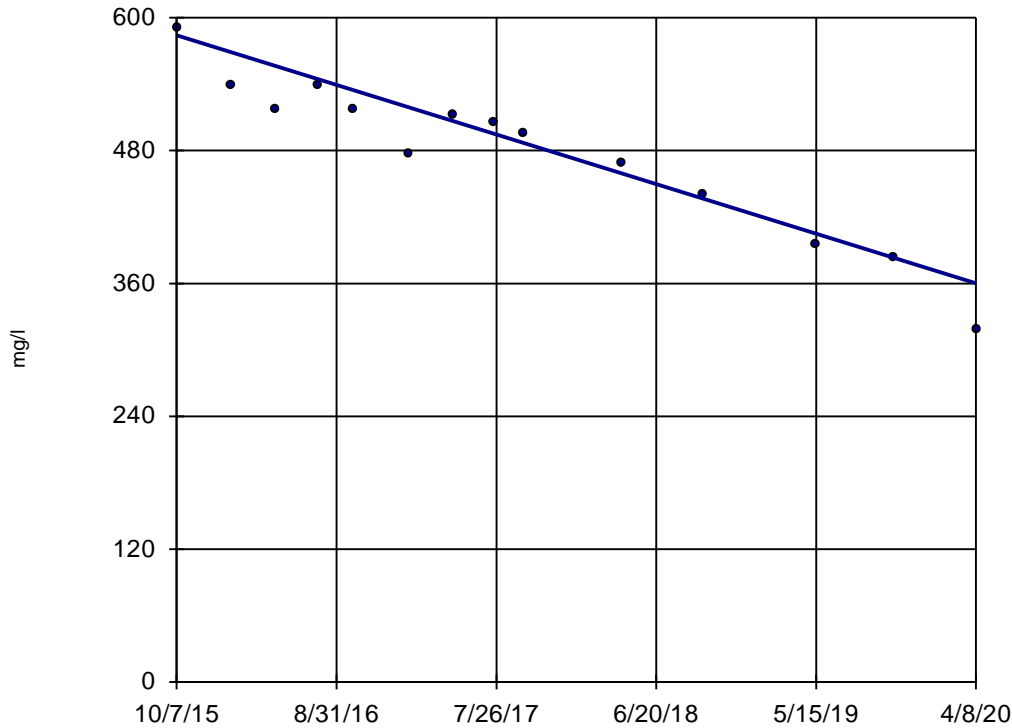
n = 14
Slope = -0.7415 units per year.
Mann-Kendall statistic = -67 critical = -44
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Chloride Analysis Run 4/21/2020 12:26 PM View: 2020-1H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-103



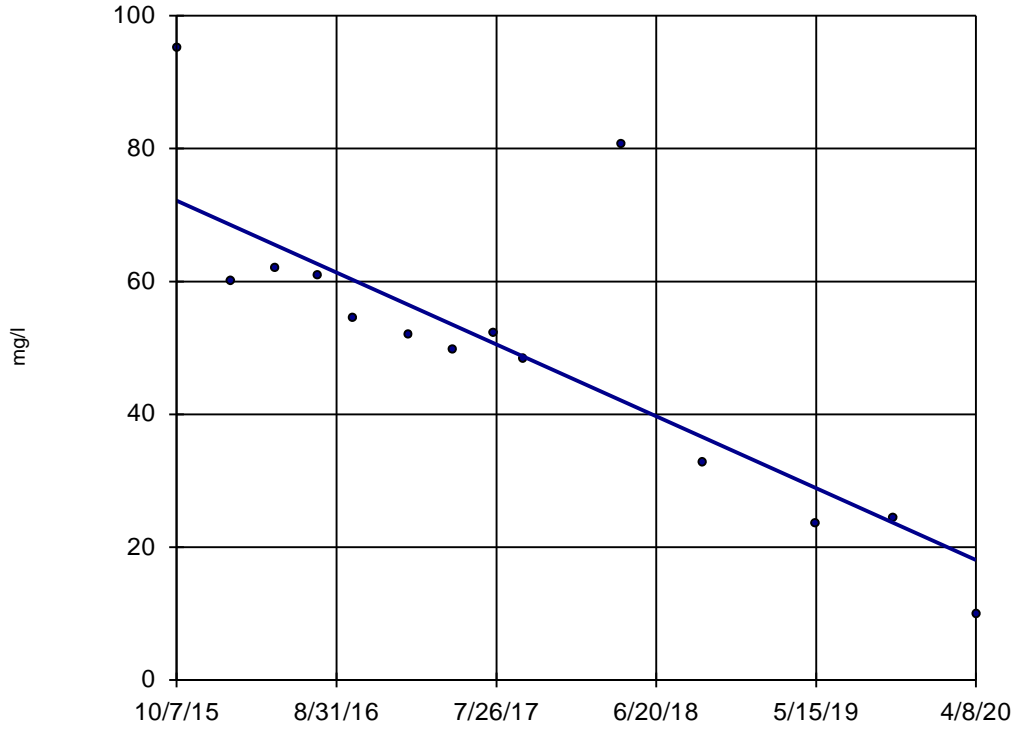
n = 14
Slope = -49.69 units per year.
Mann-Kendall statistic = -80 critical = -44
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:26 PM View: 2020-1H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-103



n = 14
Slope = -12
units per year.
Mann-Kendall
statistic = -65
critical = -44
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

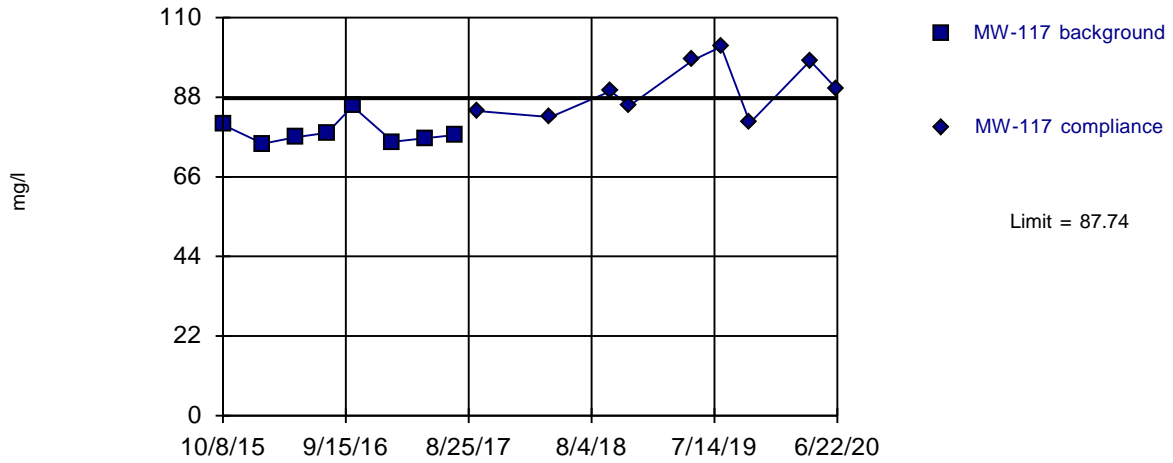
Constituent: Sulfate Analysis Run 4/21/2020 12:26 PM View: 2020-1H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Prediction Limits, First Half 2020 Verification Sampling Event

Exceeds Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=78.28, Std. Dev.=3.33, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8288, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

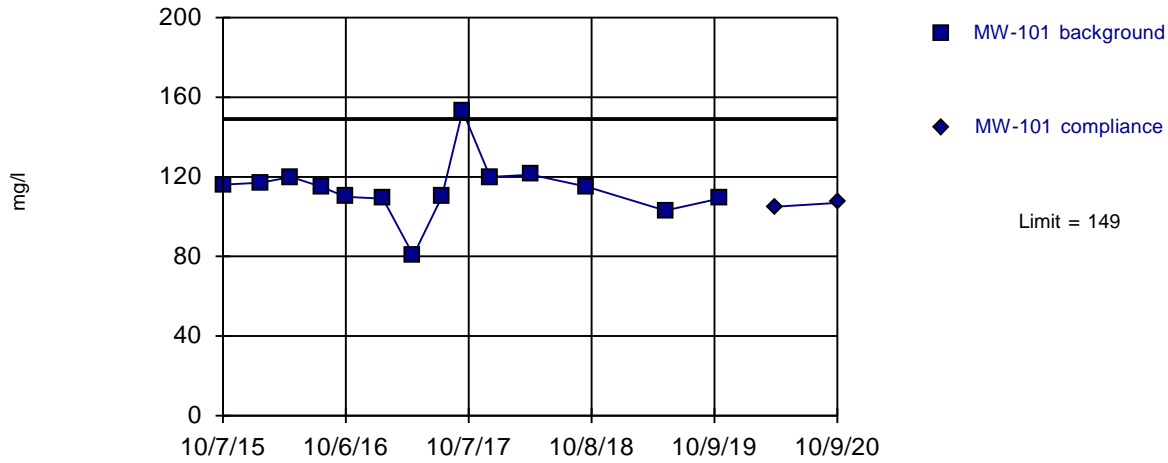
Constituent: Calcium Analysis Run 11/9/2020 4:38 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Prediction Limits, Second Half 2020 Monitoring Event

Within Limit

Prediction Limit Intrawell Parametric



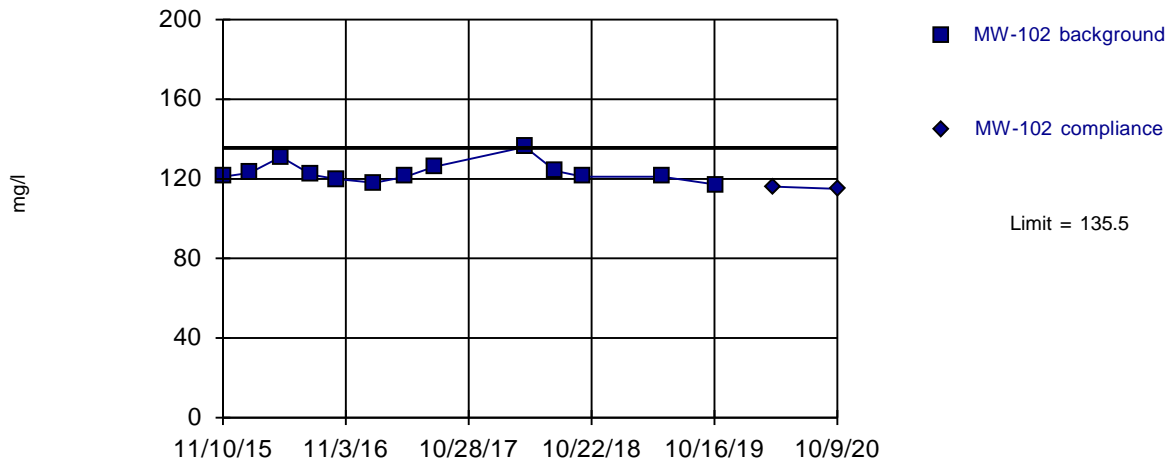
Background Data Summary: Mean=114.2, Std. Dev.=15.14, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8396, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



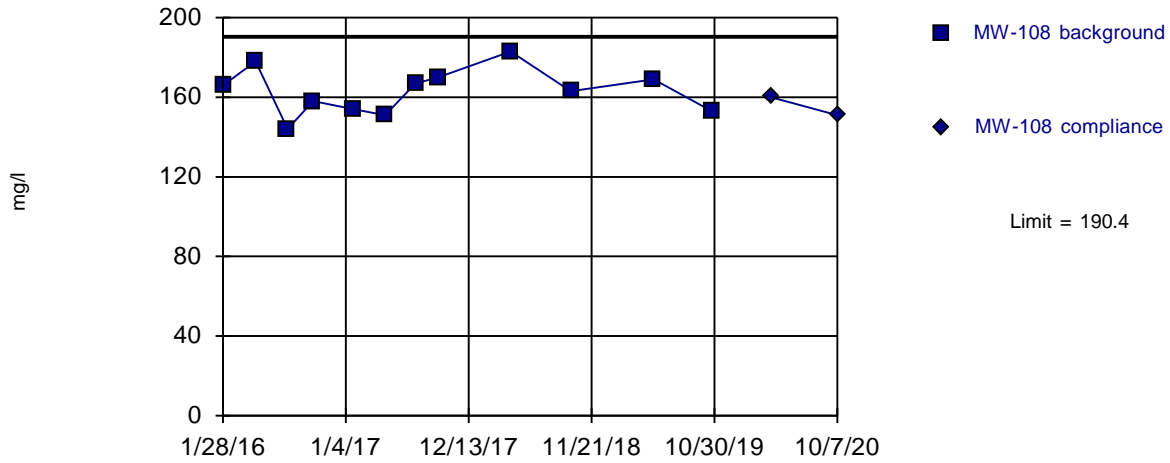
Background Data Summary: Mean=123.2, Std. Dev.=5.242, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8497, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



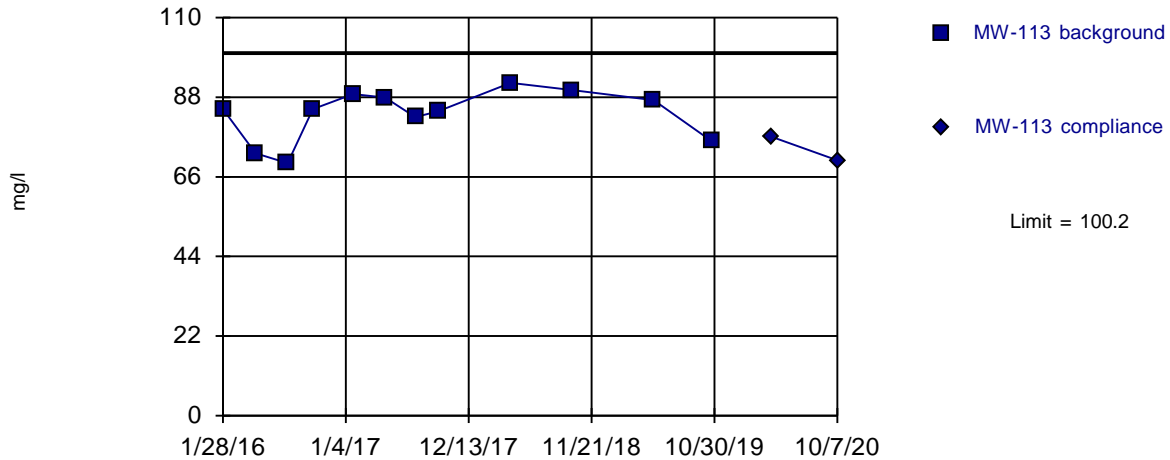
Background Data Summary: Mean=163, Std. Dev.=11.47, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



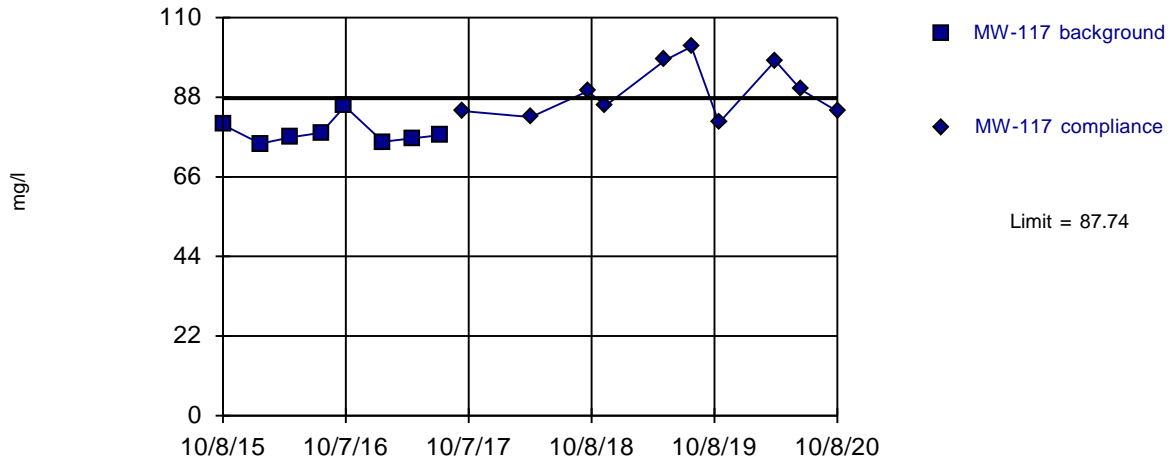
Background Data Summary: Mean=83.35, Std. Dev.=7.053, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8981, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



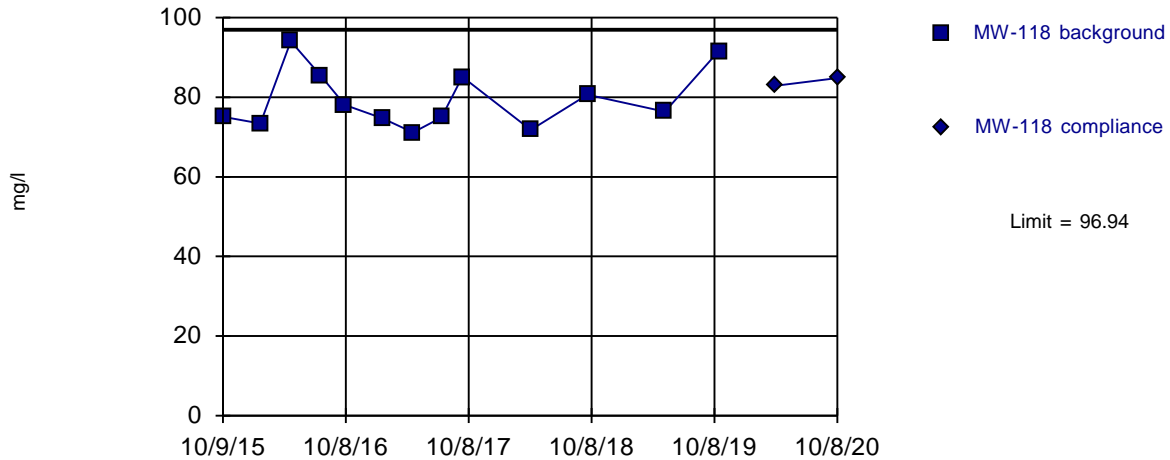
Background Data Summary: Mean=78.28, Std. Dev.=3.33, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8288, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



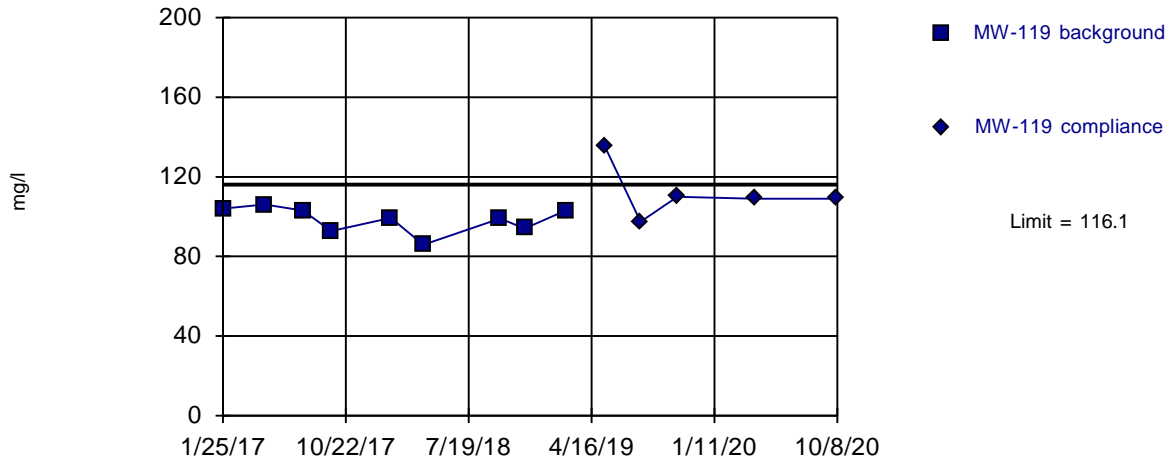
Background Data Summary: Mean=79.41, Std. Dev.=7.467, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8875, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



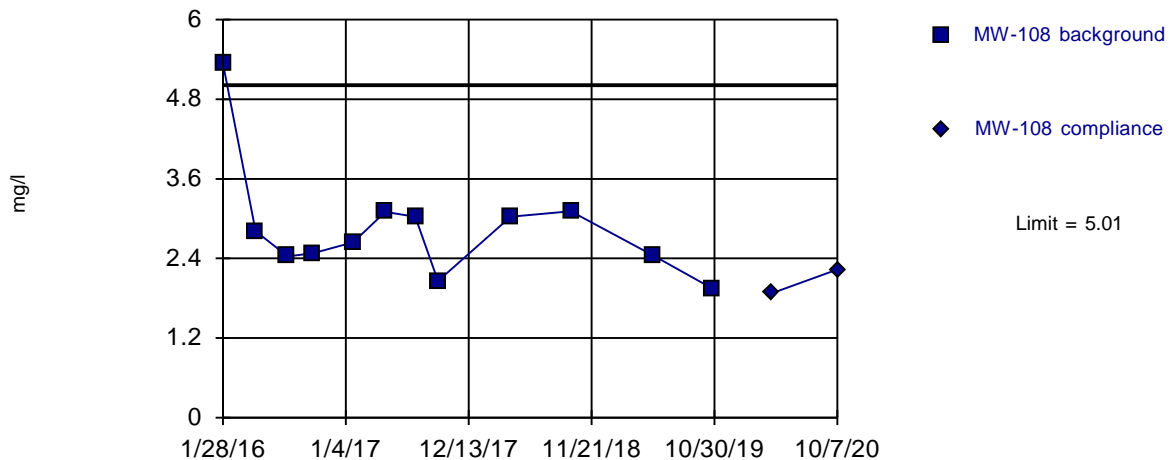
Background Data Summary: Mean=98.54, Std. Dev.=6.524, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9156, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



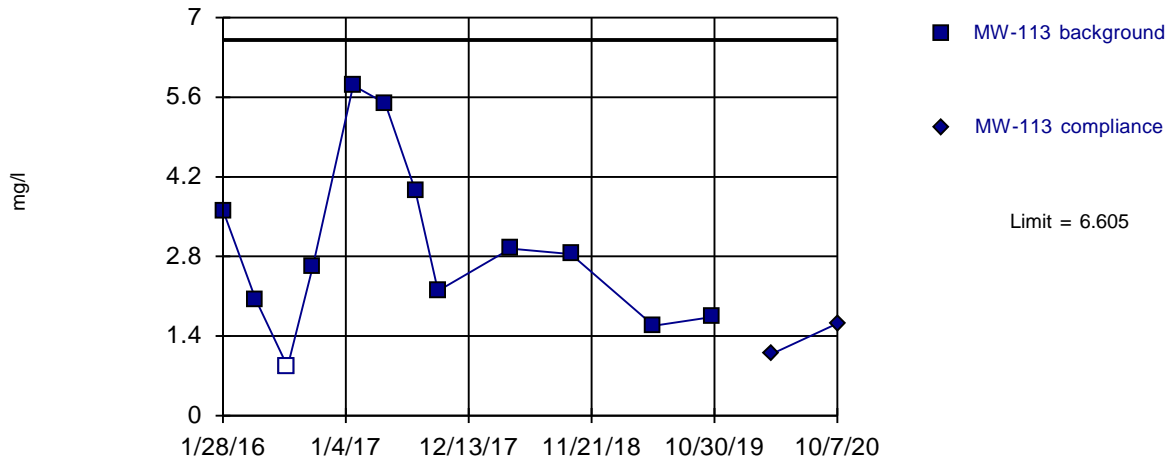
Background Data Summary (based on square root transformation): Mean=1.679, Std. Dev.=0.2339, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8197, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



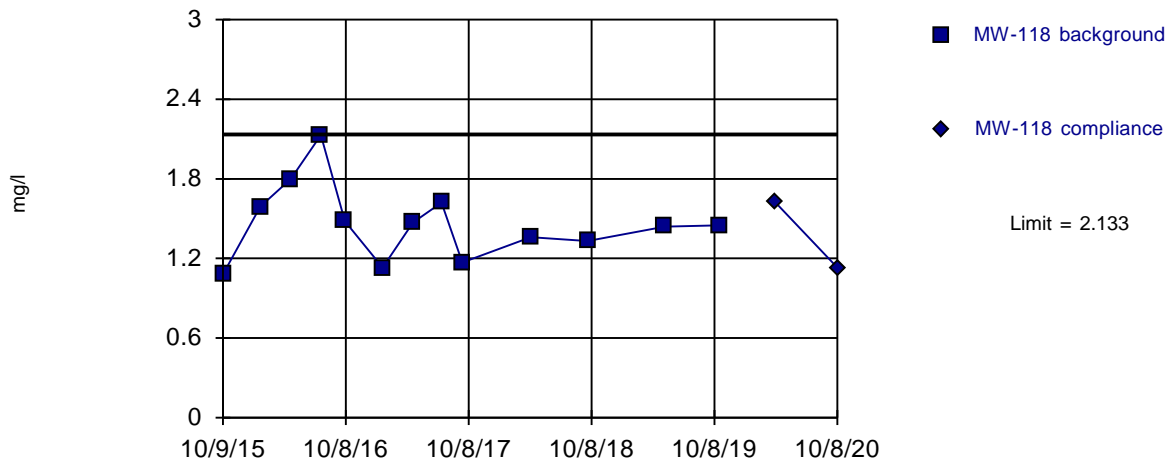
Background Data Summary: Mean=2.974, Std. Dev.=1.518, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9319, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



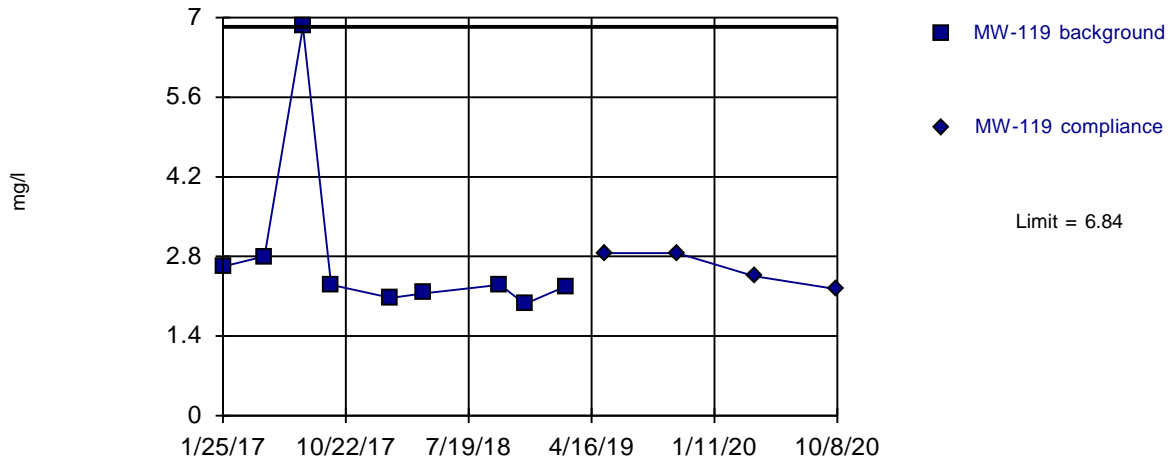
Background Data Summary: Mean=1.465, Std. Dev.=0.2846, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9348, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Chloride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Non-parametric



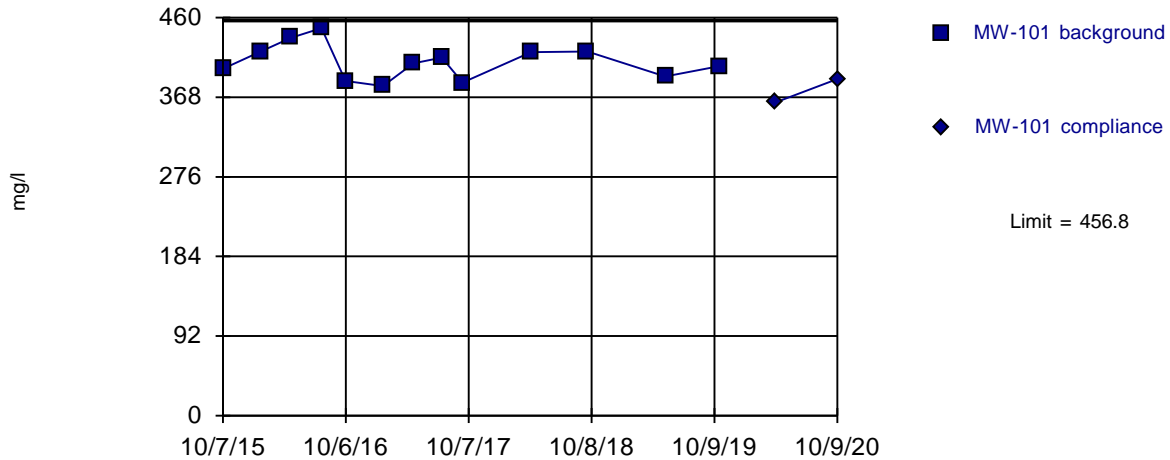
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 9 background values. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



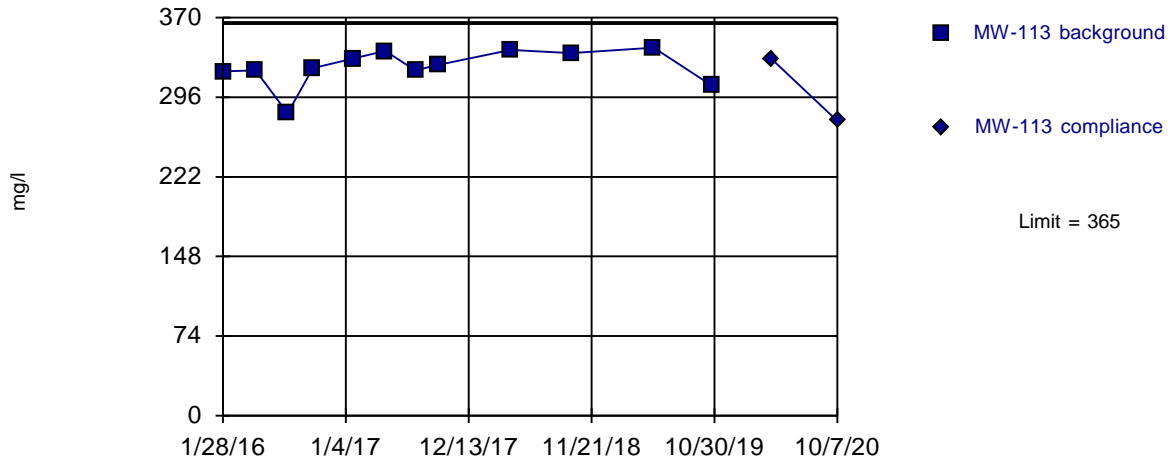
Background Data Summary: Mean=409.1, Std. Dev.=20.34, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9582, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



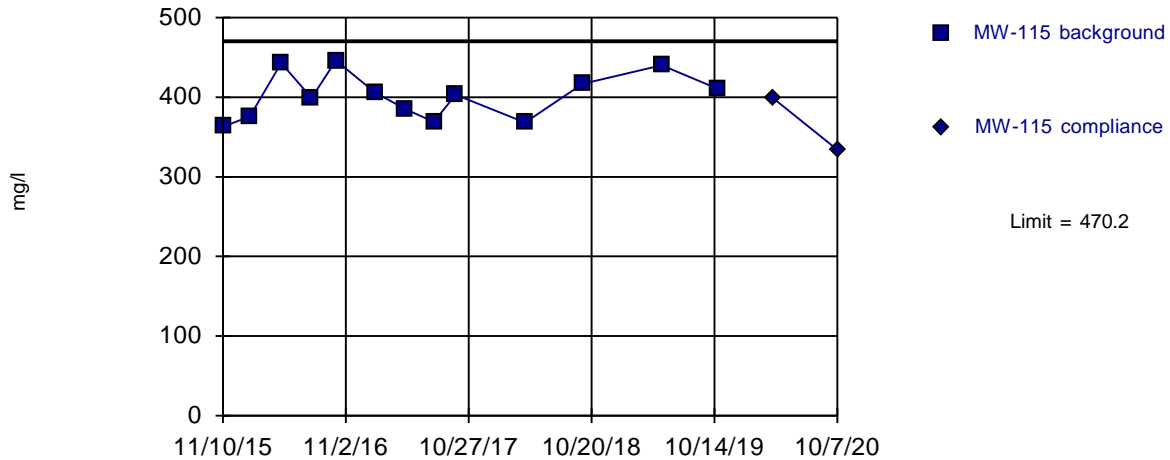
Background Data Summary: Mean=324.1, Std. Dev.=17.1, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8564, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



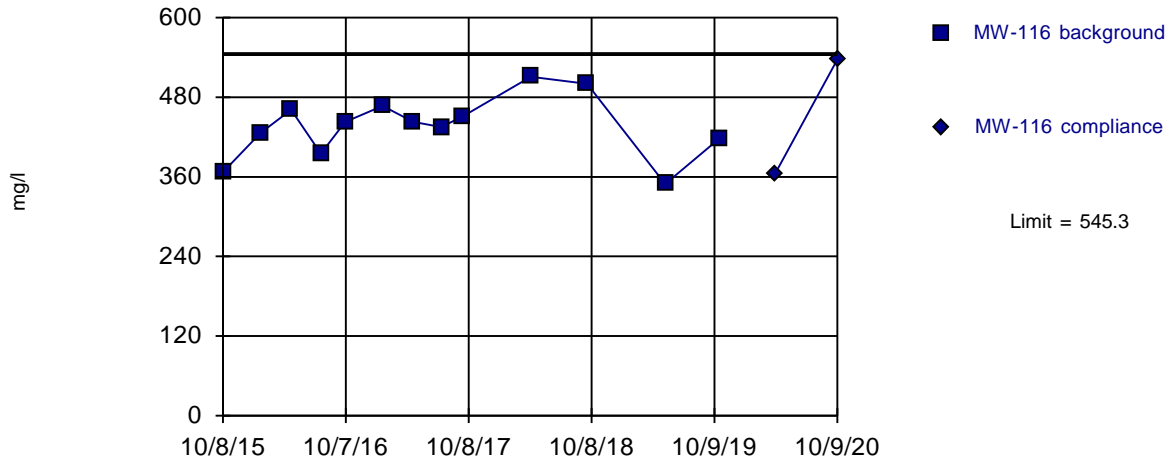
Background Data Summary: Mean=402, Std. Dev.=29.05, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9251, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



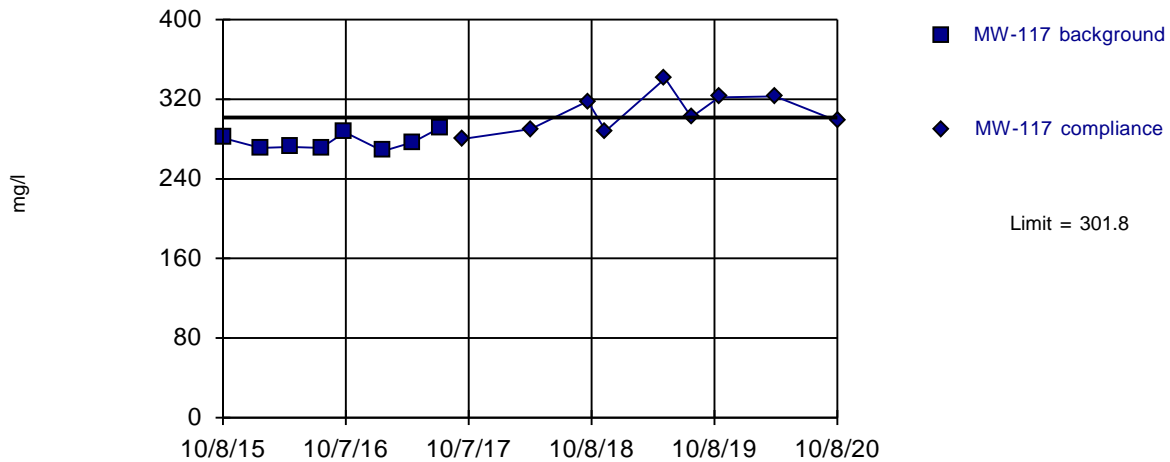
Background Data Summary: Mean=435.8, Std. Dev.=46.64, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9697, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



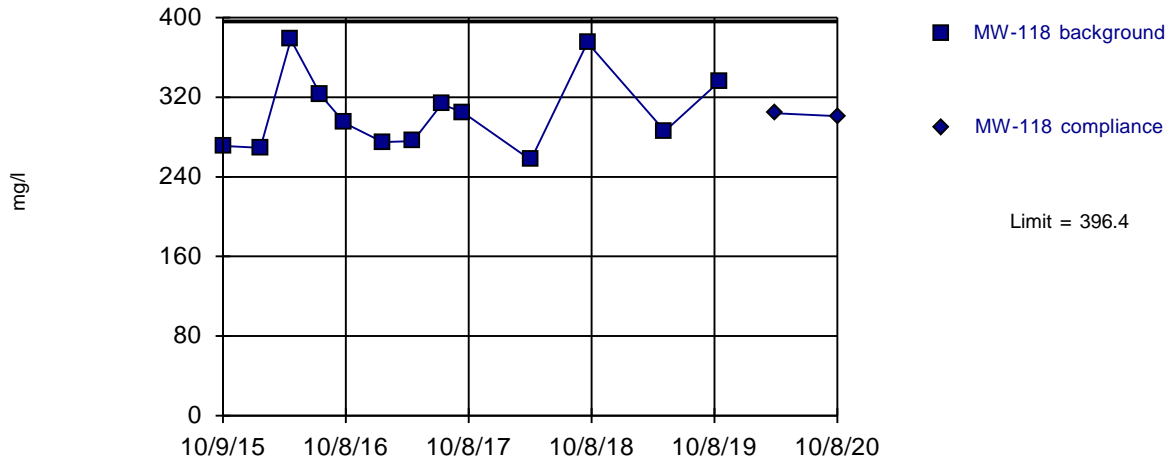
Background Data Summary: Mean=277.4, Std. Dev.=8.601, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9018, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



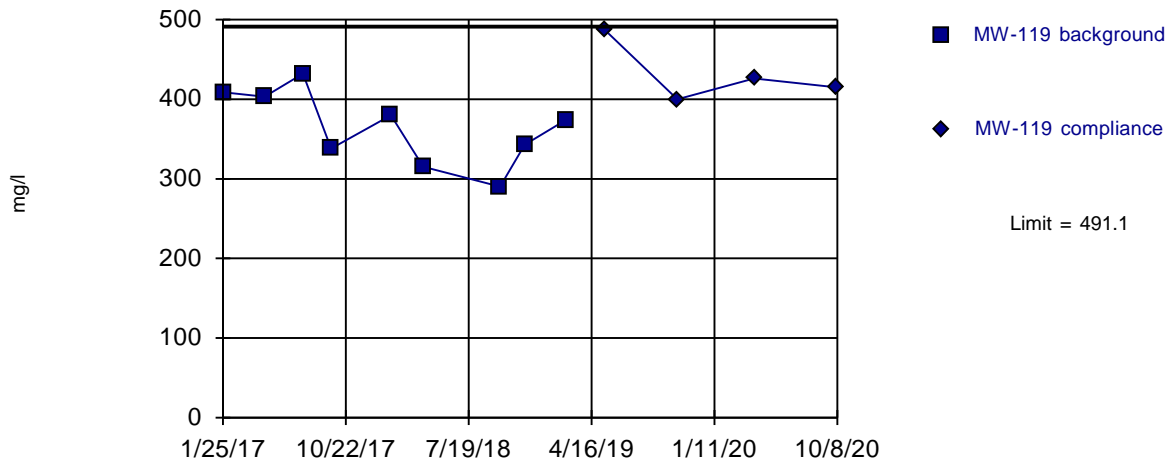
Background Data Summary: Mean=304.3, Std. Dev.=39.22, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8967, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



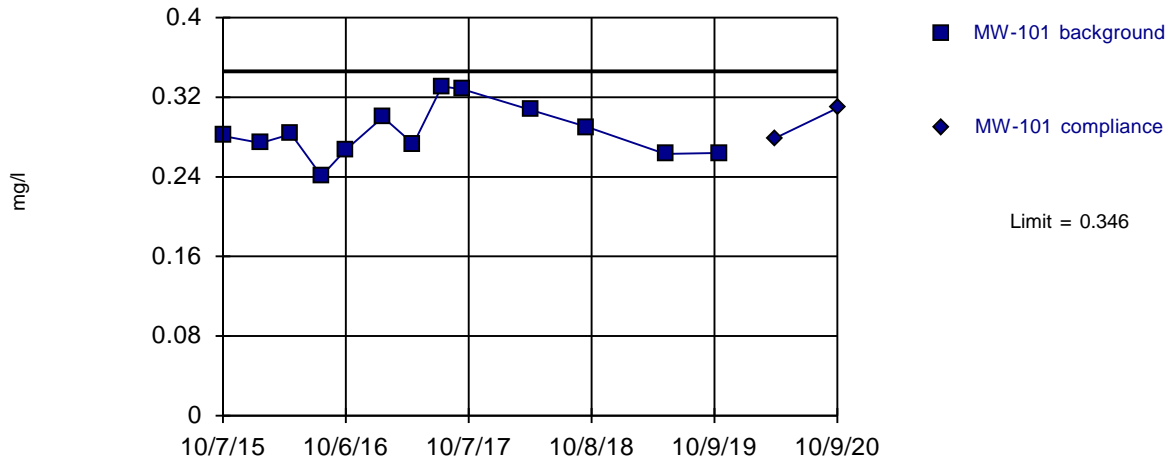
Background Data Summary: Mean=364.9, Std. Dev.=46.79, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9717, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



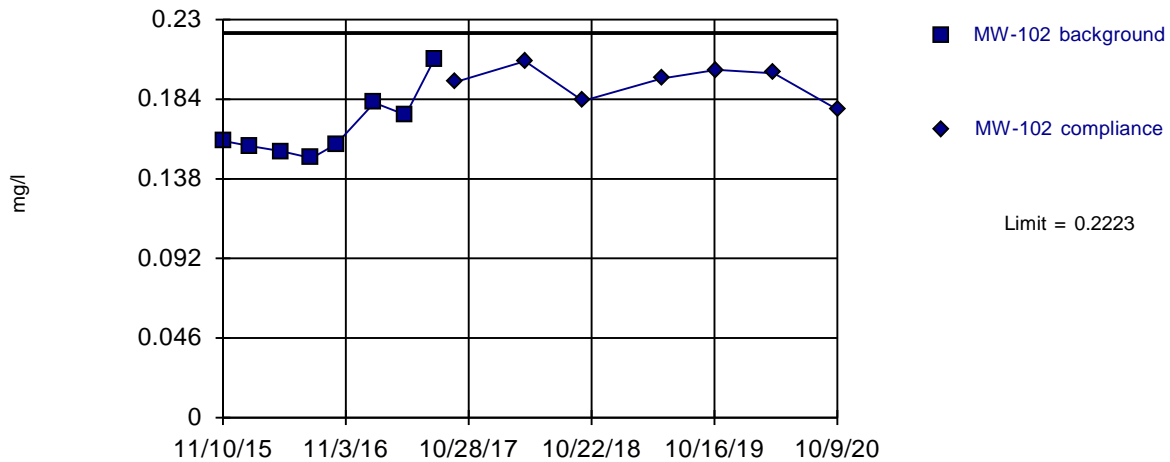
Background Data Summary: Mean=0.2848, Std. Dev.=0.02609, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9524, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



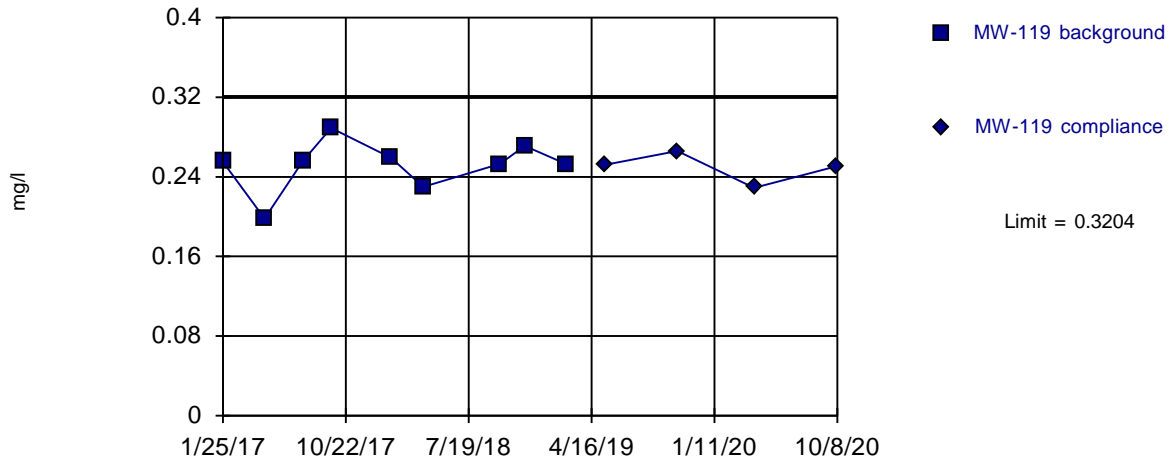
Background Data Summary: Mean=0.1679, Std. Dev.=0.01916, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8449, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



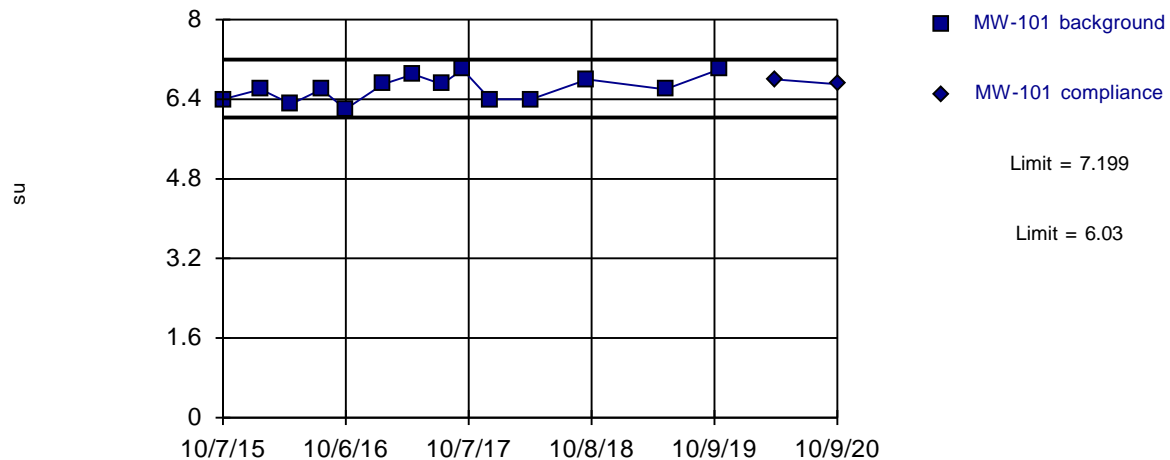
Background Data Summary: Mean=0.2516, Std. Dev.=0.02551, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8977, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Fluoride Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit
Intrawell Parametric



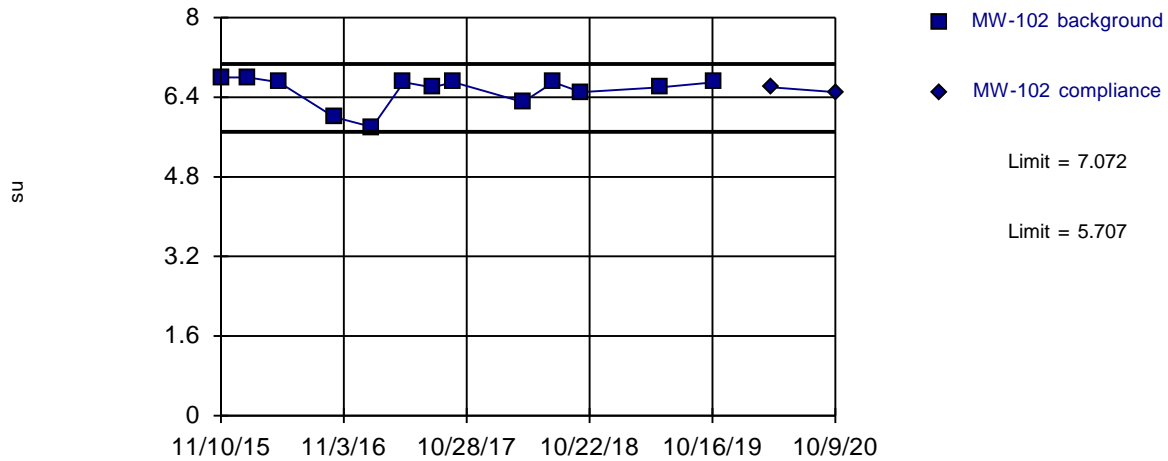
Background Data Summary: Mean=6.614, Std. Dev.=0.2538, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



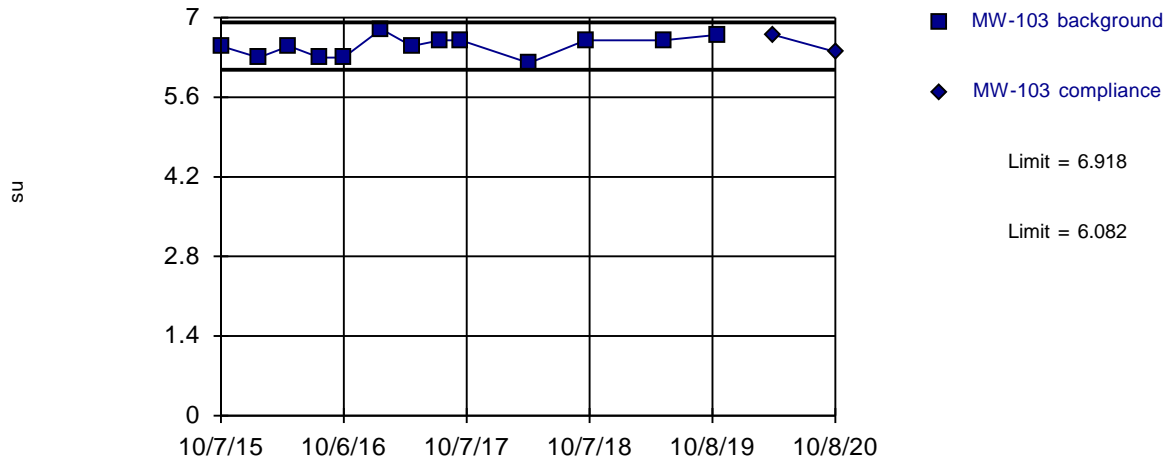
Background Data Summary (based on x^6 transformation): Mean=79846, Std. Dev.=19298, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8197, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:24 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=6.5, Std. Dev.=0.178, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.93, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

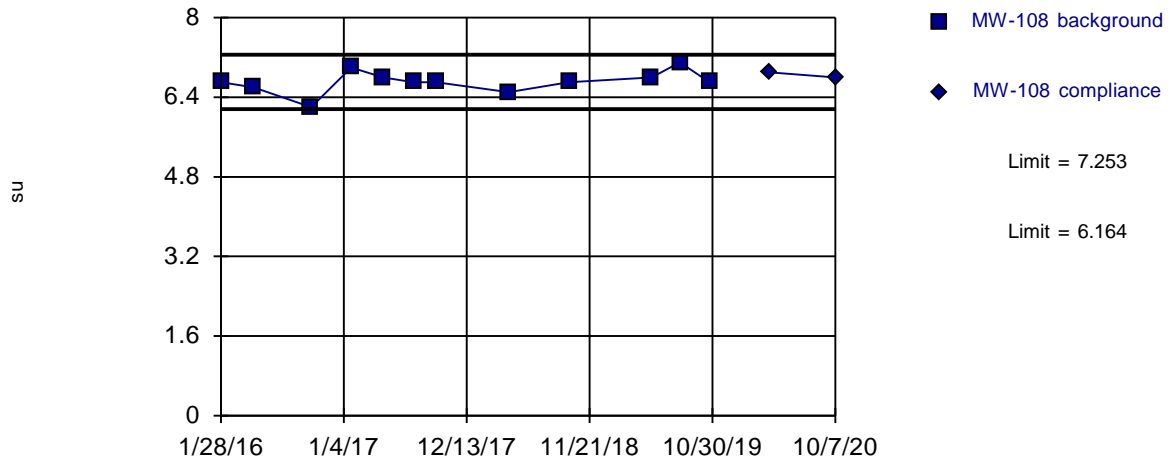
Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.708, Std. Dev.=0.2275, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9154, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

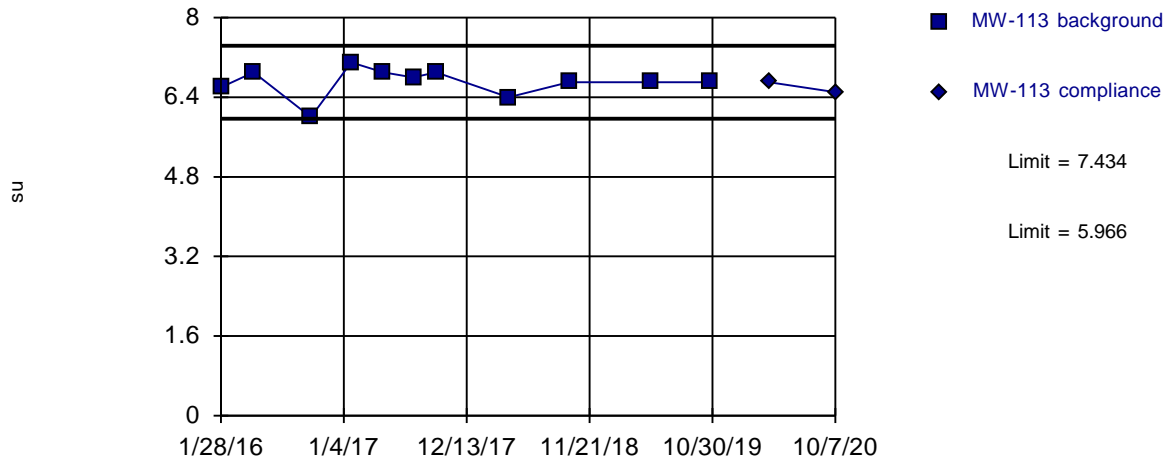
Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit

Intrawell Parametric



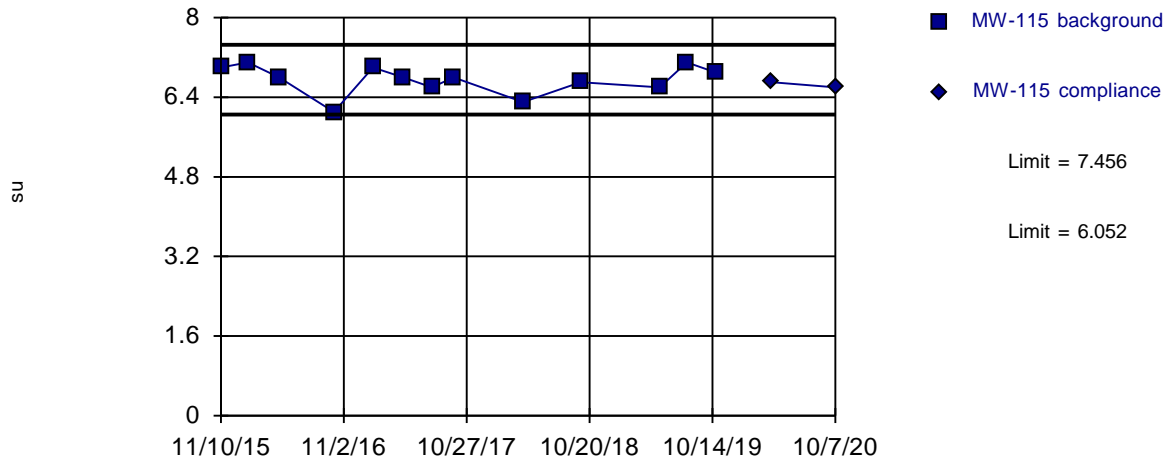
Background Data Summary: Mean=6.7, Std. Dev.=0.2966, n=11. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8904, critical = 0.792. Kappa = 2.474 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



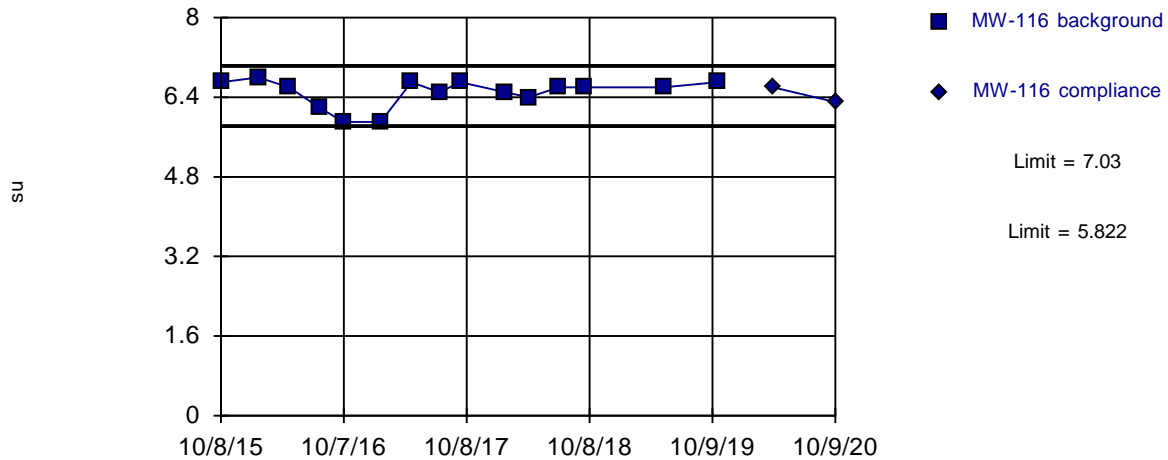
Background Data Summary: Mean=6.754, Std. Dev.=0.2989, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9115, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



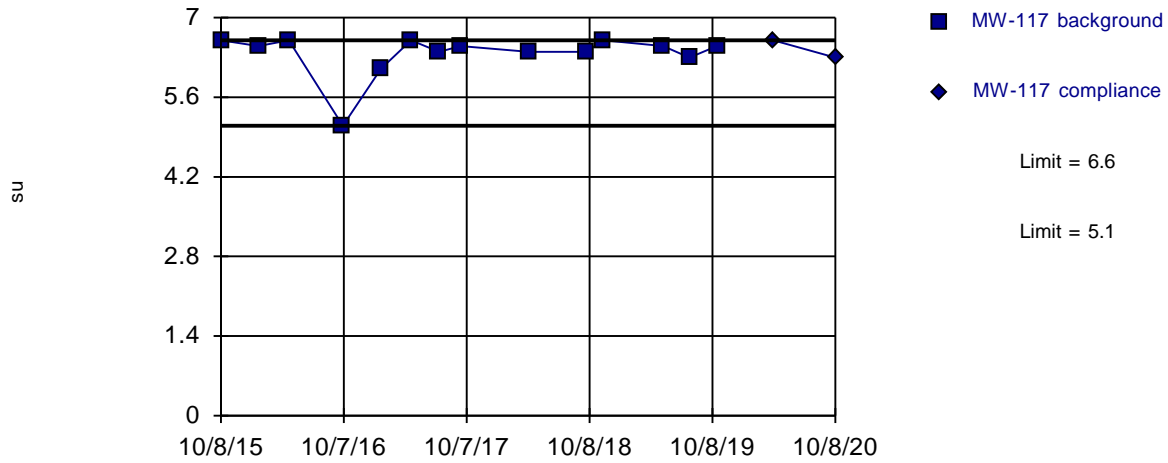
Background Data Summary (based on x⁴ transformation): Mean=1796, Std. Dev.=286.4, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8382, critical = 0.835. Kappa = 2.257 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Non-parametric



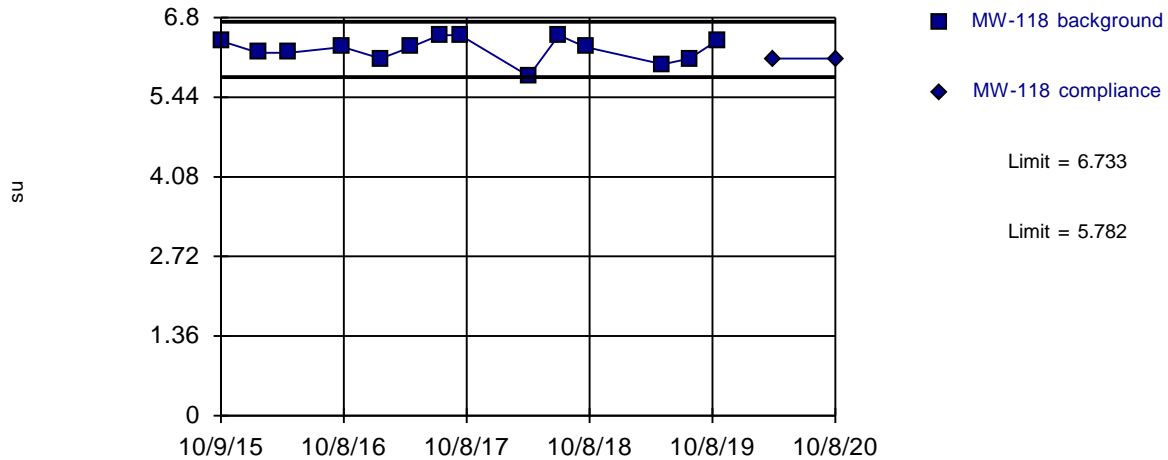
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 14 background values. Well-constituent pair annual alpha = 0.0343. Individual comparison alpha = 0.01722 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



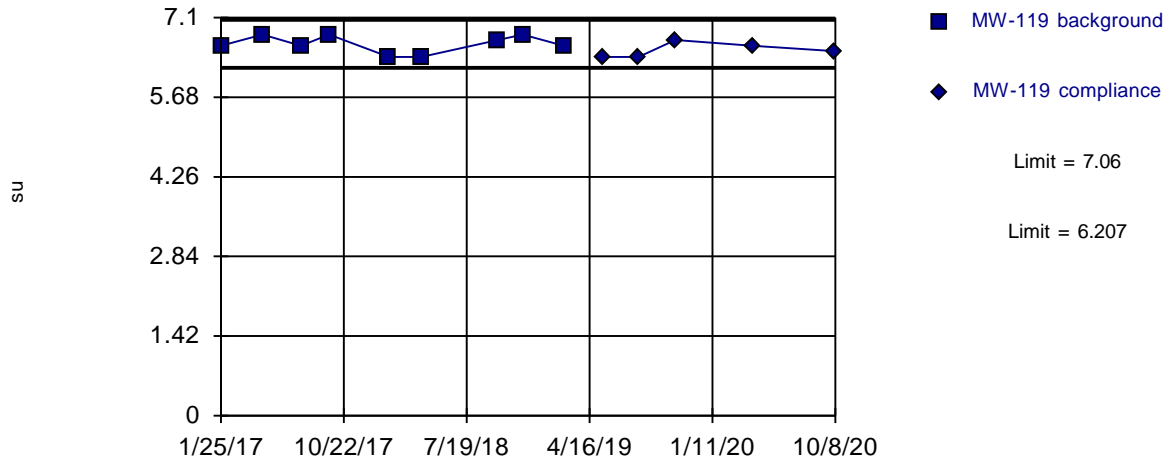
Background Data Summary: Mean=6.257, Std. Dev.=0.2065, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9301, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limits

Prediction Limit Intrawell Parametric



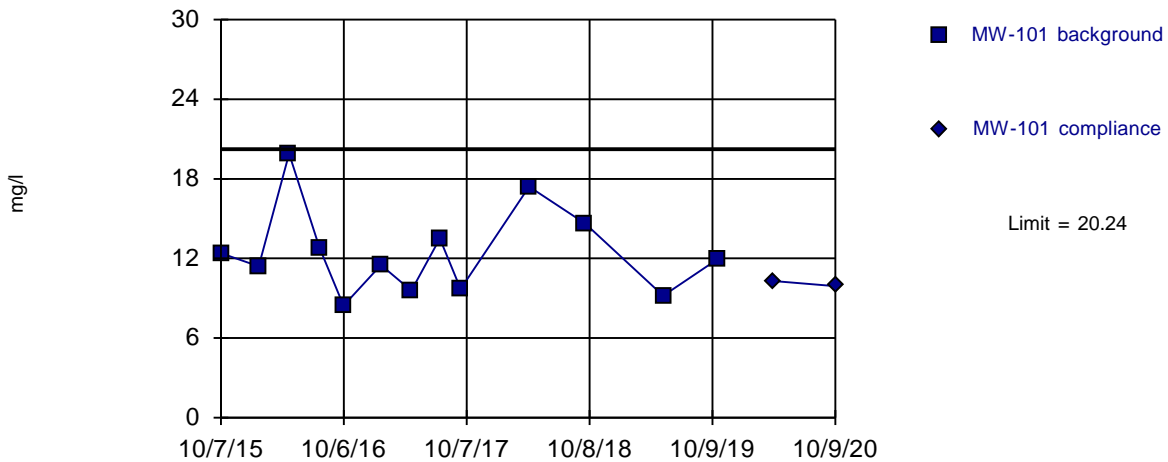
Background Data Summary: Mean=6.633, Std. Dev.=0.1581, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8581, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: pH Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



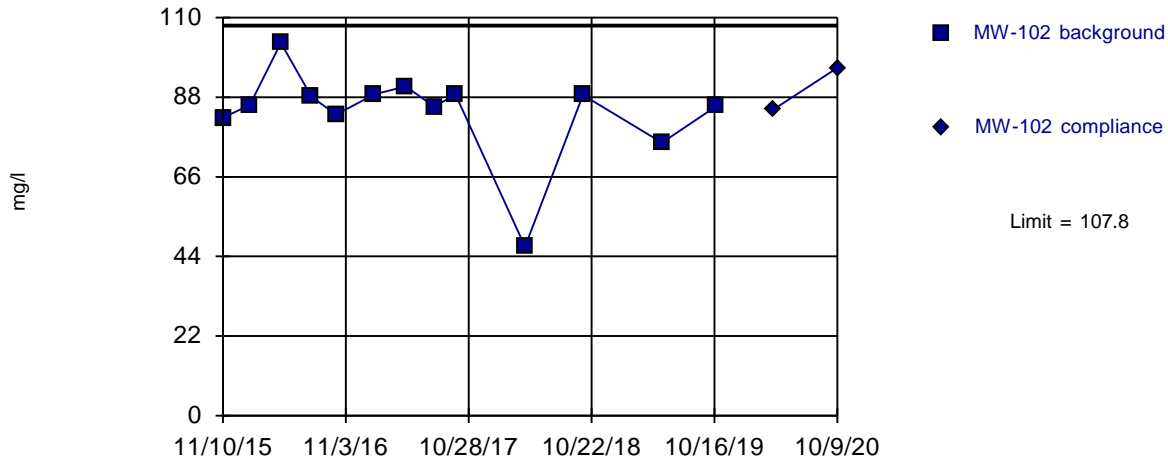
Background Data Summary: Mean=12.48, Std. Dev.=3.303, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9149, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



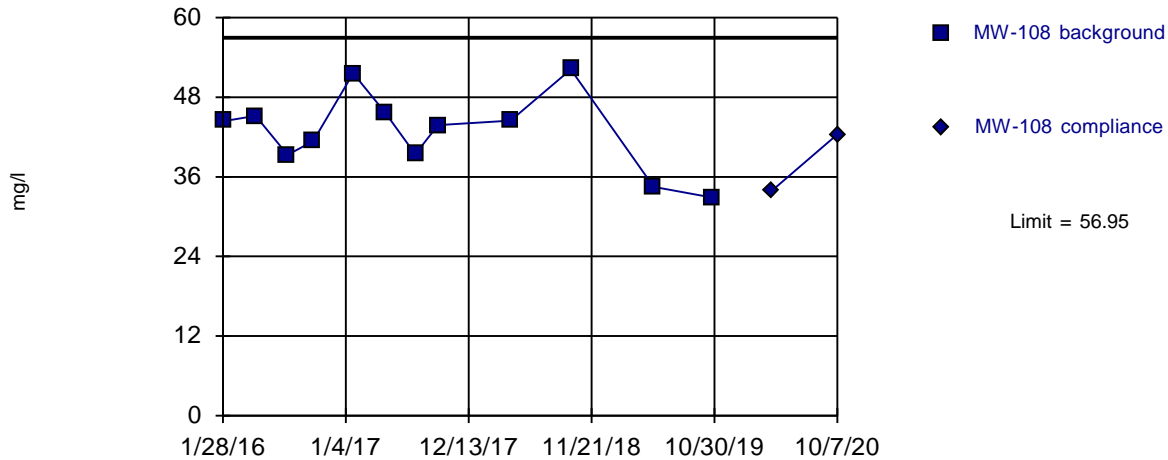
Background Data Summary (based on square transformation): Mean=7217, Std. Dev.=1876, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8224, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



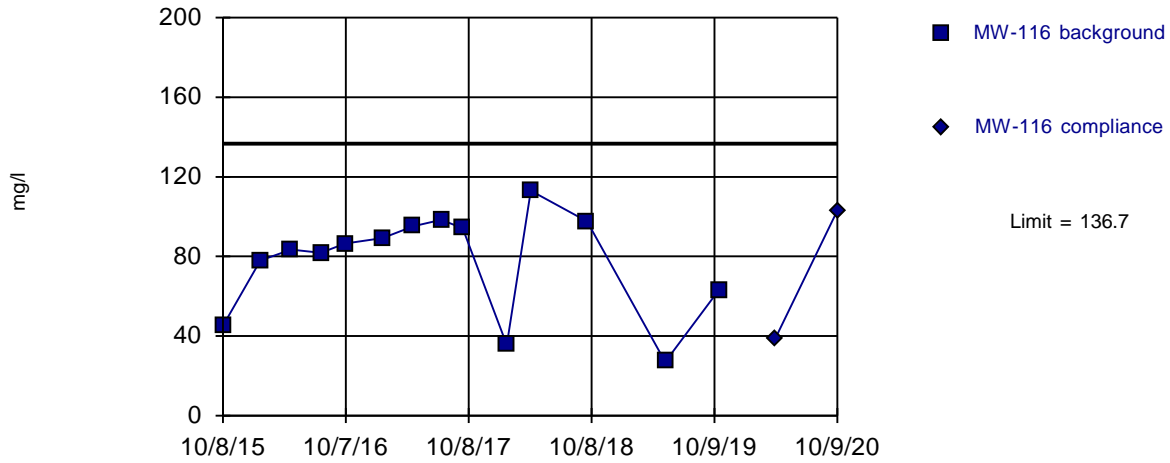
Background Data Summary: Mean=42.91, Std. Dev.=5.869, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9505, critical = 0.805. Kappa = 2.393 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



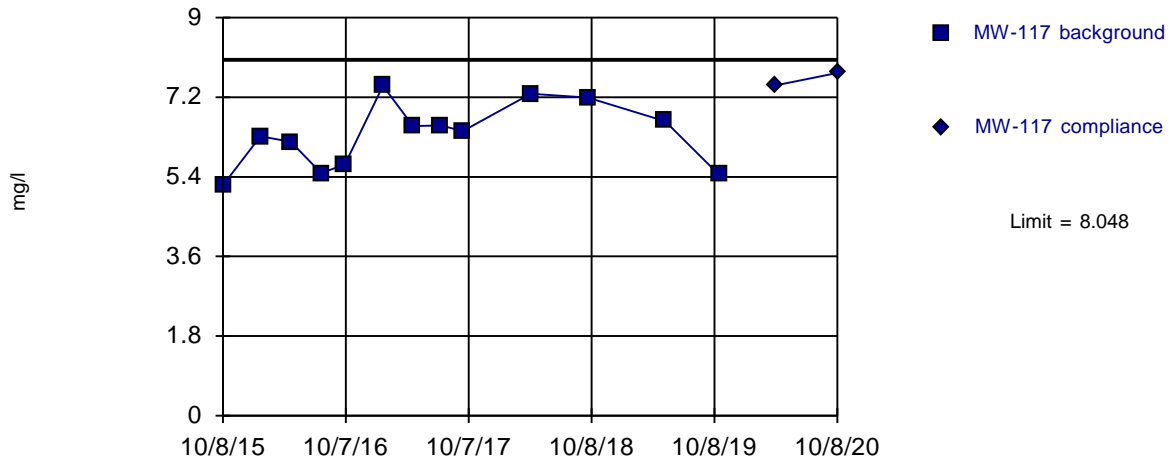
Background Data Summary: Mean=77.71, Std. Dev.=25.62, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8937, critical = 0.825. Kappa = 2.302 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit Intrawell Parametric



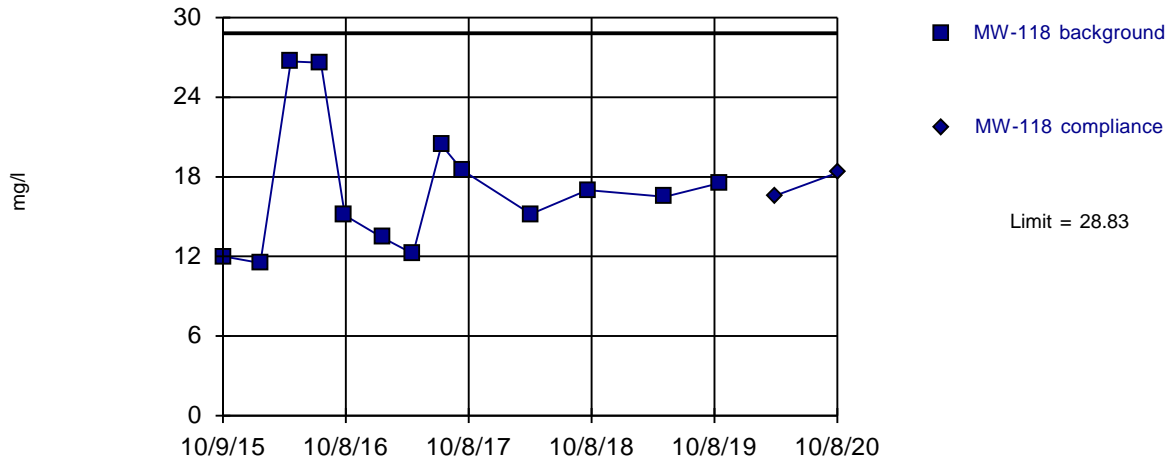
Background Data Summary: Mean=6.343, Std. Dev.=0.7263, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9459, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



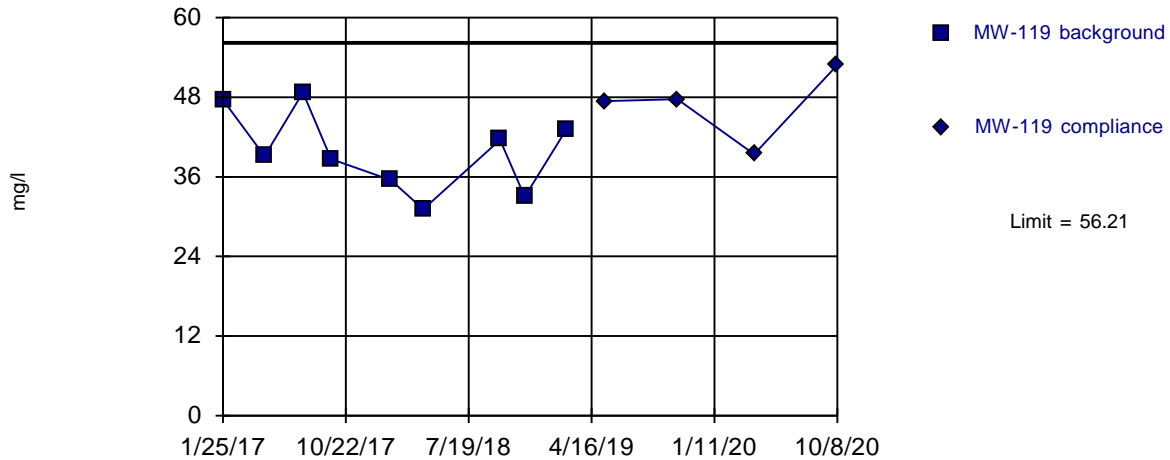
Background Data Summary: Mean=17.12, Std. Dev.=4.987, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8803, critical = 0.814. Kappa = 2.348 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=39.81, Std. Dev.=6.079, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.961, critical = 0.764. Kappa = 2.698 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

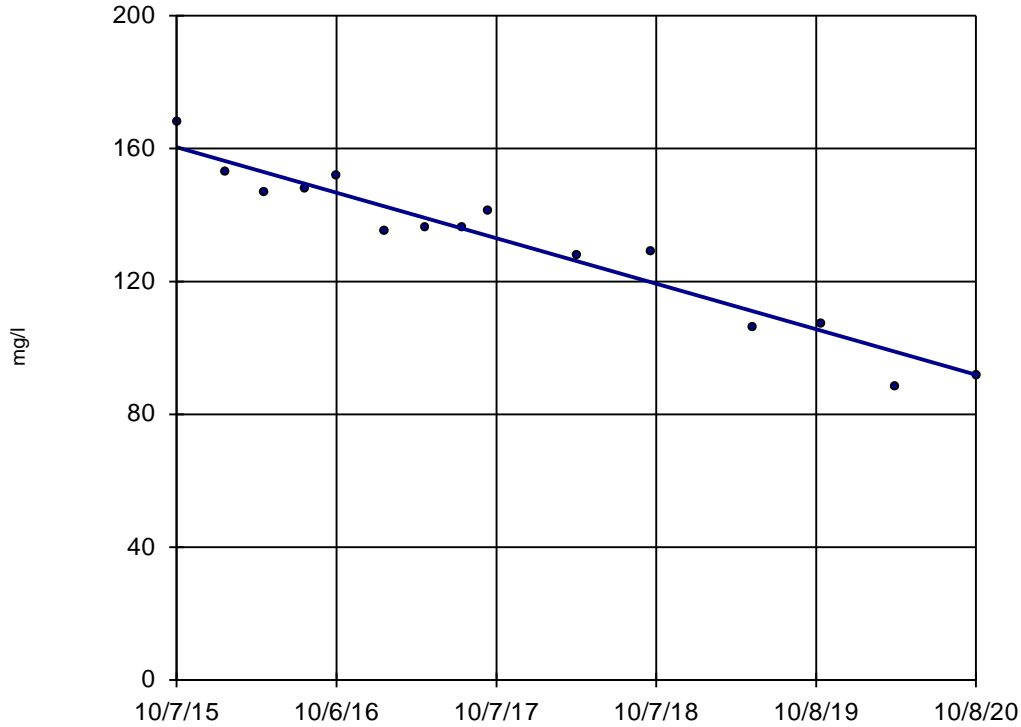
Constituent: Sulfate Analysis Run 10/26/2020 4:25 PM View: 2020-2H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Trend Testing, Second Half 2020 Monitoring Event

Sen's Slope Estimator

MW-103



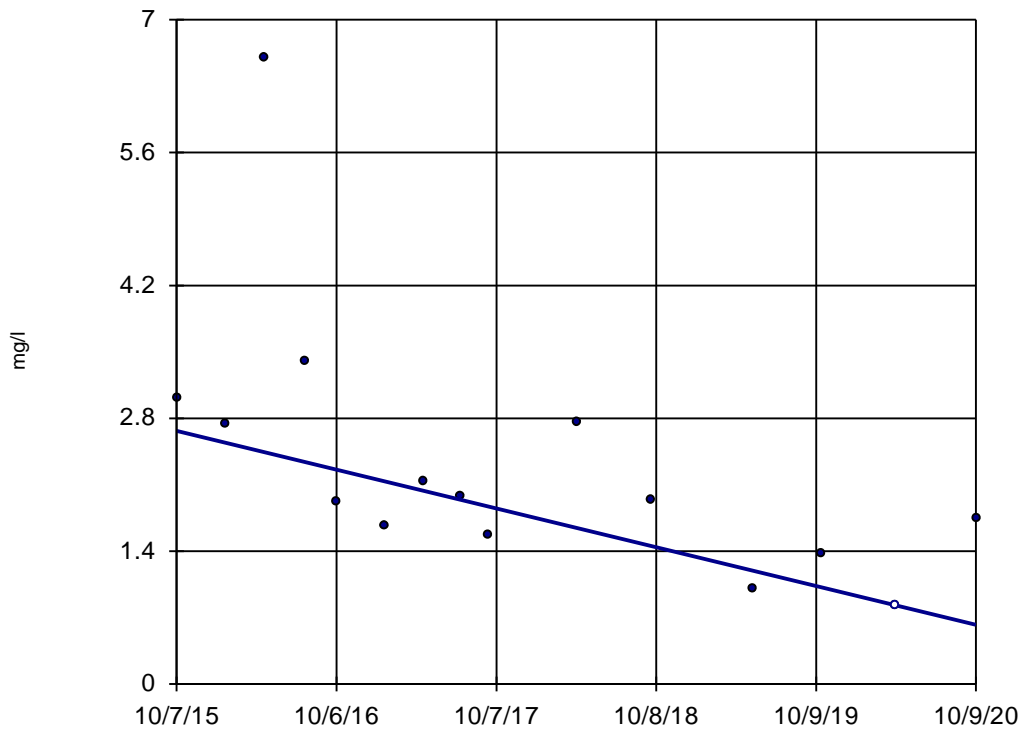
n = 15
Slope = -13.69 units per year.
Mann-Kendall statistic = -82 critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Calcium Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-101



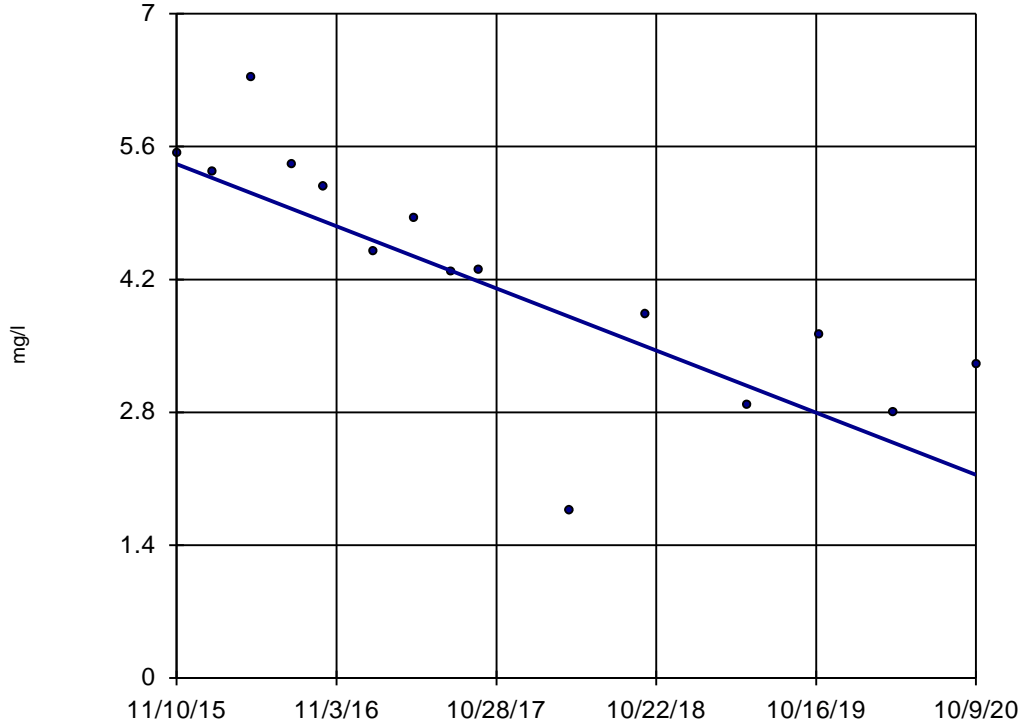
n = 15
Slope = -0.4078 units per year.
Mann-Kendall statistic = -59 critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Chloride Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-102



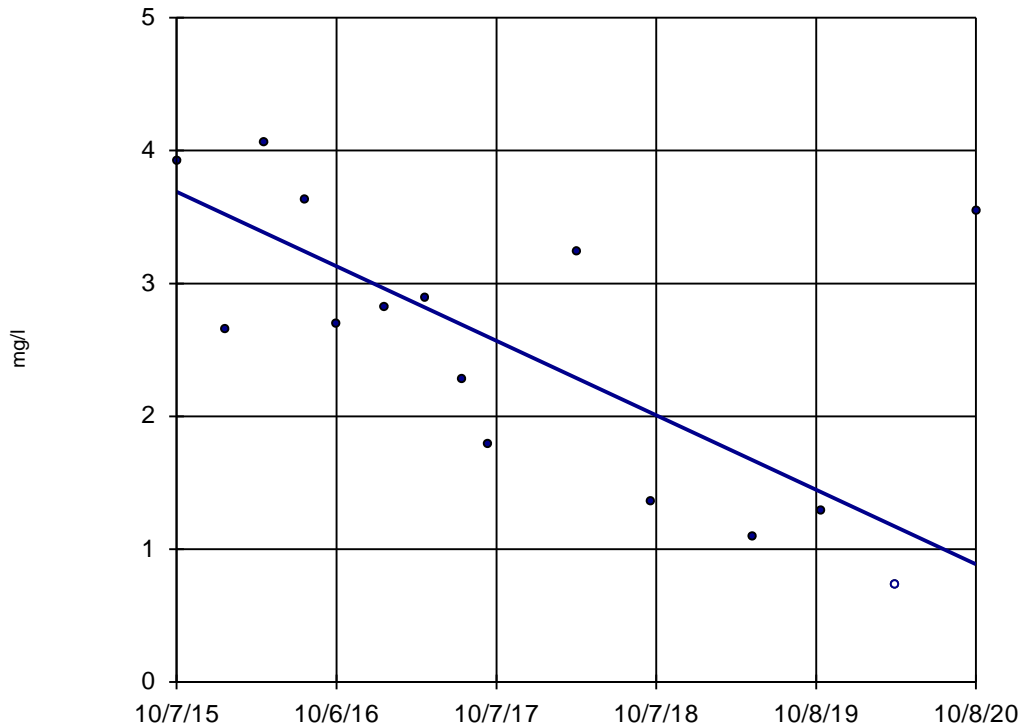
n = 15
Slope = -0.6656 units per year.
Mann-Kendall statistic = -79
critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Chloride Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-103



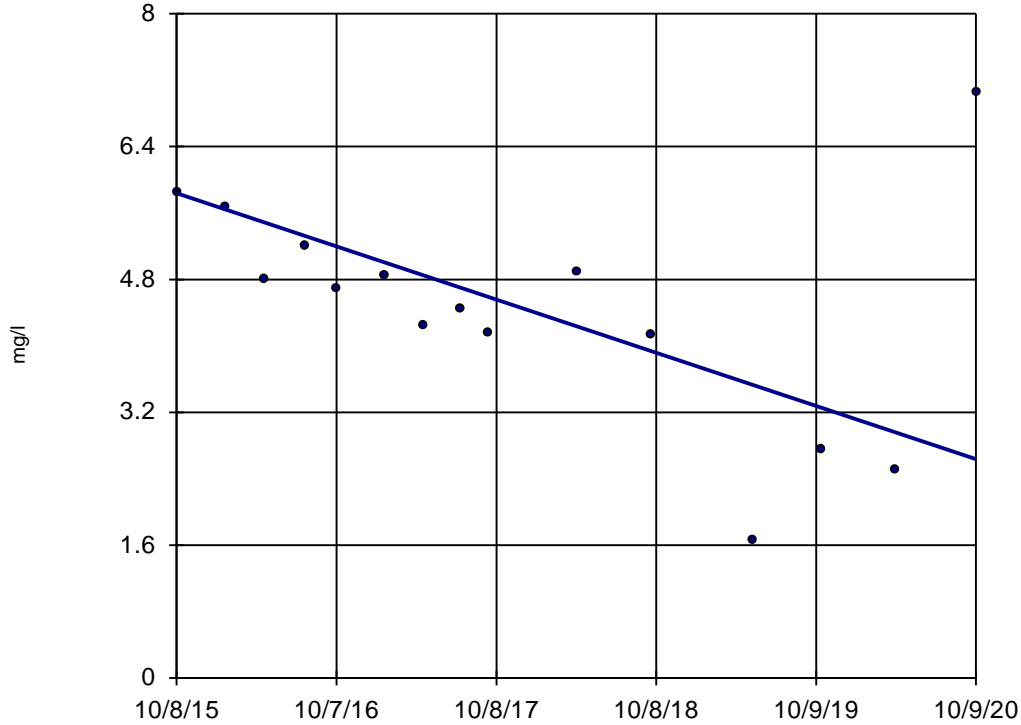
n = 15
Slope = -0.56 units per year.
Mann-Kendall statistic = -51
critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Chloride Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-116



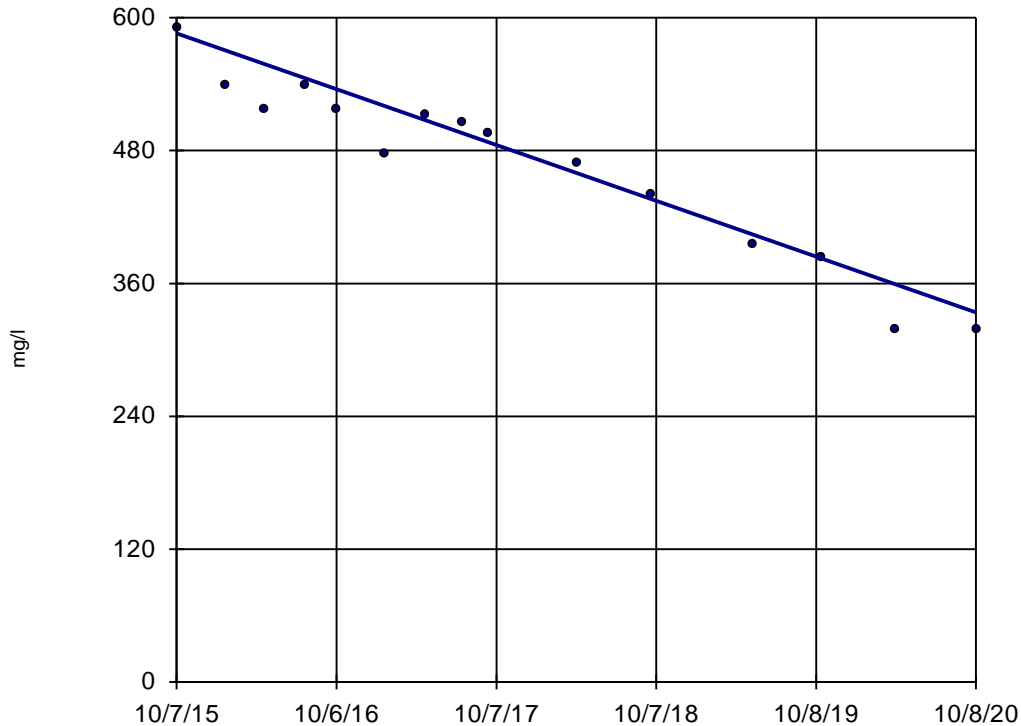
n = 15
Slope = -0.6401 units per year.
Mann-Kendall statistic = -53
critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Chloride Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-103



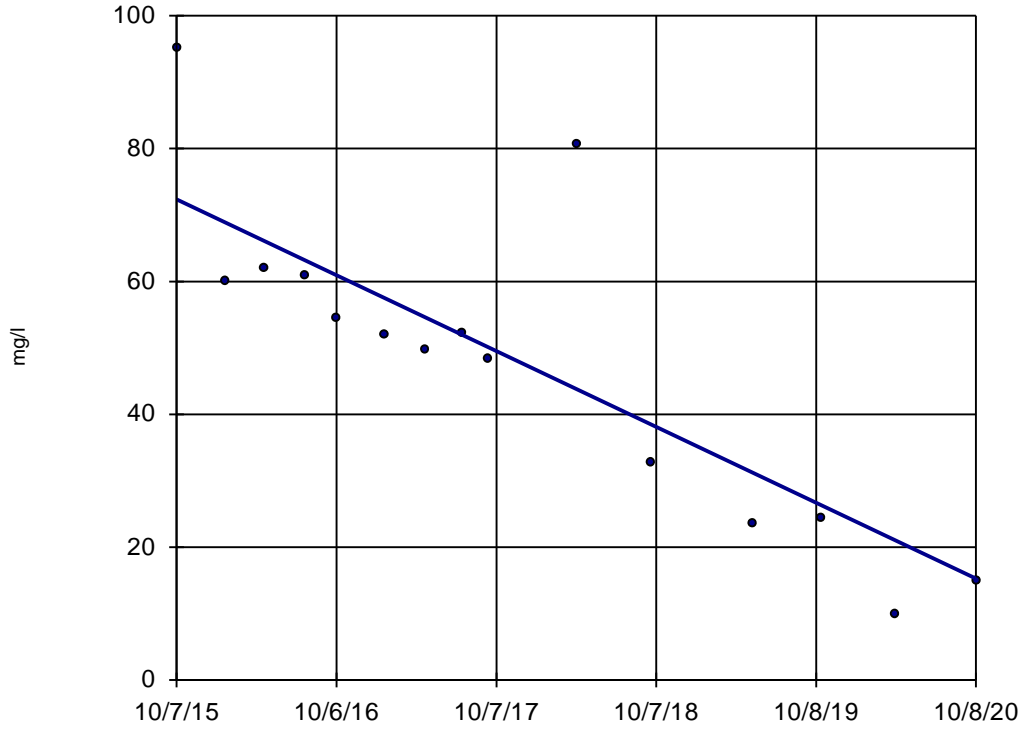
n = 15
Slope = -50.34 units per year.
Mann-Kendall statistic = -92
critical = -48
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Dissolved Solids Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Sen's Slope Estimator

MW-103



n = 15
Slope = -11.4
units per year.
Mann-Kendall
statistic = -77
critical = -48
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 10/26/2020 4:29 PM View: 2020-2H Trend

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

APPENDIX H

Alternate Source Demonstrations




water resources / environmental consultants

3 Innwood Circle, Suite 220 • Little Rock, AR 72211 • (501) 225-7779 • Fax (501) 225-6738

TECHNICAL MEMORANDUM

DATE: August 3, 2020

TO: **Matt Gray**
Plum Point Services Company, LLC

FROM: **Dana Derrington, PE, PG** 
FTN Associates, Ltd.

SUBJECT: Alternate Source Demonstration for Statistically Significant Increases
First Half of 2020 Monitoring Period, Plum Point Energy Station Landfill
FTN No. R14590-2275-001

FTN Associates, Ltd. (FTN), has prepared this technical memorandum for the Plum Point Services Company, LLC (PPSC), coal combustion residuals (CCR) landfill, which is regulated by the Environmental Protection Agency (EPA) Coal Combustion Residuals Rule, promulgated in Title 40 of the Code of Federal Regulations (40 CFR), Part 257. The landfill is also regulated by the Arkansas Pollution Control and Ecology Commission (APCEC) Regulation No. 22 and permitted by the Arkansas Department of Energy and Environment, Division of Environmental Quality (DEQ), under Permit No. 0303-S3N-R1.

FTN was contracted to sample groundwater and to statistically evaluate the data from the first half of 2020 monitoring event. Based on statistical evaluation of the data, two confirmed statistically significant increases (SSIs) over background concentrations were identified. Pursuant to §257.94(e)(2), the landfill may demonstrate that a source other than the CCR unit caused an SSI over background levels for a constituent or that an SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. This memorandum, hereafter referred to as an alternate source demonstration (ASD), presents evidence that the confirmed SSIs are the result of off-site influence and/or natural fluctuations in groundwater quality.

1.0 BACKGROUND

FTN performed groundwater sampling for the first half 2020 semiannual groundwater monitoring period during April 2020. Sample collection, preservation, shipment, analytical procedures, chain-of-custody control, and data quality control for this sampling event followed protocol outlined in the landfill's groundwater sampling and analysis plan (GWSAP) (FTN 2017b). Statistical evaluation of the data set followed the most recent EPA guidance (EPA 2009) and the landfill's statistical analysis plan (SAP) (FTN 2017c). An intrawell prediction limit evaluation identified one unverified SSI for calcium and one previously confirmed SSI for total dissolved solids (TDS) at well MW-117. A site

map showing the locations of these wells relative to the CCR unit (cells 1 and 3) is included as Figure 1 (all figures are included in Attachment 1). Intrawell prediction limit plots are included in Attachment 2.

At the request of FTN, the contracted third-party laboratory, Pace Analytical National of Mount Juliet, Tennessee, re-analyzed the calcium sample to rule out any laboratory-associated error. The TDS sample was not re-analyzed because the sample was outside its 10-day holding time. As shown in Table 1 (Attachment 3), the re-analyzed values were the same or comparable to the values initially reported.

In accordance with the landfill's SAP and EPA guidance (EPA 2009), verification sampling was performed during June 2020 to verify the potential SSI for calcium at MW-117. As shown in Table 1, the verification sampling result for calcium at MW-117 exceeded the intrawell prediction limit, confirming the SSI. Verification sampling was not performed for the SSI for TDS because the SSI was previously confirmed during the first half 2019 and second half 2019 monitoring periods. Successful ASDs were prepared in accordance with §257.94(e)(2) for the confirmed SSI for TDS during the first and second half of 2019 monitoring periods (FTN 2019a, 2019b).

Laboratory reports for the April and June sampling events are included in Attachment 4.

2.0 DISCUSSION

A review of the monitoring system with respect to onsite background wells, background groundwater quality, published literature, and landfill leachate was performed to determine if the confirmed SSIs for calcium and TDS at compliance well MW-117 were indicative of a release from the CCR unit. Findings from this review are discussed below.

2.1 Monitoring System Background Wells

As required by §257.91(c)(1), the groundwater monitoring network is required to contain a minimum of one monitoring well that is hydraulically upgradient of the CCR management area for the purpose of monitoring background water quality. However, there is not a hydraulically upgradient location at this facility because the direction of groundwater flow is seasonably variable. As allowed by §257.91(a)(1), a facility may utilize wells for background water quality that are not hydraulically upgradient of the CCR unit. For this reason, the facility incorporated monitoring wells MW-108, MW-113, and MW-115 (Figure 1) to monitor background water quality because those wells are positioned outside the potential zone of impact from the CCR unit. The rationale for this is based on the age of the landfill; the estimated maximum rate of groundwater flow; and the distance of MW-108, MW-113, and MW-115 from the CCR unit. Specifically:

- MW-108, MW-113, and MW-115 are located more than 2,300 ft from the eastern edge of cell 3;
- Groundwater at the landfill has historically exhibited a maximum flow rate of 40 ft/year; and
- The landfill became active during March 2010.

Using the information available above, a potential leachate plume would not be expected to have migrated more than 412 ft from the CCR unit as of the time of this evaluation. This estimate is conservative for the following reasons:

1. It assumes impact to groundwater occurred at the same time cell 1 was activated (March 2010) and does not account for travel time through the confining unit soils;
2. It assumes that groundwater flows in one direction; however, it is well-documented that groundwater flow at the landfill is multidirectional and reverses flow on a seasonal basis (FTN 2017a); and
3. It does not account for any physical or chemical properties of the constituents of concern that would cause them to travel at rates slower than groundwater (e.g., adsorption).

2.2 Comparison to Onsite Background Groundwater Quality

Period-of-record calcium and TDS data for compliance well MW-117 and background wells MW-108, MW-113, and MW-115 are plotted on the time-series plots and box-and-whiskers diagrams included in Attachment 2. As is evident from these figures, concentrations for calcium and TDS at MW-117 are generally lower than values measured at the onsite background wells. This comparison provides supporting evidence that the currently measured values of calcium and TDS at MW-117 reflect natural fluctuations in groundwater quality.

2.3 Comparison to Published Groundwater Quality for the Aquifer

Each monitoring well is screened in the Mississippi River Valley alluvial aquifer, the uppermost aquifer in the vicinity of the landfill (FTN 2017b). The United States Geological Survey published a study of groundwater quality of the aquifer, specifically with respect to that of Holocene alluvium and Pleistocene valley train deposits, which are two of the major hydrogeologic units within the aquifer (Gonthier 2003). The landfill is located in Holocene alluvium, as shown on Figure 2. According to this study, the reported median and maximum calcium values in wells screened in Holocene alluvium were 77 mg/L and 130 mg/L, respectively. The reported median and maximum TDS values were 355 mg/L and 728 mg/L, respectively. As shown in Table 1, these levels are comparable to those measured at MW-117 and at background wells MW-108, MW-113, and MW-115. This comparison provides supporting evidence that the currently measured values of calcium and TDS at MW-117 reflect natural fluctuations in groundwater quality.

2.4 Comparison to Landfill Leachate

The major ion composition of leachate and groundwater samples collected during April 2020 was evaluated using the Stiff and Piper diagrams included in Attachment 2. These data are collected on a semiannual basis for the landfill's APCEC Regulation No. 22 monitoring program, as required by Permit No. 0303-S3N-R1, and are publicly available on the DEQ website¹. If groundwater has been

¹ https://www.adeg.state.ar.us/sw/permits/facility_data.aspx



Matt Gray
August 3, 2020
Page 4

impacted by landfill leachate, the relative proportions of major ions in groundwater will resemble those in leachate.

A review of the Stiff diagrams shows that the ionic distribution in groundwater at MW-117 is similar to that at background wells MW-108, MW-113, and MW-115. In contrast, the leachate diagram is distinctly different. Specifically, the leachate sample exhibits concentrations of sodium, potassium, and sulfate ions that are comparatively absent in groundwater. The Piper diagram also illustrates the dissimilarity of groundwater quality to leachate, with data for MW-117, MW-108, MW-113, and MW-115 clustered closely together and positioned apart from the leachate data. If leachate was mixing with groundwater at MW-117, the data for MW-117 would plot at an intermediate distance between the leachate data and the data for background wells MW-108, MW-113, and MW-115 on the Piper diagram.

The Stiff and Piper diagrams show that the relative proportions of major ions in groundwater at MW-117 are different than landfill leachate, providing a key line of evidence that the SSIs for calcium and TDS at MW-117 are not due to a release from the CCR unit.

3.0 CONCLUSIONS

In consideration of the information presented in this memorandum, FTN concludes that the SSIs for calcium and TDS at MW-117 are the result of off-site influence and/or natural fluctuations in groundwater quality.

This memorandum serves as the ASD prepared in accordance with §257.94(e)(2) and supports the position that the confirmed SSIs identified for calcium and TDS at MW-117 are not due to a release from the CCR unit. Therefore, no further action is required and the landfill will remain in detection monitoring.

If you have questions or comments regarding this memorandum, please do not hesitate to call Dana Derrington, PE, PG, at (314) 786-5855 or Heather Ferguson at (501) 225-7779.

DLD/hlf

Attachments

R:\WP_FILES\14590-2275-001\CORRESPONDENCE\2020-08-03 FTN TO PPES - EPA ASD FOR 1H2020 EXCEEDANCES\2020-08-03 FTN TO PPES - ASD FOR 1H2020 EXCEEDANCES.DOCX *Hlf*



REFERENCES

- EPA [US Environmental Protection Agency]. 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance* [EPA 530-R-09-007]. Washington, DC: Office of Resource Conservation and Recovery, Program Implementation and Information Division, US Environmental Protection Agency. March 2009.
- FTN [FTN Associates, Ltd.]. 2017a. *Groundwater Monitoring Network Evaluation, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd.
- . 2017b. *Groundwater Sampling and Analysis Plan, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd.
- . 2017c. *Statistical Analysis Plan, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd.
- . 2019a. *Alternate Source Demonstration for Statistically Significant Increases, First Half of 2019 Monitoring Period, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd. October 24, 2019.
- . 2019b. *Alternate Source Demonstration for Statistically Significant Increases, Second Half of 2019 Monitoring Period, Plum Point Energy Station Landfill*. Little Rock, AR: FTN Associates, Ltd. December 17, 2019.
- Gonthier, G.J. 2003. *Quality of Groundwater in Pleistocene and Holocene Subunits of the Mississippi River Alluvial Aquifer, 1998* [Water-Resources Investigations Report 03-4202]. Jackson, MS: National Water-Quality Assessment Program, US Geological Survey.
- Kresse, T.M., P.D. Hays, K.R. Merriman, J.A. Gillip, D.T. Fugitt, J.L. Spellman, A.M. Nottmeier, D.A. Westerman, J.M. Blackstock, and J.L. Battreal. 2014. *Aquifers of Arkansas—Protection, Management, and Hydrologic and Geochemical Characteristics of Groundwater Resources in Arkansas* [USGS Scientific Investigations Report 2014-5149]. Prepared in cooperation with the Arkansas Natural Resources Commission. Reston, VA: US Geological Survey. 334 pp. doi: <http://dx.doi.org/10.3133/sir20145149>.

Matt Gray
August 3, 2020
Page 6

PROFESSIONAL ENGINEER'S CERTIFICATION

With this certification, I certify that I, as a Professional Engineer in the State of Arkansas, am a qualified professional engineer as defined in §257.53 of Title 40 of the Code of Federal Regulations (CFR), Part 257, that this technical memorandum has been prepared under my direction in accordance with generally accepted good engineering practices, that the findings are accurate to the best of my knowledge, and that the alternate source demonstration described herein meets the requirements of §257.94(e)(2) of 40 CFR Part 257.



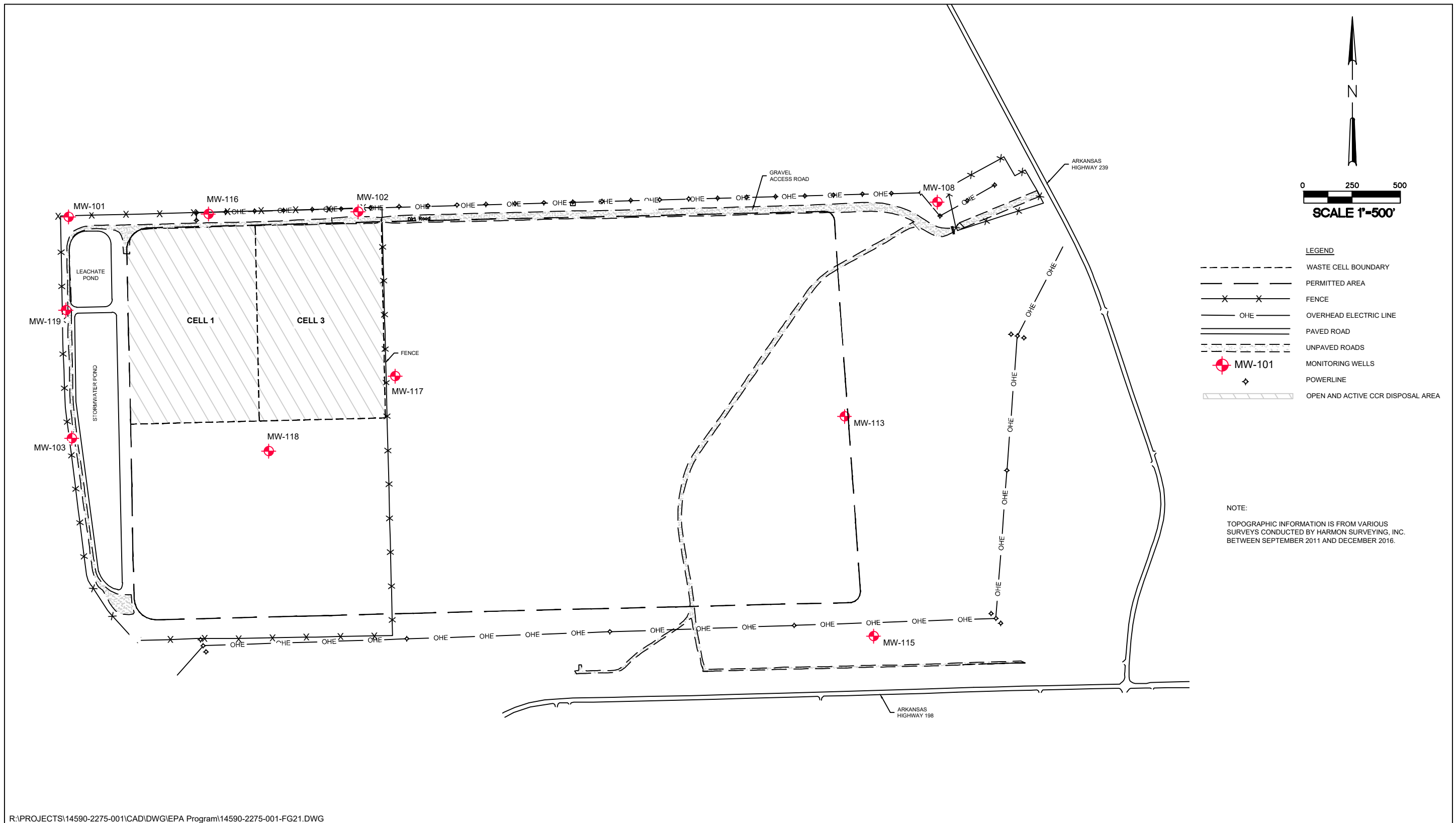
Dana L. Derrington, Arkansas PE #16372

08/03/2020
Date



ATTACHMENT 1

Figures



R:\PROJECTS\14590-2275-001\CAD\DWG\IEPA Program\14590-2275-001-FG21.DWG

Figure 1. Monitoring well locations, Plum Point Energy Station.

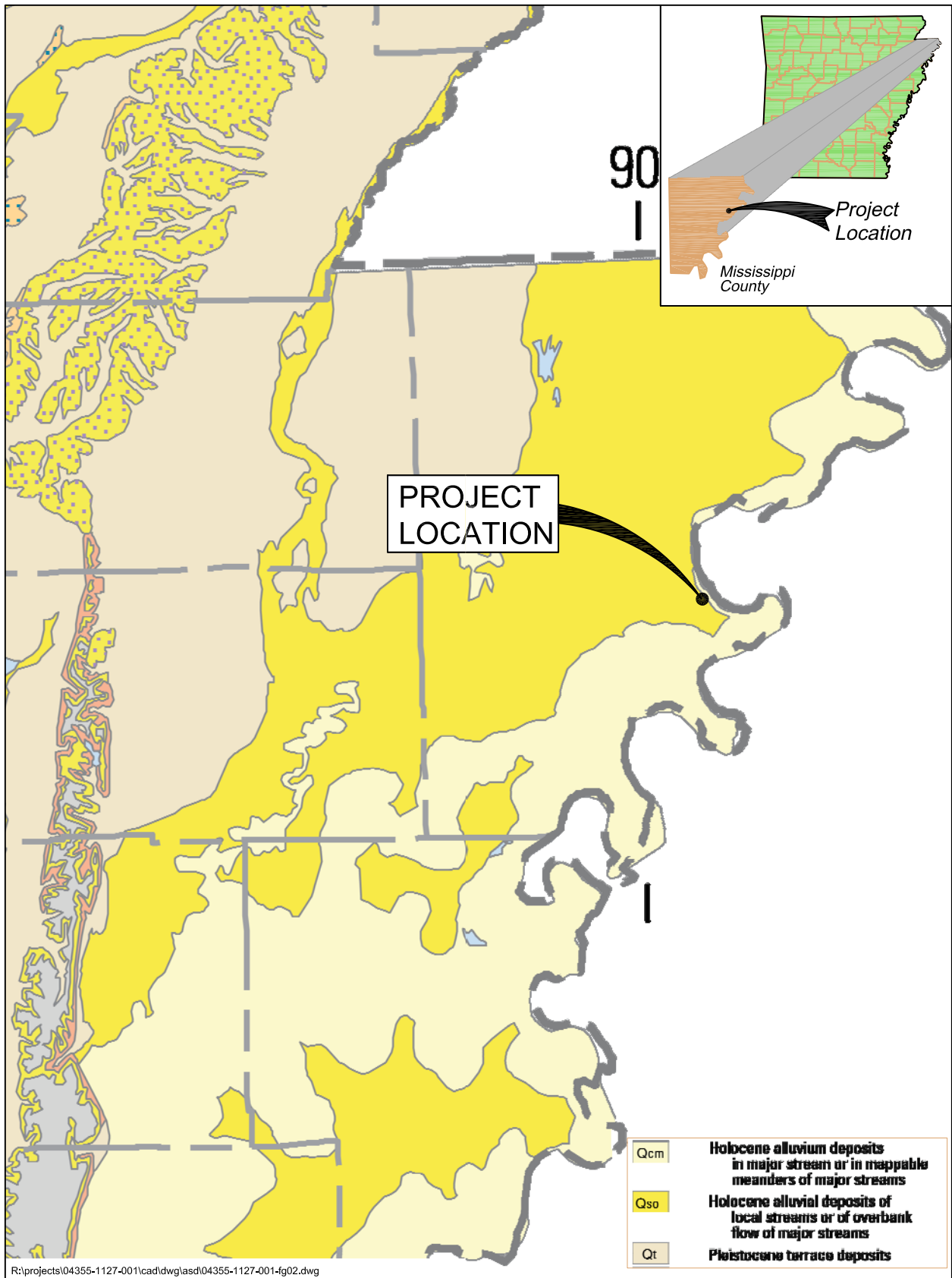


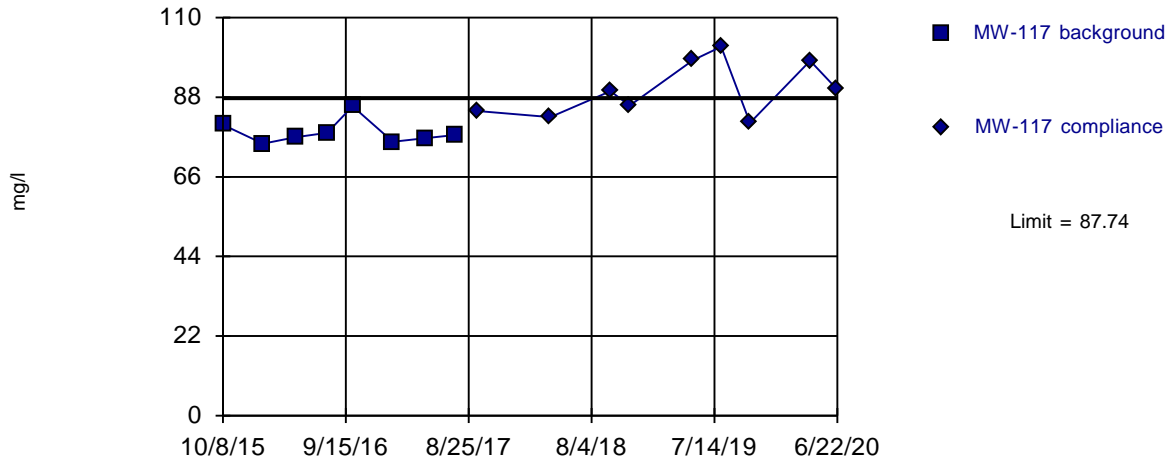
Figure 2. Surface geology of Mississippi County, Arkansas (adapted from Kresse et al. 2014).

ATTACHMENT 2

Statistical Plots

Exceeds Limit

Prediction Limit Intrawell Parametric



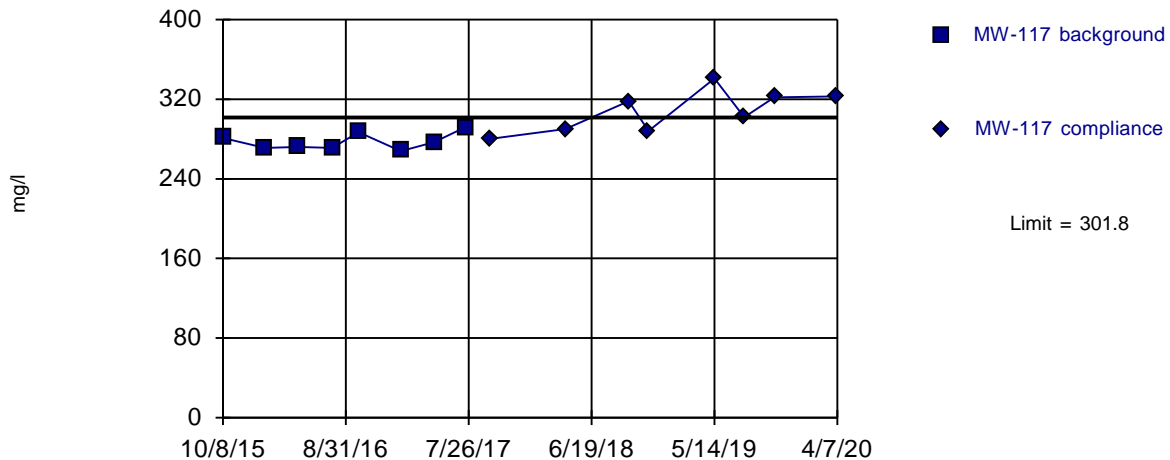
Background Data Summary: Mean=78.28, Std. Dev.=3.33, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8288, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Calcium Analysis Run 6/29/2020 1:21 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Exceeds Limit

Prediction Limit Intrawell Parametric

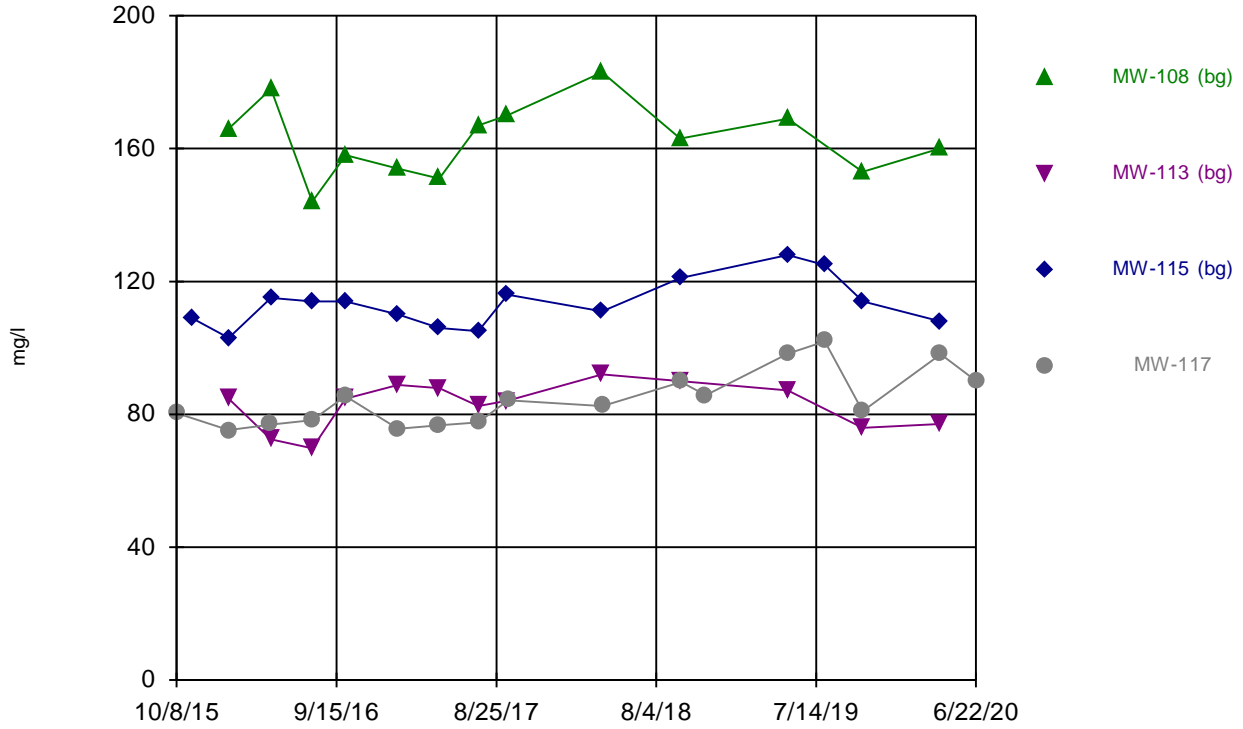


Background Data Summary: Mean=277.4, Std. Dev.=8.601, n=8. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9018, critical = 0.749. Kappa = 2.841 (c=6, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.001254.

Constituent: Dissolved Solids Analysis Run 4/21/2020 12:22 PM View: 2020-1H PL

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

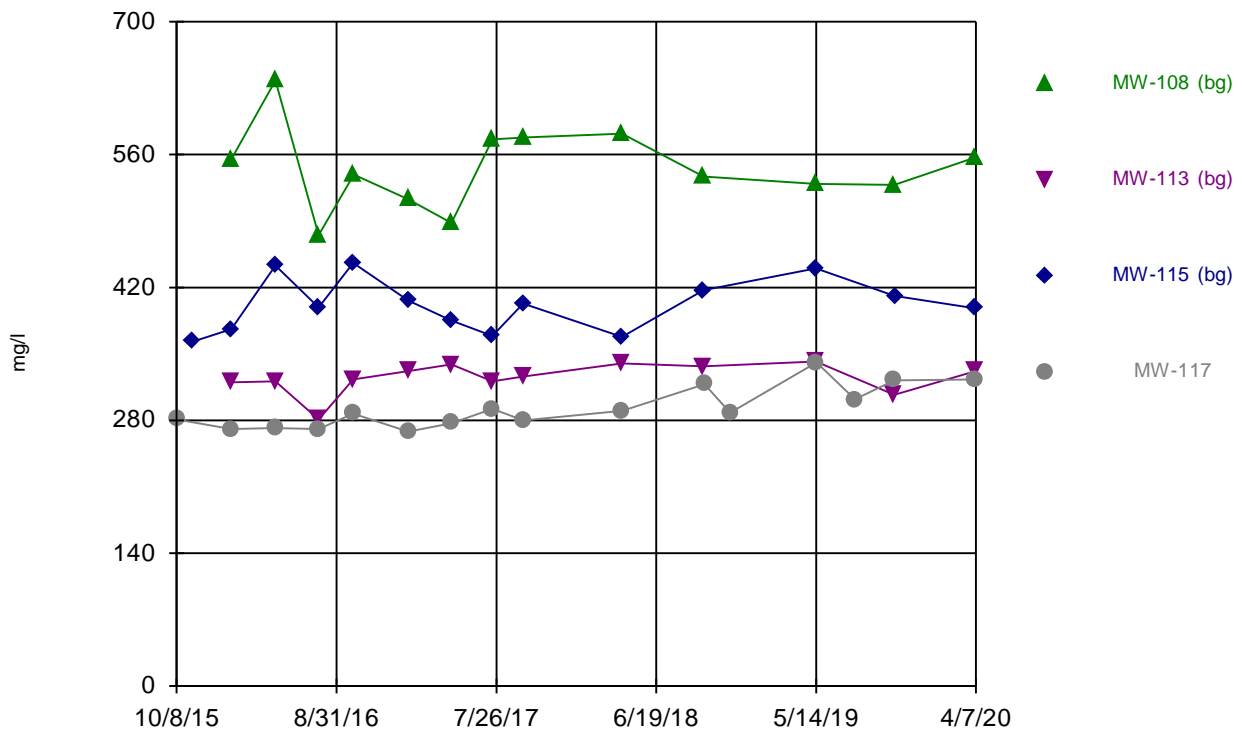
Time Series



Constituent: Calcium Analysis Run 6/29/2020 1:23 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

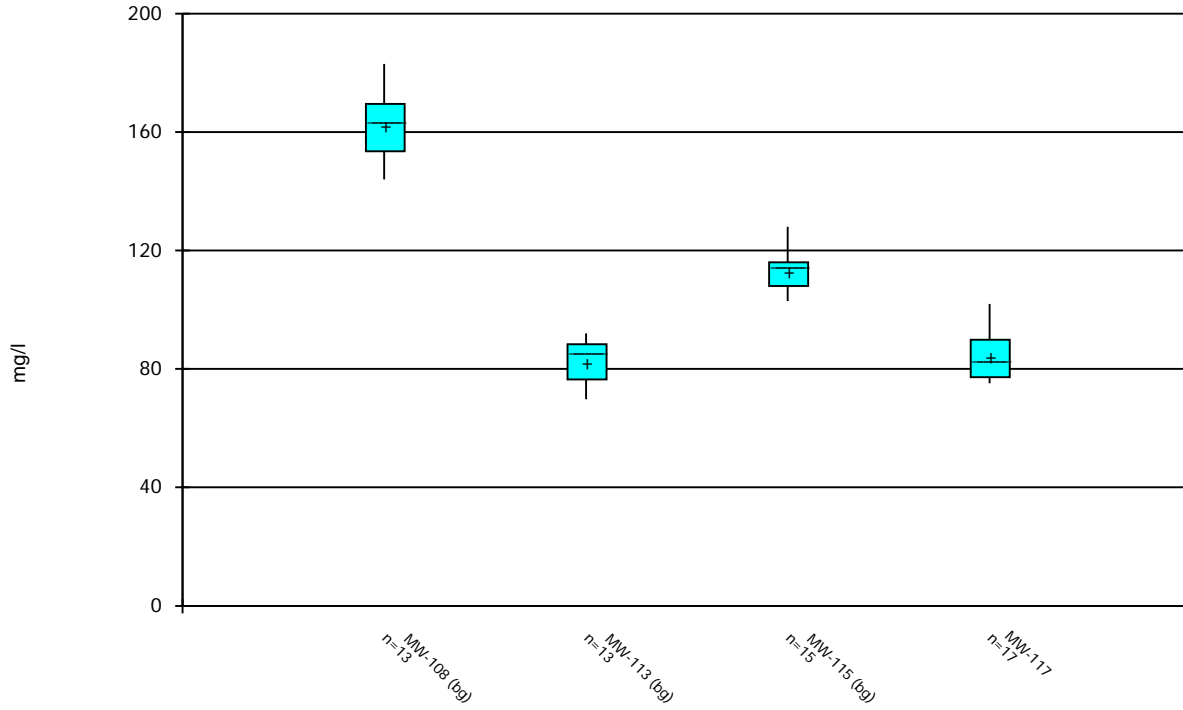
Time Series



Constituent: Dissolved Solids Analysis Run 6/29/2020 1:23 PM

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

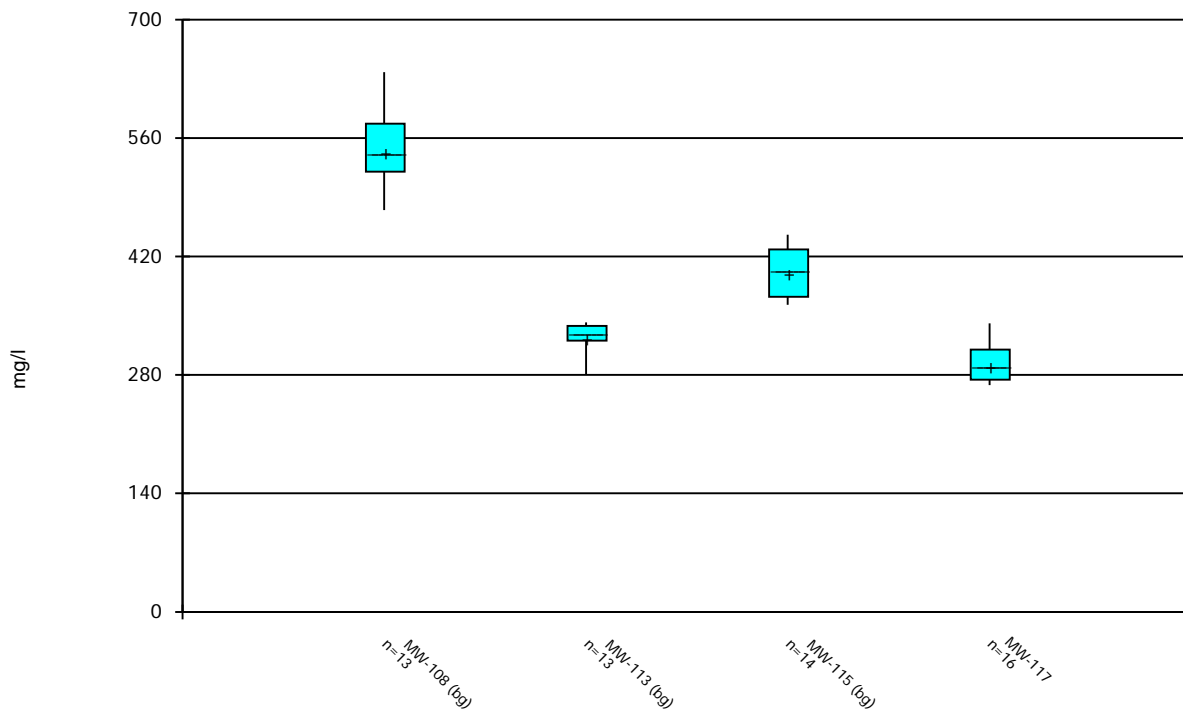
Box & Whiskers Plot



Constituent: Calcium Analysis Run 6/29/2020 1:24 PM

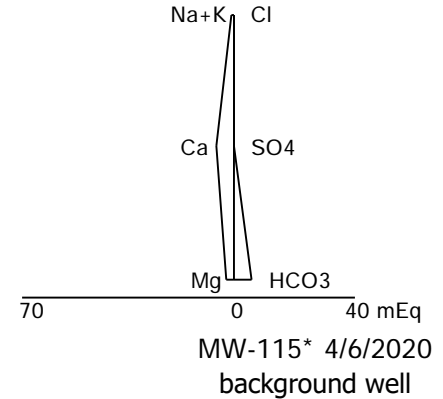
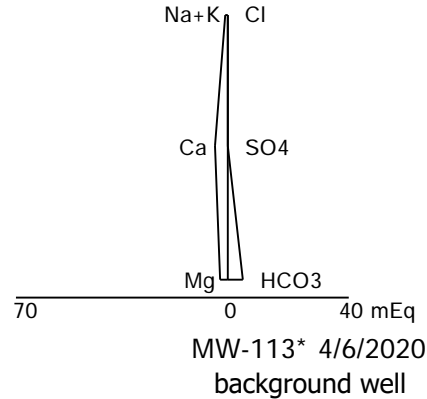
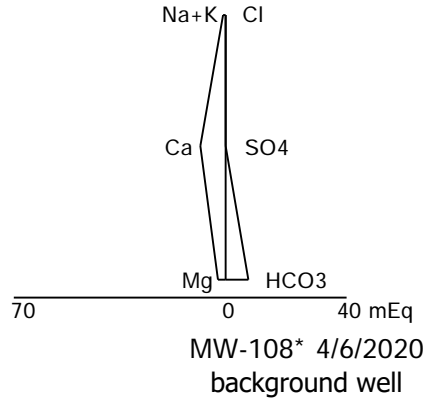
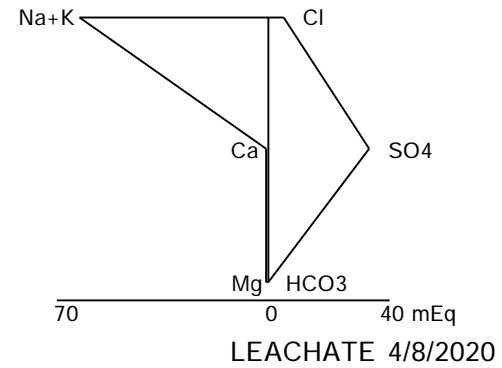
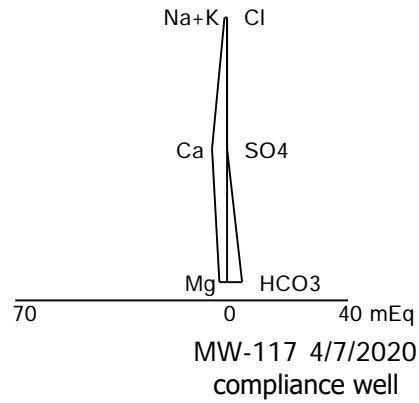
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database

Box & Whiskers Plot



Constituent: Dissolved Solids Analysis Run 6/29/2020 1:24 PM

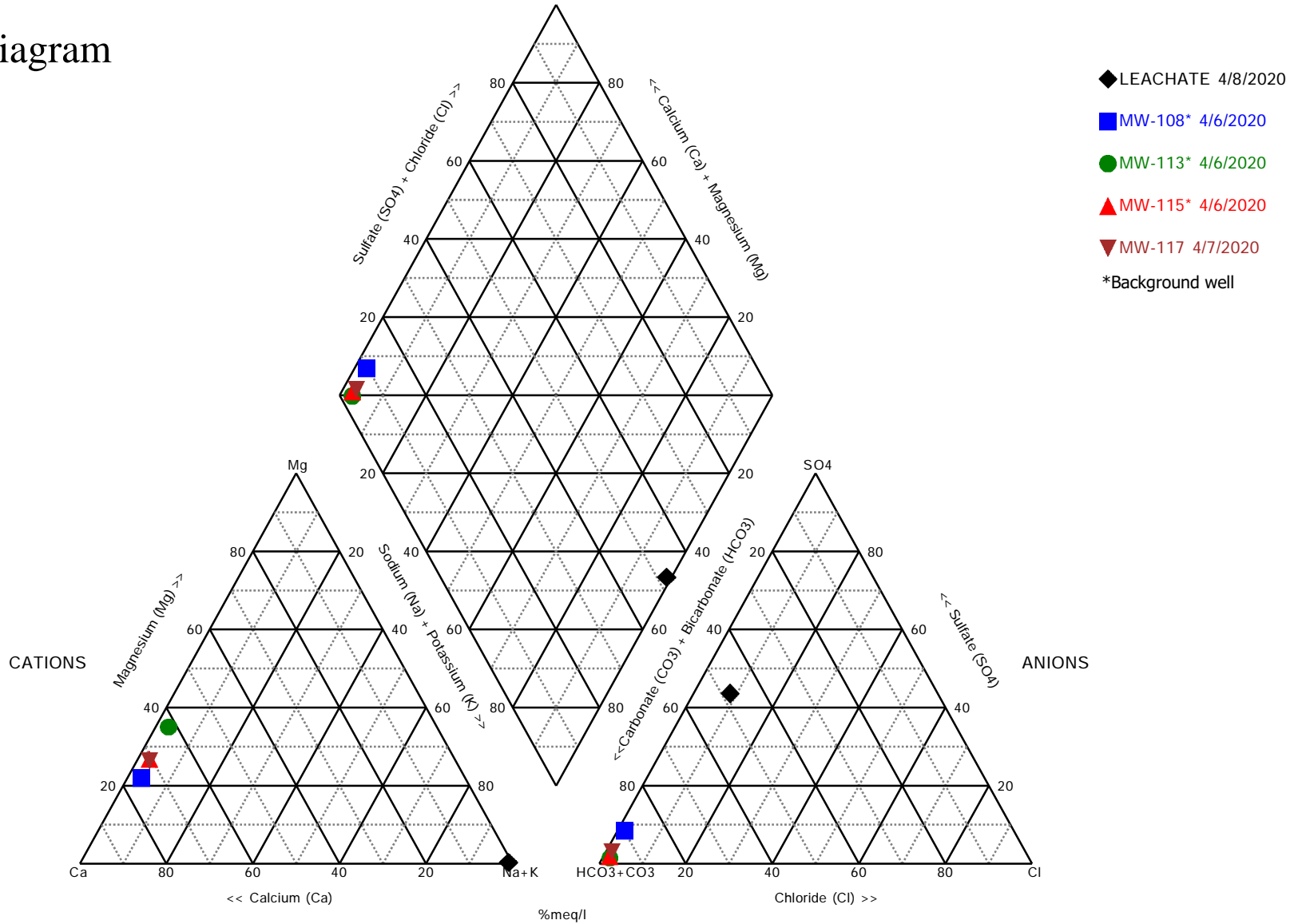
Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES EPA CCR Rule Groundwater Database



Stiff Diagram Analysis Run 5/29/2020 10:14 AM View: 2020-1H ASD

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES Investigational Database

Piper Diagram



Analysis Run 7/20/2020 10:02 AM View: 2020-1H ASD

Plum Point Energy Station Client: Plum Point Services Company, LLC Data: PPES Investigational Database

ATTACHMENT 3

Summary Table

Table 1. Summary of statistically significant results and maximum background and published levels.

Well ID	Parameter	Prediction Limit (mg/L)	April 2020 Observation (mg/L)		June 2020 Verification Result (mg/L)	SSI Confirmed?	Maximum Background Level ^(a) (mg/L)	Maximum Published Level ^(b) (mg/L)
			Initial	Re-Run				
MW-117	Calcium	87.74	91.3	98.1 ^(c)	90.1	Yes	183 (MW-108, April 2018)	130
MW-117	TDS	301.8	323	--- ^(d)	N/A ^(e)	Yes	638 (MW-108, April 2016)	728

Notes:

- a. Based on historical values at MW-108, MW-113, and MW-115.
- b. From Gonthier 2003.
- c. Result shown is based on laboratory re-run of the sample for verification purposes.
- d. Not applicable; sample was outside holding time for retesting by the laboratory.
- e. Not applicable; verification sampling was not performed because SSI was previously confirmed.

REFERENCES

Gonthier, G.J. 2003. *Quality of Groundwater in Pleistocene and Holocene Subunits of the Mississippi River Alluvial Aquifer, 1998* [Water-Resources Investigations Report 03-4202]. Jackson, MS: US Geological Survey, National Water-Quality Assessment Program.

ATTACHMENT 4

Laboratory Reports

April 15, 2020

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

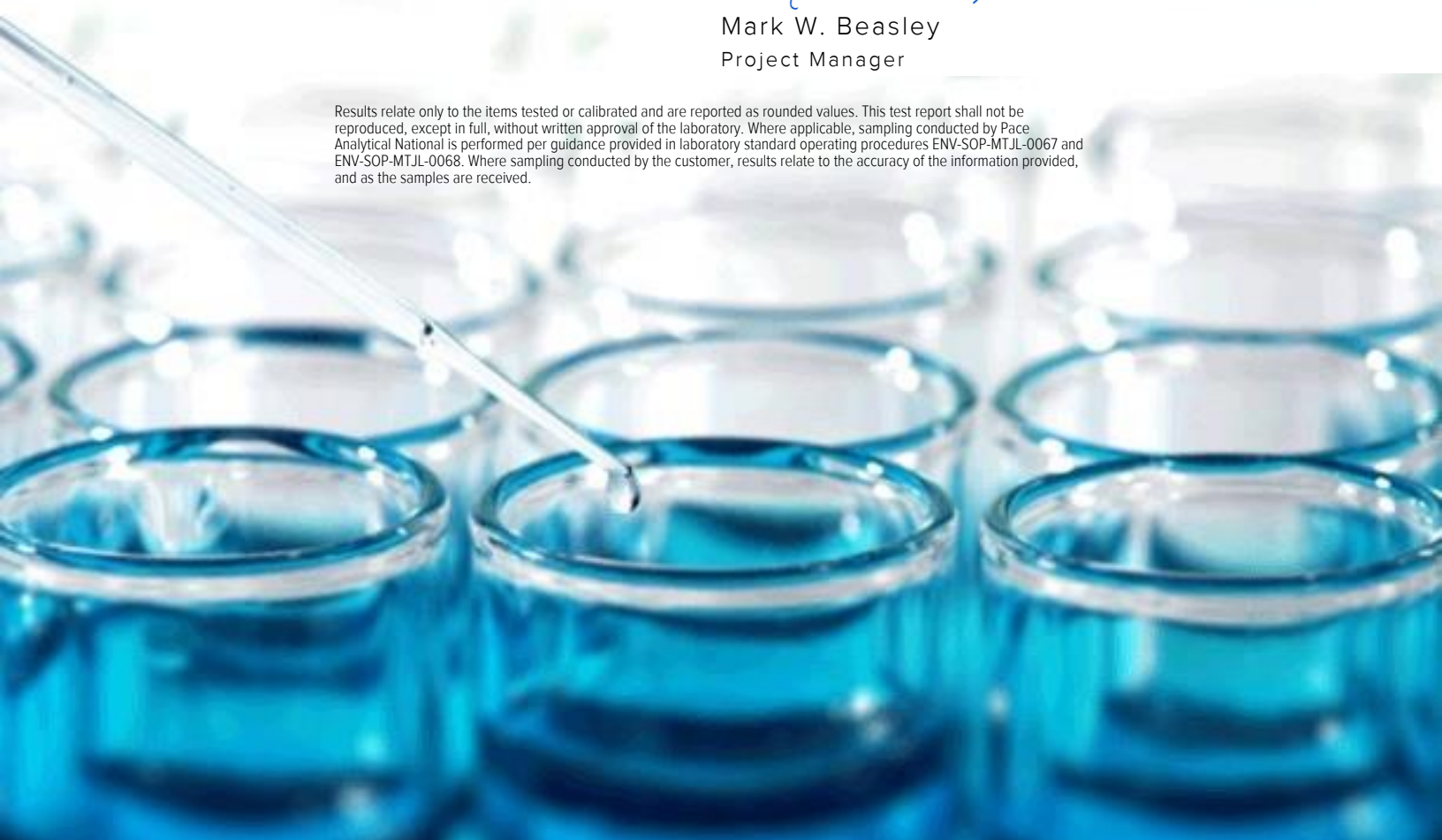
Sample Delivery Group: L1207727
Samples Received: 04/10/2020
Project Number: 14590-2275-001
Description: Plum Point Energy Station

Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW-101 L1207727-01	6
MW-102 L1207727-02	7
MW-103 L1207727-03	8
MW-108 L1207727-04	9
MW-113 L1207727-05	10
MW-115 L1207727-06	11
MW-116 L1207727-07	12
MW-117 L1207727-08	13
MW-118 L1207727-09	14
MW-119 L1207727-10	15
MW-117 DUP L1207727-11	16
EPA EB-1 L1207727-12	17
Qc: Quality Control Summary	18
Gravimetric Analysis by Method 2540 C-2011	18
Wet Chemistry by Method 9056A	22
Metals (ICP) by Method 6010B	24
Gl: Glossary of Terms	25
Al: Accreditations & Locations	26
Sc: Sample Chain of Custody	27

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SAMPLE SUMMARY



MW-101 L1207727-01 GW

Collected by Michael Clayton
Collected date/time 04/08/20 13:05
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 07:24	04/13/20 07:24	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 14:54	CCE	Mt. Juliet, TN

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

MW-102 L1207727-02 GW

Collected by Michael Clayton
Collected date/time 04/07/20 15:10
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459441	1	04/13/20 06:43	04/13/20 12:03	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 07:37	04/13/20 07:37	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 14:57	CCE	Mt. Juliet, TN

MW-103 L1207727-03 GW

Collected by Michael Clayton
Collected date/time 04/08/20 11:05
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 07:50	04/13/20 07:50	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:00	CCE	Mt. Juliet, TN

MW-108 L1207727-04 GW

Collected by Michael Clayton
Collected date/time 04/06/20 16:15
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1458982	1	04/11/20 18:40	04/12/20 01:28	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 08:03	04/13/20 08:03	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:02	CCE	Mt. Juliet, TN

MW-113 L1207727-05 GW

Collected by Michael Clayton
Collected date/time 04/06/20 15:05
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1458982	1	04/11/20 18:40	04/12/20 01:28	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 08:17	04/13/20 08:17	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:10	CCE	Mt. Juliet, TN

MW-115 L1207727-06 GW

Collected by Michael Clayton
Collected date/time 04/06/20 13:55
Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1458982	1	04/11/20 18:40	04/12/20 01:28	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 08:30	04/13/20 08:30	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:13	CCE	Mt. Juliet, TN

SAMPLE SUMMARY



MW-116 L1207727-07 GW

Collected by Michael Clayton
 Collected date/time 04/08/20 14:05
 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:09	04/13/20 09:09	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:16	CCE	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

MW-117 L1207727-08 GW

Collected by Michael Clayton
 Collected date/time 04/07/20 16:20
 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459441	1	04/13/20 06:43	04/13/20 12:03	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:22	04/13/20 09:22	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:18	CCE	Mt. Juliet, TN

4 Cn

5 Sr

6 Qc

MW-118 L1207727-09 GW

Collected by Michael Clayton
 Collected date/time 04/08/20 09:55
 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:35	04/13/20 09:35	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:21	CCE	Mt. Juliet, TN

7 Gl

8 Al

9 Sc

MW-119 L1207727-10 GW

Collected by Michael Clayton
 Collected date/time 04/08/20 12:05
 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459442	1	04/13/20 13:32	04/13/20 15:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 09:48	04/13/20 09:48	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:24	CCE	Mt. Juliet, TN

MW-117 DUP L1207727-11 GW

Collected by Michael Clayton
 Collected date/time 04/07/20 16:25
 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459441	1	04/13/20 06:43	04/13/20 12:03	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 10:01	04/13/20 10:01	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:26	CCE	Mt. Juliet, TN

EPA EB-1 L1207727-12 GW

Collected by Michael Clayton
 Collected date/time 04/08/20 15:05
 Received date/time 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1459443	1	04/13/20 06:44	04/13/20 12:51	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1459605	1	04/13/20 10:14	04/13/20 10:14	MCG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1459652	1	04/13/20 07:59	04/13/20 15:29	CCE	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	362000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	823	J	379	1000	1	04/13/2020 07:24	WG1459605
Fluoride	279		64.0	150	1	04/13/2020 07:24	WG1459605
Sulfate	10300		594	5000	1	04/13/2020 07:24	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	78.0	J	25.4	200	1	04/13/2020 14:54	WG1459652
Calcium	105000		389	1000	1	04/13/2020 14:54	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	461000		2820	10000	1	04/13/2020 12:03	WG1459441

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2790		379	1000	1	04/13/2020 07:37	WG1459605
Fluoride	199		64.0	150	1	04/13/2020 07:37	WG1459605
Sulfate	84700		594	5000	1	04/13/2020 07:37	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	89.0	J	25.4	200	1	04/13/2020 14:57	WG1459652
Calcium	116000		389	1000	1	04/13/2020 14:57	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	318000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	726	J	379	1000	1	04/13/2020 07:50	WG1459605
Fluoride	219		64.0	150	1	04/13/2020 07:50	WG1459605
Sulfate	9930		594	5000	1	04/13/2020 07:50	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	54.1	J	25.4	200	1	04/13/2020 15:00	WG1459652
Calcium	88200		389	1000	1	04/13/2020 15:00	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	557000		2820	10000	1	04/12/2020 01:28	WG1458982

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1870		379	1000	1	04/13/2020 08:03	WG1459605
Fluoride	185		64.0	150	1	04/13/2020 08:03	WG1459605
Sulfate	33800		594	5000	1	04/13/2020 08:03	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	143	J	25.4	200	1	04/13/2020 15:02	WG1459652
Calcium	160000		389	1000	1	04/13/2020 15:02	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	332000		2820	10000	1	04/12/2020 01:28	WG1458982

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1080		379	1000	1	04/13/2020 08:17	WG1459605
Fluoride	94.3	J	64.0	150	1	04/13/2020 08:17	WG1459605
Sulfate	3610	J	594	5000	1	04/13/2020 08:17	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	131	J	25.4	200	1	04/13/2020 15:10	WG1459652
Calcium	77100		389	1000	1	04/13/2020 15:10	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	398000		2820	10000	1	04/12/2020 01:28	WG1458982

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	922	J	379	1000	1	04/13/2020 08:30	WG1459605
Fluoride	192		64.0	150	1	04/13/2020 08:30	WG1459605
Sulfate	5370		594	5000	1	04/13/2020 08:30	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	52.5	J	25.4	200	1	04/13/2020 15:13	WG1459652
Calcium	108000		389	1000	1	04/13/2020 15:13	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	365000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2500		379	1000	1	04/13/2020 09:09	WG1459605
Fluoride	184		64.0	150	1	04/13/2020 09:09	WG1459605
Sulfate	38700		594	5000	1	04/13/2020 09:09	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	76.8	J	25.4	200	1	04/13/2020 15:16	WG1459652
Calcium	98300		389	1000	1	04/13/2020 15:16	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	323000		2820	10000	1	04/13/2020 12:03	WG1459441

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1330		379	1000	1	04/13/2020 09:22	WG1459605
Fluoride	144	J	64.0	150	1	04/13/2020 09:22	WG1459605
Sulfate	7470		594	5000	1	04/13/2020 09:22	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	75.9	J	25.4	200	1	04/13/2020 15:18	WG1459652
Calcium	91300		389	1000	1	04/13/2020 15:18	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	304000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1620		379	1000	1	04/13/2020 09:35	WG1459605
Fluoride	152		64.0	150	1	04/13/2020 09:35	WG1459605
Sulfate	16600		594	5000	1	04/13/2020 09:35	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	73.9	J	25.4	200	1	04/13/2020 15:21	WG1459652
Calcium	82900		389	1000	1	04/13/2020 15:21	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	426000		2820	10000	1	04/13/2020 15:57	WG1459442

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	2450		379	1000	1	04/13/2020 09:48	WG1459605
Fluoride	229		64.0	150	1	04/13/2020 09:48	WG1459605
Sulfate	39400		594	5000	1	04/13/2020 09:48	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	63.9	J	25.4	200	1	04/13/2020 15:24	WG1459652
Calcium	109000		389	1000	1	04/13/2020 15:24	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	316000		2820	10000	1	04/13/2020 12:03	WG1459441

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	1320		379	1000	1	04/13/2020 10:01	WG1459605
Fluoride	143	J	64.0	150	1	04/13/2020 10:01	WG1459605
Sulfate	7550		594	5000	1	04/13/2020 10:01	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	77.6	J	25.4	200	1	04/13/2020 15:26	WG1459652
Calcium	90200		389	1000	1	04/13/2020 15:26	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	U		2820	10000	1	04/13/2020 12:51	WG1459443

1 Cp

2 Tc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	U		379	1000	1	04/13/2020 10:14	WG1459605
Fluoride	U		64.0	150	1	04/13/2020 10:14	WG1459605
Sulfate	U		594	5000	1	04/13/2020 10:14	WG1459605

3 Ss

4 Cn

5 Sr

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	U		25.4	200	1	04/13/2020 15:29	WG1459652
Calcium	U		389	1000	1	04/13/2020 15:29	WG1459652

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3518147-1 04/12/20 01:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1207737-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1207737-09 04/12/20 01:28 • (DUP) R3518147-3 04/12/20 01:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	397000	391000	1	1.52		5

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3518147-2 04/12/20 01:28

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8730000	99.2	85.0-115	



Method Blank (MB)

(MB) R3518490-1 04/13/20 12:03

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

1 Cp

2 Tc

3 Ss

4 Cn

L1207737-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1207737-02 04/13/20 12:03 • (DUP) R3518490-3 04/13/20 12:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	410000	431000	1	4.99		5

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3518490-2 04/13/20 12:03

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8310000	94.4	85.0-115	

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3518487-1 04/13/20 15:57

Analyte	MB Result ug/l	<u>MB Qualifier</u>	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

Laboratory Control Sample (LCS)

(LCS) R3518487-2 04/13/20 15:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Dissolved Solids	8800000	8620000	98.0	85.0-115	

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3518485-1 04/13/20 12:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		2820	10000

¹ Cp

² Tc

³ Ss

⁴ Cn

L1207737-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1207737-14 04/13/20 12:51 • (DUP) R3518485-3 04/13/20 12:51

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	4140000	4210000	1	1.68		5

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3518485-2 04/13/20 12:51

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800000	8640000	98.2	85.0-115	

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3518056-1 04/12/20 23:10

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1207319-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1207319-01 04/13/20 04:35 • (DUP) R3518056-3 04/13/20 04:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	6190	6410	1	3.46		15
Fluoride	695	698	1	0.373		15
Sulfate	ND	2990	1	0.000		15

L1207727-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1207727-12 04/13/20 10:14 • (DUP) R3518056-6 04/13/20 10:27

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Chloride	U	0.000	1	0.000		15
Fluoride	U	0.000	1	0.000		15
Sulfate	U	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3518056-2 04/12/20 23:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Chloride	40000	39800	99.6	80.0-120	
Fluoride	8000	8290	104	80.0-120	
Sulfate	40000	40600	102	80.0-120	



L1207319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1207319-01 04/13/20 04:35 • (MS) R3518056-4 04/13/20 05:01 • (MSD) R3518056-5 04/13/20 05:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6190	58800	58000	105	104	1	80.0-120			1.39	15
Fluoride	5000	695	6080	5990	108	106	1	80.0-120			1.50	15
Sulfate	50000	ND	55900	54700	106	104	1	80.0-120			2.21	15

L1207727-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1207727-12 04/13/20 10:14 • (MS) R3518056-7 04/13/20 10:40

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	U	51500	103	1	80.0-120	
Fluoride	5000	U	5170	103	1	80.0-120	
Sulfate	50000	U	52100	104	1	80.0-120	

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Method Blank (MB)

(MB) R3518294-1 04/13/20 14:39

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		25.4	200
Calcium	U		389	1000

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Laboratory Control Sample (LCS)

(LCS) R3518294-2 04/13/20 14:41

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	888	88.8	80.0-120	
Calcium	10000	9020	90.2	80.0-120	

L1207737-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1207737-01 04/13/20 14:44 • (MS) R3518294-4 04/13/20 14:49 • (MSD) R3518294-5 04/13/20 14:52

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	66.5	1040	1080	97.2	101	1	75.0-125			3.45	20
Calcium	10000	103000	111000	112000	76.8	80.5	1	75.0-125			0.327	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
---	---



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

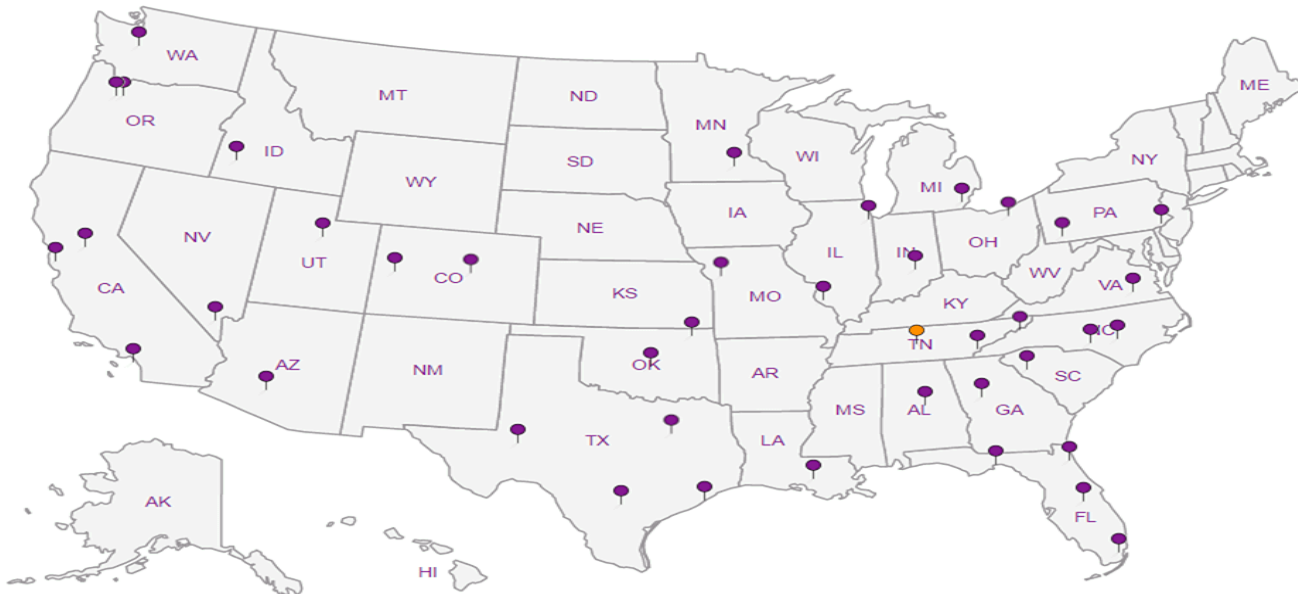
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Pres
Chk *ll*

Analysis / Container / Preservative

Chain of Custody Page 1 of 2



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Dana Derrington

Email To: dld@ftn-assoc.com; mmv@ftn-assoc.com

Project
Description: **Plum Point Energy Station**

City/State
Collected: *Osceola AR*

Please Circle:
PT MT CT ET

Phone: **501-920-9642**
Fax:

Client Project #
14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Collected by (print):
M. Clayton

Site/Facility ID #

P.O. #
2020-00128

Collected by (signature):
M. Clayton

Rush? (Lab MUST Be Notified)

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote

Date Results Needed

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron	Calcium	250mlHDPE-HNO3	CI, F, SO4, TDS	250mlHDPE-NoPres
MW-101	<i>Grab</i>	GW		<i>4/8/20</i>	<i>1305</i>	2	X	X			
MW-102		GW		<i>4/7/20</i>	<i>1510</i>	2	X	X			
MW-103		GW		<i>4/8/20</i>	<i>1105</i>	2	X	X			
MW-108		GW		<i>4/6/20</i>	<i>1615</i>	2	X	X			
MW-113		GW		<i>4/6/20</i>	<i>1505</i>	2	X	X			
MW-115		GW		<i>4/6/20</i>	<i>1355</i>	2	X	X			
MW-116		GW		<i>4/8/20</i>	<i>1405</i>	2	X	X			
MW-117		GW		<i>4/7/20</i>	<i>1620</i>	2	X	X			
MW-118		GW		<i>4/8/20</i>	<i>955</i>	2	X	X			
MW-119		GW		<i>4/8/20</i>	<i>1205</i>	2	X	X			

SDG # *1267727*

G171

Acctnum: **NAESOAR**

Template: **T131993**

Prelogin: **P763874**

PM: **134 - Mark W. Beasley**

PB:

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:

UPS FedEx Courier

Tracking #

pH _____ Temp _____

Flow _____ Other _____

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: *40.4* °C
2.1 to *2.1* Bottles Received: *24*

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: *4/10/20* Time: *8:30*

Hold:

Condition:
NCF / *OK*

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Report to:
Dana Derrington

Email To: dld@ftn-assoc.com; mmv@ftn-assoc.com

Project
Description: **Plum Point Energy Station**

City/State
Collected: **OSCEOLA AR**

Please Circle:
PT MT CT ET

Phone: **501-920-9642**
Fax:

Client Project #
14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Collected by (print):
Michael Clayton

Site/Facility ID #

P.O. #
2020-00128

Collected by (signature):
Michael Clayton
Immediately
Packed on Ice N Y

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Quote #
Date Results Needed

Pres
Chk *CC*

Analysis / Container / Preservative

Chain of Custody Page **2** of **2**



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



SDG # **1207707**
Table #
Acctnum: **NAESOAR**
Template: **T131993**
Prelogin: **P763874**
PM: **134 - Mark W. Beasley**
PB:
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron	Calcium	250mlHDPE-HNO3	CI, F, SO4, TDS	250mlHDPE-NoPres
MW-117 DUP	Grab	GW		4/7/20	1625	2	X	X			
EPA EB-1	✓	GW		4/8/20	1505	2	X	X			
		GW				2	X	X			
		GW				2	X	X			
		GW				2	X	X			

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other _____

Remarks:

Samples returned via:
 UPS FedEx Courier _____

Tracking #

pH _____ Temp _____
Flow _____ Other _____

Sample Receipt Checklist
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

Relinquished by: (Signature)
Michael Clayton

Date: **4/9/20**
Time: **1800**

Received by: (Signature)

Trip Blank Received: Yes No
HCL/ MeOH
TBR

Relinquished by: (Signature)

Date: _____
Time: _____

Received by: (Signature)

Temp: **16.0** °C
2.1 ± 0.21 Bottles Received: **24**

Relinquished by: (Signature)

Date: _____
Time: _____

Received for lab by: (Signature)

Date: **4/10/20** Time: **8:30**

Hold:

Condition:
NCF / *OK*

April 23, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Plum Point Services Co., LLC

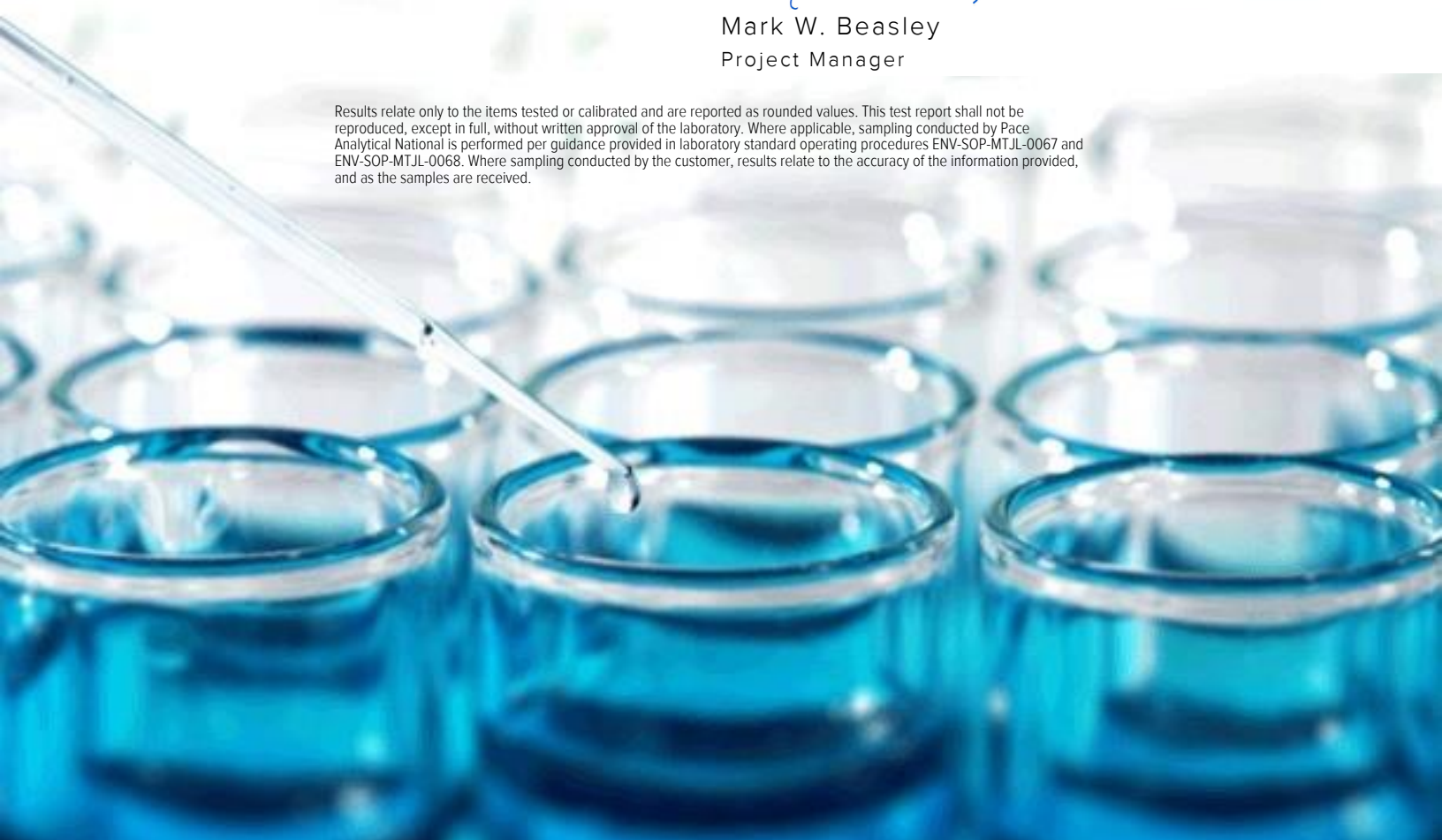
Sample Delivery Group: L1210764
Samples Received: 04/10/2020
Project Number: 14590-2275-001
Description: Plum Point Energy Station

Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	²Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³Ss
MW-117 L1210764-01	5	
Qc: Quality Control Summary	6	⁴Cn
Metals (ICP) by Method 6010B	6	⁵Sr
Gl: Glossary of Terms	7	
Al: Accreditations & Locations	8	⁶Qc
Sc: Sample Chain of Custody	9	⁷Gl
		⁸Al
		⁹Sc

SAMPLE SUMMARY



MW-117 L1210764-01 GW

Collected by: Michael Clayton
Collected date/time: 04/08/20 16:20
Received date/time: 04/10/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1464772	1	04/22/20 17:10	04/23/20 09:48	TRB	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	98100		389	1000	1	04/23/2020 09:48	WG1464772

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3521303-1 04/23/20 09:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Calcium	U		389	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

Laboratory Control Sample (LCS)

(LCS) R3521303-2 04/23/20 09:14

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Calcium	10000	9660	96.6	80.0-120	

⁶ Qc

L1210809-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1210809-01 04/23/20 09:17 • (MS) R3521303-4 04/23/20 09:22 • (MSD) R3521303-5 04/23/20 09:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000		48100	47900	99.0	97.1	1	75.0-125			0.410	20

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

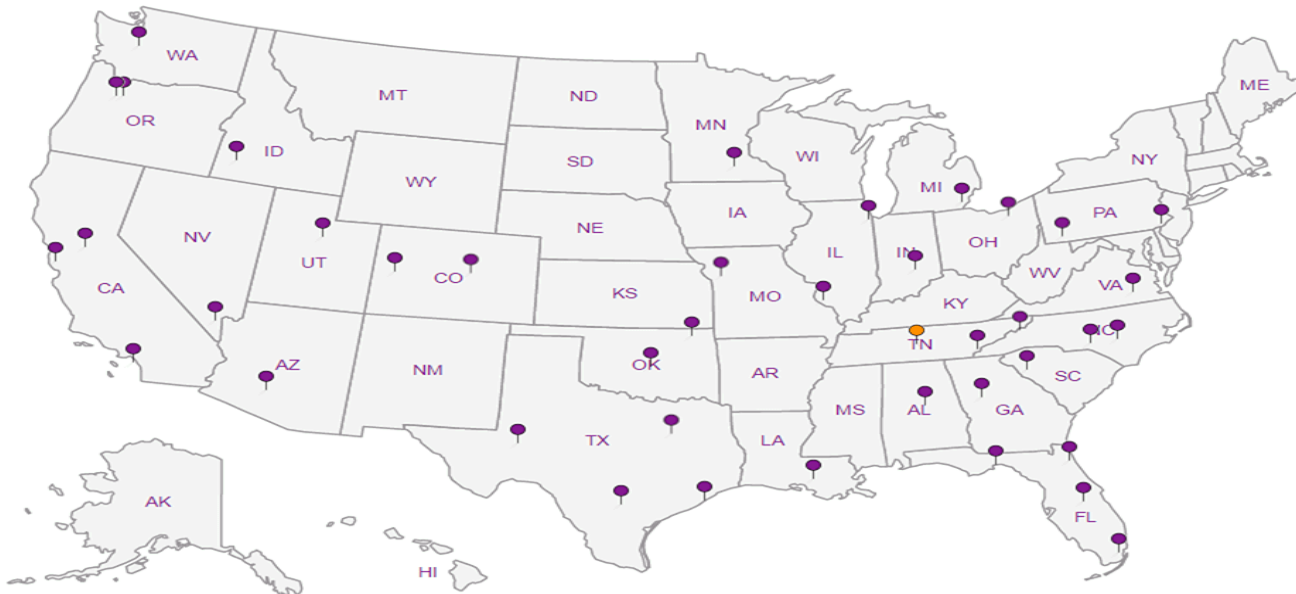
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC
 2739 SCR 623
 Osceola, AR 72370

Billing Information:
 Accounts Payable
 P.O. Box 567
 Osceola, AR 72370

Report to:
Dana Derrington

Email To: dld@ftn-assoc.com;mmv@ftn-assoc.com

Project Description: **Plum Point Energy Station**

City/State Collected: **OSCEOLA AR**

Please Circle: PT MT CT ET

Phone: 501-920-9642
 Fax:

Client Project # **14590-2275-001**

Lab Project # **NAESOAR-PLUMPOINT**

Collected by (print): *[Signature]*

Site/Facility ID #

P.O. # **2020-00128**

Collected by (signature): *[Signature]*

Rush? (Lab MUST Be Notified)
 Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed

Packed on Ice N Y

Pres Chk *ll*

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Face Analytical®
 National Center for Testing & Innovation

12065 Lebanon Rd
 Mount Juliet, TN 37122
 Phone: 615-758-5858
 Phone: 800-767-5859
 Fax: 615-758-5859

SDG # **1267729**

G171
1/210764

Acctnum: **NAESOAR**

Template: **T131993**

Prelogin: **P763874**

PM: **134 - Mark W. Beasley**

PB:

Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Boron	Calcium	250mlHDPE-HNO3	CI, F, SO4	TDS	250mlHDPE-NoPres
MW-101	GRAB	GW		4/8/20	1305	2	X	X				
MW-102		GW		4/7/20	1510	2	X	X				
MW-103		GW		4/8/20	1105	2	X	X				
MW-108		GW		4/6/20	1615	2	X	X				
MW-113		GW		4/6/20	1505	2	X	X				
MW-115		GW		4/6/20	1355	2	X	X				
MW-116		GW		4/8/20	1405	2	X	X				
MW-117		GW		4/7/20	1620	2	X	X				
MW-118		GW		4/8/20	955	2	X	X				
MW-119		GW		4/8/20	1205	2	X	X				

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via:
 UPS FedEx Courier

Tracking #

Relinquished by: (Signature) *[Signature]* Date: 4/9/20 Time: 1800

Received by: (Signature) Trip Blank Received: Yes (No) HCL / MeOH TBR

Temp: *21.0* °C Bottles Received: *24*

Relinquished by: (Signature) Date: 4/10/20 Time: 8:30

Received for lab by: (Signature) *[Signature]* Date: 4/10/20 Time: 8:30

Hold: Condition: NCF / OK

Sample Receipt Checklist:
 COC Seal Present/Intact: Y N
 COC Signed/Accurate: Y N
 Bottles arrive intact: Y N
 Correct bottles used: Y N
 Sufficient volume sent: Y N
 If Applicable
 VOA Zero Headspace: Y N
 Preservation Correct/Checked: Y N
 RAD Screen <0.5 mR/hr: Y N

4/21/20

-01



Andy Vann

From: Mark Beasley
Sent: Tuesday, April 21, 2020 2:30 PM
To: Project Service; Sample Storage
Subject: L1207727 *NAESOAR*

Relog L1207727-08 for CAICP. Log as R5 due 4/28.

Thanks
Mark

From: hlf@ftn-assoc.com [mailto:hlf@ftn-assoc.com]
Sent: Tuesday, April 21, 2020 1:16 PM
To: Mark Beasley
Cc: Dana Derrington
Subject: Lab Re-Runs for Plum Point 1H2020 Monitoring Period (L1207727)

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Mark,

Long time, no talk. I hope you're doing well.

Could you ask the lab to verify the result for calcium at MW-117, and if correct, rerun the sample for verification purposes?

Thank you!

Heather Ferguson



FTN Associates, Ltd.
3 Innwood Circle, Suite 220
Little Rock, AR 72211
P: (501) 225-7779
F: (501) 225-6738
<https://www.ftn-assoc.com>

Plum Point Services Co., LLC

Sample Delivery Group: L1232030
Samples Received: 06/23/2020
Project Number: R14590-2275-001
Description: Plum Point Energy Station

Report To: Dana Derrington
2739 SCR 623
Osceola, AR 72370

Entire Report Reviewed By:



Jason Romer
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.





Cp: Cover Page	1	¹Cp
Tc: Table of Contents	2	²Tc
Ss: Sample Summary	3	³Ss
Cn: Case Narrative	4	⁴Cn
Sr: Sample Results	5	⁵Sr
MW-117 L1232030-01	5	
MW-117 DUP L1232030-02	6	
EPA EB-1 L1232030-03	7	
Qc: Quality Control Summary	8	⁶Qc
Metals (ICP) by Method 6010B	8	
Gl: Glossary of Terms	9	⁷Gl
Al: Accreditations & Locations	10	⁸Al
Sc: Sample Chain of Custody	11	⁹Sc

SAMPLE SUMMARY



MW-117 L1232030-01 GW

Collected by: Michael Clayton
 Collected date/time: 06/22/20 11:00
 Received date/time: 06/23/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1499792	1	06/27/20 10:36	06/27/20 15:21	EL	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

MW-117 DUP L1232030-02 GW

Collected by: Michael Clayton
 Collected date/time: 06/22/20 11:05
 Received date/time: 06/23/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1499792	1	06/27/20 10:36	06/27/20 15:29	EL	Mt. Juliet, TN

EPA EB-1 L1232030-03 GW

Collected by: Michael Clayton
 Collected date/time: 06/22/20 11:25
 Received date/time: 06/23/20 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1499792	1	06/27/20 10:36	06/27/20 15:32	EL	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	90100		389	1000	1	06/27/2020 15:21	WG1499792

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	90300		389	1000	1	06/27/2020 15:29	WG1499792

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	U		389	1000	1	06/27/2020 15:32	WG1499792

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3543926-1 06/27/20 14:20

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Calcium	U		389	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3543926-2 06/27/20 14:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Calcium	10000	9460	94.6	80.0-120	

⁷ Gl

⁸ Al

⁹ Sc

L1232023-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1232023-03 06/27/20 14:26 • (MS) R3543926-4 06/27/20 14:31 • (MSD) R3543926-5 06/27/20 14:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Calcium	10000	179000	212000	212000	330	330	1	75.0-125	<u>V</u>	<u>V</u>	0.00283	20



Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

- 1 Cp
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Qualifier Description

V	The sample concentration is too high to evaluate accurate spike recoveries.
---	---



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
 * Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

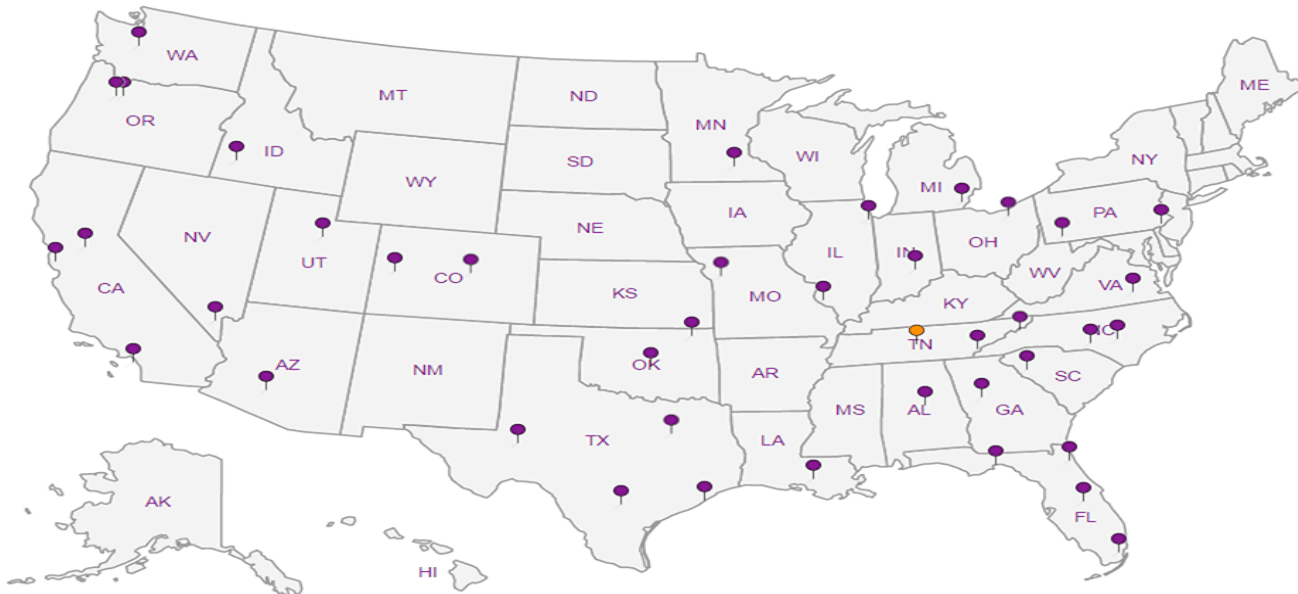
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA-Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Plum Point Services Co., LLC

2739 SCR 623
Osceola, AR 72370

Billing Information:

Accounts Payable
P.O. Box 567
Osceola, AR 72370

Pres
Chk

Analysis / Container / Preservative



12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859



Report to:
Dana Derrington

Email To: dld@ftn-assoc.com;mmv@ftn-assoc.com;hlf@ftn-assoc.com;hlf@ftn-

Project Description:
Plum Point Energy Station

City/State
Collected:

Please Circle:
PT MT CT ET

Phone: **501-920-9642**

Client Project #
R14590-2275-001

Lab Project #
NAESOAR-PLUMPOINT

Collected by (print):

Site/Facility ID #

P.O. #
2020-00128

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

No.
of
Cnts

Immediately
Packed on Ice N ___ Y ___

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
MW-117	Grab	GW		6/22/20	1100	1 X
MW-117 DUP		GW			1105	1 X
EPA EB-1		GW			1125	1 X
		GW				
		GW				

Total Ca 250mlHDPE-HNO3

SDG # **127 201**

Tablet **A069**

Acctnum: **NAESOAR**

Template: **T169486**

Prelogin: **P780601**

PM: **134 - Mark W. Beasley**

PB: **6-16-2020**

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

pH ___ Temp ___

Flow ___ Other ___

Samples returned via:
___ UPS ___ FedEx ___ Courier

Tracking #

1922 0798 5012

Sample Receipt Checklist

COC Seal Present/Intact: ___ NP Y ___ N
COC Signed/Accurate: ___ Y ___ N
Bottles arrive intact: ___ Y ___ N
Correct bottles used: ___ Y ___ N
Sufficient volume sent: ___ Y ___ N
If Applicable
VOA Zero Headspace: ___ Y ___ N
Preservation Correct/Checked: ___ Y ___ N
RAD Screen <0.5 mR/hr: ___ Y ___ N

Relinquished by: (Signature)

Date: **6/22/20**

Time: **1500**

Received by: (Signature)

Trip Blank Received: Yes No ___
HCL/MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp °C **3.5-2=3.3**
Bottles Received: **3**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: **6/23/20** Time: **8:45**

Hold:

Condition:
NCF OK