GEI Consultants

July 17, 2019

Geotechnical
Environmental
Water Resources
Ecological

Mr. David Szymanski
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New York State Department of Environmental Conservation
Division of Environmental Remediation
270 Michigan Avenue – 3rd Floor
Buffalo, New York 14203

Subject: Groundwater and Surface Water Monitoring Results
First Semiannual Event - April 2019
Mineral Springs Road MGP Site (NYSDEC Site #V00195)

Dear Mr. Szymanski:

On behalf of National Fuel Gas Distribution Corporation (NFG), please find enclosed results of the groundwater and surface water sampling event completed on April 17 and 18, 2019 at the Mineral Springs Road Former Manufactured Gas Plant (MGP) Site.

The work at the Mineral Springs Site is being conducted under a New York State Department of Environmental Conservation (NYSDEC) Voluntary Cleanup Agreement (number B9-0538-98-08) as described in the Remedial Design, dated February 10, 1999, and the Final Engineering Report, Volume II – Operations and Maintenance (O&M) Plan, dated May 2002.

Please contact Mr. Brad Walker of NFG at 716-857-7247 if you have any questions.

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Enclosure

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Consulting
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2019 First Semiannual Groundwater/Surfacewater Quality Monitoring Report

Mineral Springs Road Former MGP Site (NYSDEC #V00195)
West Seneca, New York

Submitted to:
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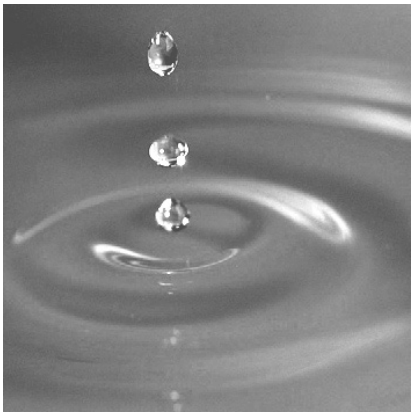
Project 1801042



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1. INTRODUCTION

This report presents a summary of groundwater and surface water quality monitoring results for the 2019 first semiannual monitoring event at the National Fuel Gas Mineral Springs facility at 365 Mineral Springs Road in West Seneca, New York (Site). The site is a former manufactured gas plant (MGP) and implements ongoing operations and maintenance which includes groundwater and surface water quality monitoring.

1.1 Background

The Site is currently an active National Fuel Gas service center consisting of approximately 81 acres and includes seven active buildings, numerous parking areas, pipeline equipment and staging areas, and undeveloped areas. The site location and site layout are shown in Figures 1 and 2, respectively.

National Fuel completed remedial construction which included source removal and containment in 2001 under a Voluntary Cleanup Agreement (VCA) No. B9-0538-98-08 between National Fuel and the New York State Department of Environmental Conservation (NYSDEC). Remedial and engineering control features include perimeter fencing, six asphalt caps, a clay cap, an HDPE cap, and a capped drainage feature consisting of both clay and HDPE caps. National Fuel performs operations and maintenance (O&M) activities for the remedy in accordance with the Final Engineering Report, Volume II – Operations and Maintenance (O&M) Plan, dated May 2002 (O&M Plan). The O&M Plan specifies groundwater and surface water quality monitoring conducted on a semiannual basis. An assessment of institutional and engineering controls is summarized each year in a Site Management Periodic Review Report (PRR). The most recent PRR was submitted to the NYSDEC on October 16, 2018.

1.2 Site Conditions

The Site is relatively flat lying. An unnamed surface water drainage feature, designated as a Class D stream, is situated along the southern site boundary and flows in a westward direction. The stratigraphy of the site in order of occurrence is:

- soil fill (4 to 8 feet in thickness)
- approximately 10 feet of a laterally extensive clay (referred to as the upper confining clay layer {UCL})
- silt, sand, and gravel

- a lower confining clay layer (LCL), and bedrock.

Overburden groundwater is typically encountered 5 to 12 feet below ground surface and fluctuates approximately 2 feet seasonally. Overburden groundwater flow is generally to the north and northwest toward Mineral Springs Road, Calais Street, and the Buffalo River. Average overburden groundwater velocity across the site was calculated to be approximately 0.06 feet per day (22 feet per year).

2. MONITORING NETWORK AND SAMPLING METHODS

Groundwater monitoring well and surface water sampling locations are shown on Figure 2. The groundwater monitoring wells were installed during and following completion of remedial construction and are screened to monitor groundwater flowing in the lower UCL and the silt, sand, and gravel layer. The O&M Plan specifies groundwater sample collection and analysis from 13 on-site and off-site monitoring wells. In addition, the determination for accumulated DNAPL in Recovery Well #1 (RTW-1) and purging of accumulated liquid, if present, is included in the groundwater monitoring program. Consistent with the O&M Plan, groundwater samples were collected using low-flow sampling methods with peristaltic pumps.

Surface water sample locations identified in the O&M Plan include SW-01 and SW-02 situated upstream and downstream of the facility. Three additional surface water sampling locations (SW-03, SW-04, and SW-05) were added to the monitoring program to assess the distribution of possible MGP-related constituents of concern (COCs) in surface water (total and free cyanide).

Groundwater and surface water samples for the 2019 Second Semiannual monitoring event were collected on April 17 and 18, 2018 by a GEI sampling team. Monitoring was consistent with sampling procedures described in the O&M Plan. Table 1 summarizes sampling location, sample analysis, and Quality Control sample analysis, and current reference elevations. A synoptic round of water levels was measured in monitoring wells on April 17, 2019 and water levels were recorded prior to purging and sampling. Groundwater elevations are summarized in Table 2. Groundwater elevations were approximately 2 feet higher during the April 2019 sampling event when compared to the 2018 fall sampling event and most groundwater elevations were higher this spring monitoring event than groundwater elevations determined during the spring of 2018.

Field measured parameters were taken periodically during purging and include temperature, pH, Oxidation-Reduction Potential (ORP), electrical conductance, and turbidity. A summary of final field measured parameters is included in Table 3. All samples were placed in coolers and iced during same day transport under chain-of-custody to the analytical laboratory (Test America) located in Amherst, New York. Final laboratory analytical data reports were made available to GEI on June 11, 2019.

3. LABORATORY METHODS AND QUALITY CONTROL

3.1 Laboratory Methods

Samples were analyzed for BTEX volatile organic compounds (VOCs) by SW-846 method 8260C, polycyclic aromatic hydrocarbon (PAH) semi-volatile organic compounds (SVOCs) by SW-846 Method 8270D, total cyanide by SW-846 Method 9012B, free cyanide by SW-846 Method 9016, total dissolved solids (TDS) by Method SM2540C, and total suspended solids (TSS) by Standard Methods. Except for free cyanide, water samples were analyzed by Test America Laboratories, Inc. (Test America) of Amherst, New York. Free cyanide analyses were performed by Test America of Edison, New Jersey. Each laboratory maintains NYSDOH ELAP certifications.

3.2 Laboratory Quality Control

The laboratory data package (Level 2) is included in Appendix A. A Level 4 data package was also provided and was reviewed during GEI data validation. Overall quality assurance and quality control (QA/QC) measures were taken to ensure the reliability of the data generated during the sampling event. These measures include the submittal of trip blanks and the collection of a blind duplicate sample. Equipment blanks were not required since dedicated sampling equipment was used.

The specific methodologies employed in obtaining the analytical results refer to the following USEPA references.

- "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" (SW-846), Third Edition, September 1994, USEPA Office of Solid Waste.
- 40CFR Part 136 "Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act", October 26, 1984 USEPA.

The data validation was performed on the Level 4 data package based on the Standard Operating Procedure (SOP) HW-33 (Revision 3) Low/Medium Volatile Data Validation (March 2013), SOP HW-35 (Revision 2) Semivolatile Data Validation (March 2013), and SOP 2c (Revision 15), SOP for the Evaluation of Cyanide for the Contract Laboratory Program (December 2012), modified for the SW-846 methodologies utilized.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Internal Standard Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

Blind duplicate samples were collected at sampling location well MW-23 and submitted for analyses with the sample delivery group to assess laboratory precision. Laboratory accuracy was assessed through analysis of surrogate spike recoveries.

A data usability review is provided in Appendix B. In general, the data appear usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers. No deviations from analytic protocol that affected the acceptability of the results were reported by the laboratories. Where laboratory quality control results necessitated a need for data qualification, the laboratory flagged the analytical result with an appropriate data qualifier. All non-detect results for toluene and total xylenes in sample MW-19 were rejected (R) due to holding time exceedance. No other results were rejected.

4. EVALUATION OF MONITORING RESULTS

The groundwater analytical results for the April 2019 sampling event are summarized in Tables 4A and 4B. Surface water sample results are summarized in Table 5. Results for the monitoring event are compared to the NYSDEC Technical Operational and Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998) (herein referred to as groundwater standards or water quality comparison criteria). Sampling results are discussed below.

4.1 Groundwater Elevations and Flow

A potentiometric surface map of groundwater elevations for the upper water-bearing zone at the site is provided on Figure 3. The groundwater flow direction occurs predominantly to the north and northwest. The surface water elevations in the Class D stream at SW-02 and SW-01 was higher than heads in nearby wells MW-11A and MW-16, respectively indicating "losing stream conditions" where groundwater is recharged by surface water infiltrating at the base grade of the stream.

4.2 Constituents Detected in Groundwater

Monitoring well locations provide groundwater quality data for on-site areas near former MGP residual remediation areas and near the site perimeter at both on-site and off-site monitoring locations. Groundwater quality in each of these areas is described below.

On-Site Areas

Monitoring wells MW-07, MW-10, MW-11A, and MW-19 assess on-site groundwater quality downgradient of subsurface soils impacted with hydrocarbon MGP residuals. BTEX compounds were not detected at MW-10 or MW-11A. BTEX compounds were detected above the NYSDEC Groundwater Standards in MW-07and MW-19. BTEX compounds were detected at their lowest concentrations in the past 5 years at MW-07 and were consistent with historic detections at MW-19.

PAH compounds were detected in well MW-07 (naphthalene and acenaphthene) and well MW-19 (naphthalene) at concentrations above water quality comparison criteria. Laboratory dilutions were required for naphthalene analysis due to part per million level detected concentrations resulting in elevated reporting limits for other PAHs in these two samples.

Well MW-11A includes analysis for total and free cyanide, plus analysis for TDS and TSS in support of the assessment of past cyanide detections in surface water. Total cyanide was

detected at 330 µg/L which is above the NYS groundwater standard of 200 µg/L. The result is higher than the three prior events but a limited database exists for the well as this was only the fourth sampling event for the well. Free cyanide was also detected in the sample (19.5 µg/L). A groundwater standard does not exist. TDS and TSS concentrations in well MW-11A were 653 mg/L and 26.8 mg/L, respectively. These concentrations were about 15% lower than the prior event. Interpretation of these concentrations is described with surface water sample results in Section 4.3.

Monitoring wells MW-12 and MW-16 assess on-site groundwater quality at locations of capped areas with known subsurface deposits of MGP purifier box residuals. Groundwater samples from these two wells were analyzed for total and free cyanide. Total cyanide concentrations were 1,000 µg/L at MW-12 and 3,100 µg/L at MW-16, each is above water quality comparison criteria. The concentration detected during this event at MW-12 was high than the prior event, but within the historic range of detected concentrations. The concentration at MW-16 was higher than prior sampling events and concentrations exhibit an increasing trend. Free cyanide concentrations were 34.8 µg/L at MW-12 and as 149 µg/L at MW-16 (a NYSDEC Groundwater Standard for free cyanide does not exist). Concentrations are elevated compared to prior concentrations. An assessment of the data trends will be discussed in the 2019 Periodic Review Report (PRR) following the fall sampling event.

Site Perimeter

Monitoring well MW-17 assesses upgradient groundwater quality and wells MW-13, MW-14, MW-20, MW-21, MW-22, and MW-23 monitor downgradient water quality with MW-20 and MW-21 monitoring cyanide concentrations at off-site locations.

BTEX was not detected in the wells tested and trace level concentrations of PAHs were only detected in well MW-23. The detected concentrations were similar to concentrations detected in 2018.

Total cyanide was detected at a concentration of 160 J µg/L in upgradient well MW-17 and is considered representative of background. Total cyanide was detected in downgradient wells MW-14, MW-20, MW-21, MW-22, and MW-23 at concentrations above water quality comparison criteria (200 µg/L) at concentrations ranging from 320 µg/L to 1300 µg/L. The total cyanide concentrations detected in wells MW-21, MW-22, and MW-23 were similar to historic detections. Total cyanide concentrations in monitoring wells MW-14 and MW-20 were somewhat higher than prior detections.

Free cyanide was not detected in downgradient perimeter wells MW13 and MW-21. Free cyanide was detected in upgradient well MW-17 at 3.3 J. In the remaining wells, free cyanide concentrations ranged from 5.9 µg/L (MW-14) and 1,300 µg/L (MW-20). A distinct correlation between detected total cyanide concentrations and free cyanide concentrations

was not observed. An assessment of the data trends will be discussed in the 2019 Periodic Review Report (PRR) following the fall sampling event.

4.3 Constituents Detected in Surface Water

Two surface water samples (SW-01 and SW-02) were collected from the NYSDEC Class D Stream flowing along the south side of the site. These surface water sampling locations monitor the effectiveness of the containment engineering controls of the Eastern Drainage Ditch Cap and monitor the concentrations of constituents of concern in surface water downstream of the Site. The collected samples were analyzed for BTEX and PAH compounds, as well as total and free cyanide. Samples were also collected at each surface water sampling location and analyzed for total dissolved solids (TDS) and total suspended solids (TSS) analysis to evaluate a potential correlation between TDS/TSS and total/free cyanide results. Surface water samples were also collected from supplemental sampling locations (SW-03, SW-04, and SW-05) and analyzed for total and free cyanide to assess distribution in areas upstream from SW-02.

BTEX and PAH compounds were either not detected or detected at trace level concentrations below NYSDEC Ambient Surface Water Quality Standards for Class D Streams (comparison criteria) in the surface water samples.

Total and free cyanide concentrations were below comparison criteria in each of the surface water samples and concentrations were lower or similar to recent sampling events. Total and free cyanide was not detected in downstream surface water sample SW-01.

Unlike the prior sampling event, the TDS concentration was higher in the downstream surface water sample than the upstream sample. Similar to last the conclusion for the August 2018 sampling event, a correlation between detected cyanide concentration and TDS/TSS levels was not identified.

4.4 DNAPL Recovery Test Well

On April 17, 2018, the Recovery System at RTW-1 was gauged using a threaded steel rod to assess whether DNAPL had accumulated since the August 2018 sampling event. No visual staining was observed on the rod bottom. Rigid tubing was lowered to the base of the well and pumped using peristaltic methods. Approximately two liters of water were evacuated. The water contained only trace DNAPL in the form of “blebs”, visually estimated to be less than 1% of total volume. Based on the testing performed, DNAPL accumulation was not identified during April 2019 monitoring event.

5. Summary

A summary of April 2019 field testing and water quality monitoring in on-site remediated areas, perimeter areas and on-site surface water is provided below:

Groundwater:

- Groundwater elevations were approximately 2 feet higher during the April 2019 sampling event when compared to the 2018 fall sampling event and most groundwater elevations were higher this spring than elevations determined during the spring of 2018.

On-Site Areas:

- BTEX compounds were detected above comparison criteria in wells MW-07 and MW-19. The detected concentrations were consistent with historical analytical data.

- Low concentrations of PAHs were detected above water quality comparison criteria in MW-7 and MW-19. The detected concentrations were consistent with historical analytical data.

- Total cyanide concentrations were higher in monitoring wells MW-11A, MW-12, and MW-16 when compared with the August 2018 sampling event. Monitoring well MW-11A has only been analyzed for total cyanide since August 2017 and a long-term concentration trend cannot yet be evaluated. The total cyanide concentration at MW-16 (3,100 µg/L) is above the historical range of detected concentrations as is free cyanide (149 µg/L). Long term concentration trends will continue to be assessed.

Perimeter Areas:

- BTEX compounds were not detected in perimeter wells tested. Trace level concentrations of PAH compounds were detected above water quality comparison criteria in well MW-23. PAHs were not detected in other wells tested.

- Total cyanide was detected in downgradient wells MW-14, MW-20, MW-21, MW-22, and MW-23 at concentrations above water quality comparison criteria (200 µg/L) ranging from 320 µg/L to 1,300 µg/L. Total cyanide concentrations in monitoring wells MW-14 and MW-20 were higher in April 2019 than during prior events.

- Free cyanide was detected at upgradient well MW-17 and five of the six downgradient perimeter wells tested. Free cyanide concentrations did not proportionately correlate with total cyanide concentrations this event.

Surface Water:

- Surface water elevations were higher than groundwater elevations indicating "losing stream conditions."

- BTEX and PAH compounds were not detected in surface water samples.

- Total and free cyanide were not detected in downstream surface water sample SW-01.

DNAPL accumulation was not identified in RTW-1 during the April 2019 monitoring event.

A discussion of historical concentration trends will be presented with the 2019 PRR. No immediate response actions appear to be warranted and modifications to the sampling program are not currently recommended.

Tables

Table 1. 2019 First Semiannual Monitoring Water Sampling Summary
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

Location	Cyanide, Total USEPA SW846 9014	Cyanide, Free USEPA SW846 9016	BTEX USEPA SW846 8260C	PAHs USEPA SW846 8270D	TDS/TSS SM 2540C/2540D	Specific Conductivity Field Measurement	Water Elevation	Benchmark Elevation (ft. MSL, top of PVC casing)
Upgradient Site Perimeter								
MW-17	x	x	x	x		x	x	587.28
Downgradient Site Perimeter								
MW-13	x	x	x	x		x	x	591.85
MW-14	x	x				x	x	589.53
MW-15							x	590.93
MW-20	x	x				x	x	587.06
MW-21	x	x				x	x	587.84
MW-22	x	x				x	x	592.50
MW-23	x	x	x	x		x	x	589.28
Onsite Purifier Residuals Impacted Areas								
MW-12	x	x				x	x	591.40
MW-16	x	x				x	x	588.99
Onsite Hydrocarbon Impacted Areas								
MW-07			x	x		x	x	587.01
MW-10			x	x		x	x	587.61
MW-11A [2]	x [2]	x [2]	x	x	x [2]	x	x	589.78
MW-19			x	x		x	x	589.83
Onsite Surface Water								
SW-01 [2]	x	x	x	x	x [2]	x [2]	x	top of headwall = 587.0
SW-02 [2]	x	x	x	x	x [2]	x [2]	x [2]	MW-11A ref. pt
SW-03 [2]	x [2]	x [2]			x [2]	x [2]		
SW-04 [2]	x [2]	x [2]			x [2]	x [2]		
SW-05 [2]	x [2]	x [2]			x [2]	x [2]		
QA/QC Samples (frequency)								
Trip Blank			x					(one per shipment)
Field Duplicate	x	x	x	x				(one per event)
Equipment Blank	x	x	x	x				(one per event)
DNAPL Recovery								
RTW-1	No Sample Collection							(purge well of accumulated DNAPL)
Total	17	17	12	11	12	18	16	
Container, Preservative	250 mL plastic, NaOH	250 mL plastic amber, NaOH	40 mL VOA vial, HCl (x3)	250 mL glass amber, NP (x2)	500 mL plastic, unpreserved			

Notes:

1. Elevations are from the 2007 survey, except for MW-20, which was resurveyed in August 2009 due to a repair.
2. Supplemental sampling at this location was conducted in August 2017, April 2018, August 2018 and April 2019.

Table 2. Groundwater and Surface Water Elevations
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

Well ID	TOR Elevation[(1)]	April 17, 2018 (FIRST SEMIANNUAL 2018)		August 15, 2018 (SECOND SEMIANNUAL 2018)		April 17, 2019 (FIRST SEMIANNUAL 2019)	
		Depth	Elevation	Depth	Elevation	Depth	Elevation
MW-07	587.01	4.80	582.21	7.15	579.86	4.48	582.53
MW-10	587.61	6.40	581.21	7.64	579.97	6.28	581.33
MW-11A	589.78	8.15	581.63	9.02	580.76	6.43	583.35
MW-12	591.40	10.06	581.34	11.65	579.75	11.63	579.77
MW-13	591.85	10.56	581.29	13.54	578.31	11.40	580.45
MW-14	589.53	10.70	578.83	11.93	577.60	10.48	579.05
MW-15	590.93	10.40	580.53	11.60	579.33	9.37	581.56
MW-16	588.99	8.70	580.29	9.65	579.34	5.80	583.19
MW-17	587.28	3.98	583.30	6.69	580.59	3.98	583.30
MW-19	589.83	7.58	582.25	9.80	580.03	7.73	582.10
MW-20	587.06	6.38	580.68	10.16	576.90	7.14	579.92
MW-21	587.84	8.42	579.42	11.06	576.78	9.27	578.57
MW-22	592.50	10.41	582.09	12.95	579.55	11.42	581.08
MW-23	589.28	10.22	579.06	11.53	577.75	10.18	579.10
SW-01	587.0 (Top Headwall)	3.08	583.92	na[(2)]	na	3.28	583.72
SW-02	From Ref. point Well 11A	1.89	583.52	0.82	581.58	0.86	583.95
RTW-1	na	8.98	na	10.52	na	8.35	na

Notes:

[(1)] TOR (top of riser for monitoring wells) measured in feet; distance above sea level.

[(2)] location inaccessible due to debris at headwall measurement point.

Table 3. Field Measured Parameters
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

Well ID	Sampling Date	Sampling Time	pH (standard units)	Specific Conductance (mS/cm)	Temperature (°C)	Turbidity (ntu)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (ppm)	Comments
Groundwater Monitoring Wells									
MW-07	04/17/19	11:05	6.45	3.93	10.80	2.04	-51.6	0.76	
MW-10	04/17/19	10:25	6.59	2.00	11.70	5.40	-2.7	2.15	
MW-11A	04/17/19	13:20	6.97	1.35	10.20	4.30	-45.7	0.54	
MW-12	04/17/19	12:10	6.30	4.26	11.20	10.70	-36.4	0.48	
MW-13	04/17/19	10:25	6.86	0.539	11.30	4.74	100.2	1.14	
MW-14	04/17/19	9:30	6.50	2.42	11.40	5.80	-75.4	0.21	
MW-16	04/17/19	12:20	4.36	3.75	12.50	2.70	37.8	1.39	
MW-17	04/17/19	14:40	6.82	2.32	9.10	2.70	-64.8	0.21	
MW-19	04/17/19	13:10	6.86	1.17	11.20	2.74	-80.9	0.31	
MW-20	04/17/19	15:30	6.68	1.86	10.10	4.11	-82.8	0.28	
MW-21	04/17/19	14:35	6.70	2.64	10.60	16.20	-67.5	0.27	
MW-22	04/17/19	11:20	6.81	1.87	11.80	3.15	-87.4	0.85	
MW-23	04/17/19	9:20	6.88	6.00	11.70	5.07	202	3.97	Field Duplicate
Surface Water Sampling Locations*									
SW-01	04/18/19	9:10	--	1.48	--	--	--	--	
SW-02	04/18/19	8:00	--	0.574	--	--	--	--	
SW-03	04/18/19	8:30	--	1.20	--	--	--	--	
SW-04	04/18/19	8:40	--	3.13	--	--	--	--	
SW-05	04/18/19	9:00	--	4.50	--	--	--	--	

Notes:
* Surface water sampling locations are field measured for specific conductance concentrations only.

Table 4A. Groundwater Analytical Summary - On-Site Areas
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

			Location Name	MW-07	MW-10	MW-11A	MW-12	MW-16	MW-19
			Sample Name	MW-07	MW-10	MW-11A	MW-12	MW-16	MW-19
			Sample Date	4/17/2019	4/17/2019	4/17/2019	4/17/2019	4/17/2019	4/17/2019
Analyte	**Units**	**CAS No.**	**NYS AWQS**						
BTEX	ug/L								
Benzene		71-43-2	1	**320**	1 U	2 U			**4100 J**
Toluene		108-88-3	5	20 U	1 U	2 U			100 R
Ethylbenzene		100-41-4	5	**590 J**	1 U	2 U			**430 J**
Total Xylene		1330-20-7	5	**290**	2 U	4 U			200 R
Total BTEX (ND=0)		TBTEX_ND0	NE	**1200**	ND	ND			**4530**
NYSDEC PAH17	ug/L								
Acenaphthene		83-32-9	20*	**57**	0.5 U	0.5 U			100 U
Acenaphthylene		208-96-8	NE	50 U	0.5 U	0.5 U			100 U
Anthracene		120-12-7	50*	50 U	0.5 U	0.5 U			100 U
Benzo(a)anthracene		56-55-3	0.002*	50 U	0.5 U	0.5 U			100 U
Benzo(b)fluoranthene		205-99-2	0.002*	50 U	0.5 U	0.5 U			100 U
Benzo(k)fluoranthene		207-08-9	0.002*	50 U	0.5 U	0.5 U			100 U
Benzo(g,h,i)perylene		191-24-2	NE	50 U	0.5 U	0.5 U			100 U
Benzo(a)pyrene		50-32-8	ND	50 U	0.5 U	0.5 U			100 U
Chrysene		218-01-9	0.002*	50 U	0.5 U	0.5 U			100 U
Dibenz(a,h)anthracene		53-70-3	NE	50 U	0.5 U	0.5 U			100 U
Fluoranthene		206-44-0	50*	50 U	0.5 U	0.5 U			100 U
Fluorene		86-73-7	50*	50 U	0.5 U	0.5 U			100 U
Indeno(1,2,3-cd)pyrene		193-39-5	0.002*	50 U	0.5 U	0.5 U			100 U
2-Methylnaphthalene		91-57-6	NE	**100**	0.5 U	0.5 U			100 U
Naphthalene		91-20-3	10*	**1000**	0.5 U	0.5 U			**3600**
Phenanthrene		85-01-8	50*	50 U	0.5 U	0.5 U			100 U
Pyrene		129-00-0	50*	50 U	0.5 U	0.5 U			100 U
Total PAH (17) (ND=0)		TPAH17_ND0	NE	**1157**	ND	ND			**3600**
Cyanides	ug/L								
Free Cyanide		FREECN	NE			**19.5**	**34.8**	**149**	
Total Cyanide		57-12-5	200			**330**	**1000**	**3100**	
Other									
Total Dissolved Solids	ug/L	TDS	NE			**653000**			
Total Suspended Solids	ug/L	TSS	NE			**26800**			

Table 4B. Groundwater Analytical Summary - Perimeter Areas
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

Location Name / Sample Name / Sample Date / Parent Sample Code				MW-13 MW-13 4/17/2019	MW-14 MW-14 4/17/2019	MW-17 MW-17 4/17/2019	MW-20 MW-20 4/17/2019	MW-21 MW-21 4/17/2019	MW-22 MW-22 4/17/2019	MW-23 MW-23 4/17/2019	MW-23 Duplicate 4/17/2019 MW-23
Analyte	**Units**	**CAS No.**	**NYS AWQS**								
BTEX	ug/L										
Benzene		71-43-2	1	1 U		2 U				1 U	1 U
Toluene		108-88-3	5	1 U		2 U				1 U	1 U
Ethylbenzene		100-41-4	5	1 U		2 U				1 U	1 U
Total Xylene		1330-20-7	5	2 U		4 U				2 U	2 U
Total BTEX (ND=0)		TBTEX_ND0	NE	ND		ND				ND	ND
NYSDEC PAH17	ug/L										
Acenaphthene		83-32-9	20*	0.5 U		10 U				0.5 U	0.5 U
Acenaphthylene		208-96-8	NE	0.5 U		10 U				0.5 U	0.5 U
Anthracene		120-12-7	50*	0.5 U		10 U				0.5 U	0.5 U
Benzo(a)anthracene		56-55-3	0.002*	0.5 U		10 U				0.5 U	0.5 U
Benzo(b)fluoranthene		205-99-2	0.002*	0.5 U		10 U				**0.51**	0.5 U
Benzo(k)fluoranthene		207-08-9	0.002*	0.5 U		10 U				0.5 U	0.5 U
Benzo(g,h,i)perylene		191-24-2	NE	0.5 U		10 U				**0.38 J**	0.5 U
Benzo(a)pyrene		50-32-8	ND	0.5 U		10 U				**0.51**	0.5 U
Chrysene		218-01-9	0.002*	0.5 U		10 U				**0.37 J**	0.5 U
Dibenz(a,h)anthracene		53-70-3	NE	0.5 U		10 U				0.5 U	0.5 U
Fluoranthene		206-44-0	50*	0.5 U		10 U				**0.94**	**0.39 J**
Fluorene		86-73-7	50*	0.5 U		10 U				0.5 U	0.5 U
Indeno(1,2,3-cd)pyrene		193-39-5	0.002*	0.5 U		10 U				0.5 U	0.5 U
2-Methylnaphthalene		91-57-6	NE	0.5 U		10 U				0.5 U	0.5 U
Naphthalene		91-20-3	10*	0.5 U		10 U				0.5 U	0.5 U
Phenanthrene		85-01-8	50*	0.5 U		10 U				**0.61**	0.5 U
Pyrene		129-00-0	50*	0.5 U		10 U				**0.7**	0.5 U
Total PAH (17) (ND=0)		TPAH17_ND0	NE	ND		ND				**4.02**	**0.39**
Cyanides	ug/L										
Free Cyanide		FREECN	NE	5 U	**5.9**	**3.3 J**	**15.2**	5 U	**25**	**38.6**	**52**
Total Cyanide		57-12-5	200	**12**	**890**	**160**	**1300**	**480**	**850**	**320**	**320**

Tables 4A and 4B. Groundwater Analytical Summary - Notes

Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

Notes:

Analytes in blue are not detected in any sample

ug/L = micrograms per liter or parts per billion (ppb)

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
PAH = Polycyclic Aromatic Hydrocarbon

Total BTEX and Total PAHs are calculated using detects only.
Total PAH17 is calculated using the list of analytes: Acenaphthene, Acenaphthylene, Anthracene, Benz[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenz[a,h]anthracene, Fluoranthene, Fluorene, Indeno[1,2,3-cd]pyrene, Naphthalene, 2-Methylnaphthalene, Phenanthrene, and Pyrene

NYS AWQS = New York State Ambient Water Quality Standards and Guidance Values for GA groundwater

* indicates the value is a guidance value and not a standard

CAS No. = Chemical Abstracts Service Number
MGP = Manufactured Gas Plant
ND = Not Detected
NE = Not Established
NYSDEC = New York State Department of Environmental Conservation

Bolding indicates a detected result concentration
Gray shading and bolding indicates that the detected result value exceeds the NYS AWQS

Validation Qualifiers:

J = The result is an estimated value.
R = The result is rejected.
U = The result was not detected above the reporting limit.

Table 5. Surface Water Analytical Summary
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

				Location Name	SW-01	SW-02	SW-03	SW-04	SW-05
				Sample Name	SW-01	SW-02	SW-03	SW-04	SW-05
				Sample Date	4/18/2019	4/18/2019	4/18/2019	4/18/2019	4/18/2019
Analyte	Units	CAS No.	CLASS D STREAM						
BTEX	ug/L								
Benzene		71-43-2	10		1 U	1 U			
Toluene		108-88-3	6000		1 U	1 U			
Ethylbenzene		100-41-4	150*		1 U	1 U			
Total Xylene		1330-20-7	590*		2 U	2 U			
Total BTEX (ND=0)		TBTEX_ND0	NE		ND	ND			
NYSDEC PAH17	ug/L								
Acenaphthene		83-32-9	48*		0.5 U	0.5 U			
Acenaphthylene		208-96-8	NE		0.5 U	0.5 U			
Anthracene		120-12-7	35*		0.5 U	0.5 U			
Benzo(a)anthracene		56-55-3	0.23*		0.5 U	0.5 U			
Benzo(b)fluoranthene		205-99-2	NE		0.5 U	0.5 U			
Benzo(k)fluoranthene		207-08-9	NE		0.5 U	0.5 U			
Benzo(g,h,i)perylene		191-24-2	NE		0.5 U	0.5 U			
Benzo(a)pyrene		50-32-8	0.0012*		0.5 U	0.5 U			
Chrysene		218-01-9	NE		0.5 U	0.5 U			
Dibenz(a,h)anthracene		53-70-3	NE		0.5 U	0.5 U			
Fluoranthene		206-44-0	NE		0.5 U	0.5 U			
Fluorene		86-73-7	4.8*		0.5 U	0.5 U			
Indeno(1,2,3-cd)pyrene		193-39-5	NE		0.5 U	0.5 U			
2-Methylnaphthalene		91-57-6	NE		0.5 U	0.5 U			
Naphthalene		91-20-3	110*		0.5 U	0.5 U			
Phenanthrene		85-01-8	45*		0.5 U	0.5 U			
Pyrene		129-00-0	42*		0.5 U	0.5 U			
Total PAH (17) (ND=0)		TPAH17_ND0	NE		ND	ND			
Cyanides	ug/L								
Free Cyanide		FREECN	22		5 U	**9.5**	**6.6**	5 U	5 U
Total Cyanide		57-12-5	9000		10 UJ	**40 J**	**200 J**	10 UJ	10 UJ
Other									
Total Dissolved Solids	ug/L	TDS	NE		**771 J**	**363 J**			
Total Suspended Solids	ug/L	TSS	NE		4 U	4 U			

Table 5. Surface Water Analytical Summary - Notes
Mineral Springs Road MGP Site
National Fuel Gas Distribution Corporation
West Seneca, New York

Notes:
Analytes in blue are not detected in any sample
ug/L = micrograms per liter or parts per billion (ppb)

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
PAH = Polycyclic Aromatic Hydrocarbon

Total BTEX and Total PAHs are calculated using detects only.
Total PAH16 is calculated using the EPA16 list of analytes: Acenaphthene, Acenaphthylene, Anthracene, Benz[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, Chrysene, Dibenz[a,h]anthracene, Fluoranthene, Fluorene, Indeno[1,2,3-cd]pyrene, Naphthalene,
Total PAH17 is calculated using the EPA16 list of analytes plus 2-Methylnaphthalene

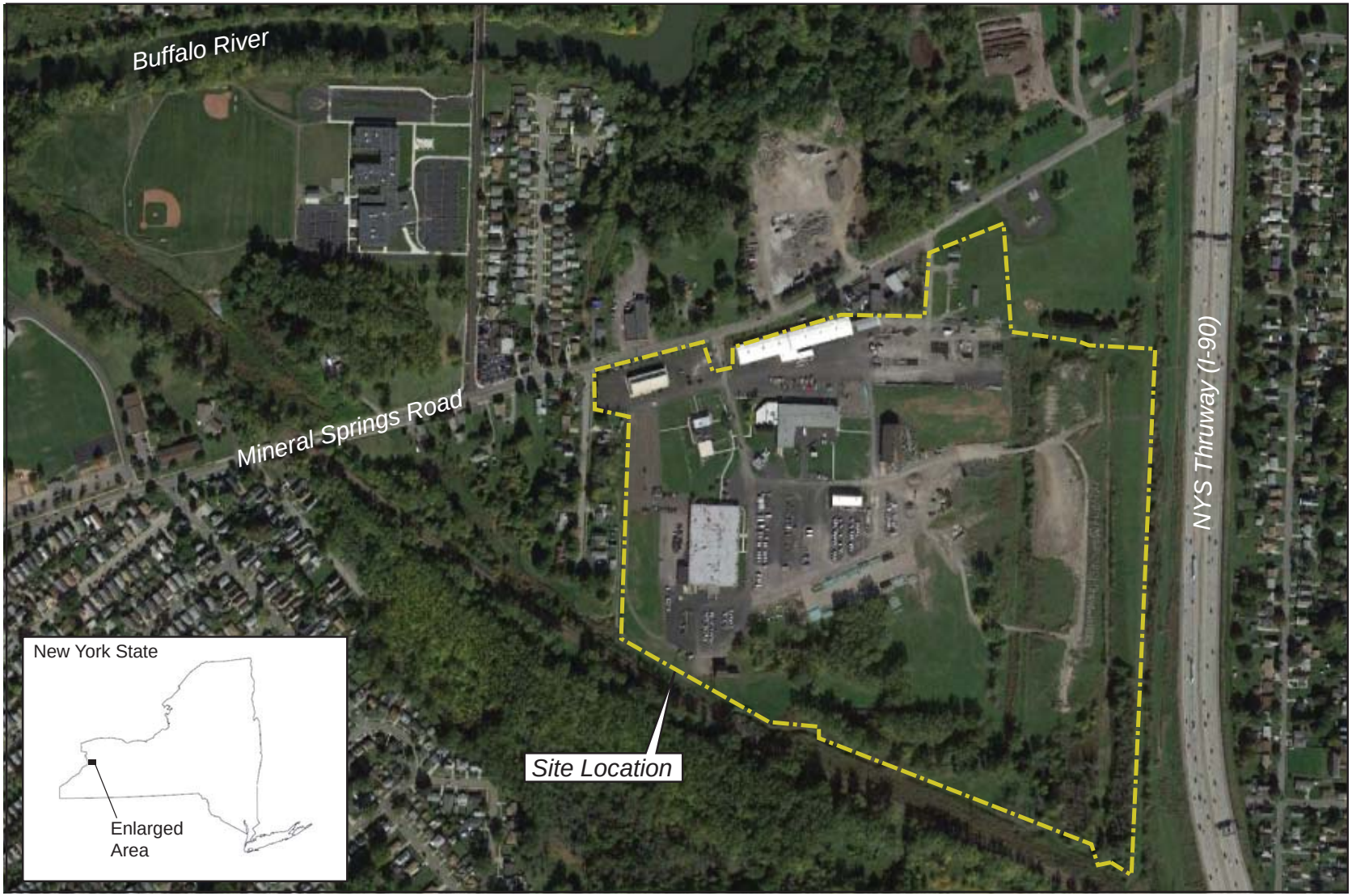
NYS AWQS = New York State Ambient Water Quality Standards and Guidance Values for GA groundwater
* indicates the value is a guidance value and not a standard

CAS No. = Chemical Abstracts Service Number
MGP = Manufactured Gas Plant
ND = Not Detected
NE = Not Established
NYSDEC = New York State Department of Environmental Conservation

Bolding indicates a detected result concentration
Shading and bolding indicates that the detected concentration is above the NYSDOH guidance it was

Validation Qualifiers:
J = The result is an estimated value.
U = The result was not detected above the reporting limit.

Figures



N

0 250 500 1000 Feet

Notes:
Aerial Imagery Sourced from Google Maps (http://www.maps.google.com) dated 2016.

National Fuel Gas Corporation
Mineral Springs Facility

West Seneca, New York

GEI Consultants

Project #1801042

SITE LOCATION

June 2018 Figure 1

PROPERTY LINE
PERIMETER FENCE
MW-17
SW-05
SW-04
SOIL PLACEMENT AREA
MW-18
NORTH CULVERT
EDD
SW-03
SW-02
MW-12
RTW1
ETBE
MW-11A
SOUTH CULVERT
CLASS D STREAM
ESNAC
ESHC
FORMER BLDG 11
MW-19
SETLE
MW-22
ESSAC
NTBE
CTBE
BLDG 10
B10AC
BLDG 9
SPE
WTBE
FORMER BLDG 8
PERIMETER FENCE
MW-13
BLDG 2
B8WAC
MW-10
MW-7
B3EAC
APRE
CC
MW-16
SW-01
BLDG 14
BLDG 1
MINERAL SPRINGS ROAD
DPE
BLDG 5
BLDG 3
B3SAC
COLLAPSED/SEPARATED STORM SEWER AREA
MW-23
OVERHEAD TRANSMISSION TOWER
BLDG 4
SWPRE
MW-15
BURIED ELECTRIC LINE
MW-14
CM
CALAIS STREET
MW-21
MW-20
PERIMETER FENCE

LEGEND

- EXISTING STRUCTURE
- REMEDIAL CONSTRUCTION
- FORMER STRUCTURE
- EXISTING EXCAVATION LIMITS
- MW-7 — MONITORING WELLS
- SW-01 — SURFACE WATER SAMPLE LOCATION
- APRE — ADDITIONAL PURIFIER RESIDUALS EXCAVATION
- B3EAC — BUILDING 3 EAST ASPHALT CAP
- B3SAC — BUILDING 3 SOUTH ASPHALT CAP
- B8WAC — BUILDING 8 WEST ASPHALT CAP
- B10AC — BUILDING 10 ASPHALT CAP
- CC — CLAY CAP
- CM — CORRECTIVE MEASURE WEST PROPERTY LINE
- CTBE — CENTRAL TAR BOILS EXCAVATION
- DPE — DIESEL PAD EXCAVATION
- EDD — EASTERN DRAINAGE DITCH
- ESHC — EASTERN SWALE HDPE CAP
- ESNAC — EASTERN SWALE NORTH ASPHALT CAP
- ESSAC — EASTERN SWALE SOUTH ASPHALT CAP
- ETBE — EASTERN TAR BOILS EXCAVATION
- NTBE — NORTHERN TAR BOILS EXCAVATION
- RTW1 — RECOVERY TEST WELL AND DNAPL SHED
- SETLE — SOUTHEASTERN TAR LENSES EXCAVATION
- SPE — SEPARATOR PITS EXCAVATION
- SWPRE — SOUTHWEST RESIDUALS EXCAVATION
- WTBE — WESTERN TAR BOILS EXCAVATION
- CLAY CAP
- ASPHALT CAP
- HDPE CAP
- REMEDIAL EXCAVATION

PREVIOUSLY REMEDIATED AREAS ARE SHADED RED

150 0 300

GRAPHIC SCALE IN FEET

Figure modified from original presented by AECOM titled “Site Figure- Mineral Springs Road Facility, National Fuel Gas:” dated 6/23/15.

National Fuel Gas Corporation
Mineral Springs Facility

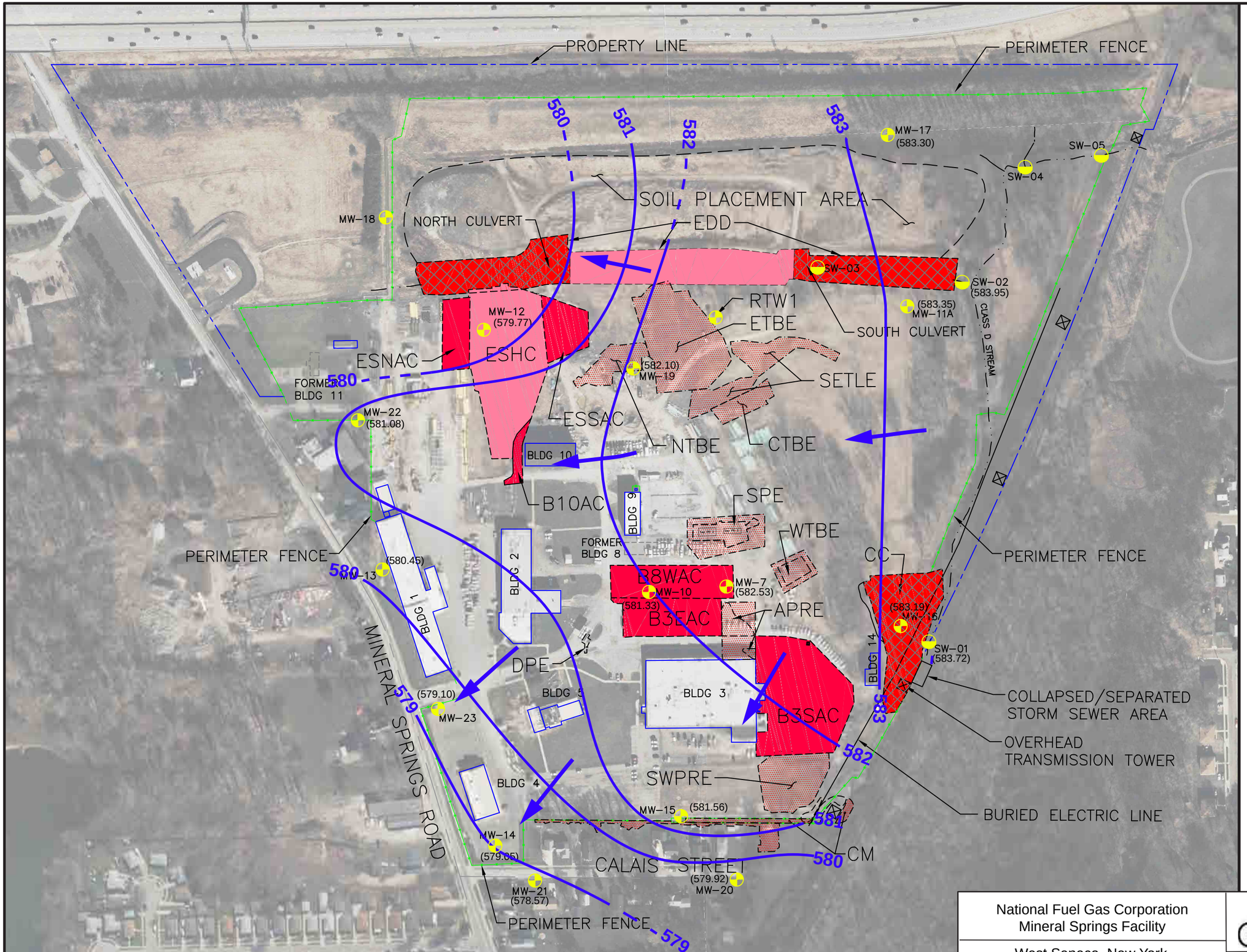
West Seneca, New York

GEI

Project #1801042

SITE LAYOUT

June 2018 Figure 2



LEGEND

- EXISTING STRUCTURE
- REMEDIAL CONSTRUCTION
- FORMER STRUCTURE
- EXISTING EXCAVATION LIMITS
- MW–7 — MONITORING WELLS
- SW–01 — SURFACE WATER SAMPLE LOCATION
- (583.52) — GROUNDWATER ELEVATION (FASL, 4/17/2019)
- GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- GROUNDWATER FLOW DIRECTION
- APRE — ADDITIONAL PURIFIER RESIDUALS EXCAVATION
- B3EAC — BUILDING 3 EAST ASPHALT CAP
- B3SAC — BUILDING 3 SOUTH ASPHALT CAP
- B8WAC — BUILDING 8 WEST ASPHALT CAP
- B10AC — BUILDING 10 ASPHALT CAP
- CC — CLAY CAP
- CM — CORRECTIVE MEASURE WEST PROPERTY LINE
- CTBE — CENTRAL TAR BOILS EXCAVATION
- DPE — DIESEL PAD EXCAVATION
- EDD — EASTERN DRAINAGE DITCH
- ESHC — EASTERN SWALE HDPE CAP
- ESNAC — EASTERN SWALE NORTH ASPHALT CAP
- ESSAC — EASTERN SWALE SOUTH ASPHALT CAP
- ETBE — EASTERN TAR BOILS EXCAVATION
- NTBE — NORTHERN TAR BOILS EXCAVATION
- RTW1 — RECOVERY TEST WELL AND DNAPL SHED
- SETLE — SOUTHEASTERN TAR LENSES EXCAVATION
- SPE — SEPARATOR PITS EXCAVATION
- SWPRE — SOUTHWEST RESIDUALS EXCAVATION
- WTBE — WESTERN TAR BOILS EXCAVATION
- CLAY CAP
- ASPHALT CAP
- HDPE CAP
- REMEDIAL EXCAVATION

PREVIOUSLY REMEDIATED AREAS ARE SHADED RED

150 0 300

GRAPHIC SCALE IN FEET

Figure modified from original presented by AECOM titled “Site Figure- Mineral Springs Road Facility, National Fuel Gas:” dated 6/23/15.

National Fuel Gas Corporation
Mineral Springs Facility

West Seneca, New York

GEI Consultants

GROUNDWATER POTENTIOMETRIC SURFACE MAP-SPRING 2019

Project #1801042 | June 2019 | Figure 3

Appendix A

Laboratory Data Package (Level 2)

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-152317-1
Client Project/Site: GEI, Mineral Springs
Sampling Event: Semi Annual Sampling (April)
Revision: 1

For:
GEI Consultants, Inc.
90B John Muir Drive
Suite 104
Amherst, New York 14228

Attn: Richard Frappa

Authorized for release by:
5/31/2019 7:02:14 PM
Rebecca Jones, Project Management Assistant I
rebecca.jones@testamericainc.com

Designee for

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

Table of Contents

Definitions/Glossary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-152317-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-152317-1

Revision
This report has been revised to remove results that were not requested.

Receipt
The samples were received on 4/17/2019 4:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-07 (480-152317-11), (480-152317-C-11 MS) and (480-152317-C-11 MSD). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: Surrogate recovery for the following sample was outside the upper control limit: MW-23 (480-152317-7). These samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-19 (480-152317-10). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: Surrogate recovery for the following samples were outside the upper control limit: (CCVIS 480-469666/3), (LCS 480-469666/5) and (MB 480-469666/7). Due to holding time limitations the samples were not reanalyzed.

Method(s) 8260C: The sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, when verified by the laboratory, the pH was greater than 2 and the following sample was analyzed after 7 days from sampling: MW-19 (480-152317-10).

Method(s) 8260C: Surrogate recovery for the following samples were outside the upper control limit: MW-17 (480-152317-9), MW-11A (480-152317-13), (CCVIS 480-469873/4), (LCS 480-469873/6) and (MB 480-469873/8). Due to holding time limitations the samples were not reanalyzed.

Method(s) 8260C: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MW-17 (480-152317-9) and MW-11A (480-152317-13). Elevated reporting limits (RLs) are provided.

Method(s) 8260C: The surrogate 4-Bromofluorobenzene (Surr) and Dibromofluoromethane (Surr) were outside the 20%D limits on the continuing calibration verification (CCV) but was within laboratory limits. The following sample is impacted: (CCVIS 480-469873/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D_LL_PAH: The following sample was diluted due to the nature of the sample matrix: MW-17 (480-152317-9). Elevated reporting limits (RLs) are provided.

Method(s) 8270D_LL_PAH: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-19 (480-152317-10) and MW-07 (480-152317-11). Elevated reporting limits (RLs) are provided.

Method(s) 8270D_LL_PAH: The following samples required a dilution due to the nature of the sample matrix: MW-17 (480-152317-9) and MW-07 (480-152317-11). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D_LL_PAH: The following sample was diluted due to the abundance of target analytes: MW-19 (480-152317-10). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 480-152317-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

General Chemistry
No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-16 — Lab Sample ID: 480-152317-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	3.1		0.10	0.050	mg/L	10		9012B	Total/NA
Cyanide, Free	149		25.0	7.7	ug/L	5		9016	Total/NA

Client Sample ID: MW-20 — Lab Sample ID: 480-152317-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	1.3		0.050	0.025	mg/L	5		9012B	Total/NA
Cyanide, Free	15.2		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: Duplicate — Lab Sample ID: 480-152317-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	0.39	J	0.50	0.36	ug/L	1		8270D_LL_PAH	Total/NA
Cyanide, Total	0.32		0.010	0.0050	mg/L	1		9012B	Total/NA
Cyanide, Free	52.0		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: MW-14 — Lab Sample ID: 480-152317-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.89		0.050	0.025	mg/L	5		9012B	Total/NA
Cyanide, Free	5.9		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 480-152317-5

No Detections.

Client Sample ID: MW-22 — Lab Sample ID: 480-152317-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.85		0.050	0.025	mg/L	5		9012B	Total/NA
Cyanide, Free	25.0		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: MW-23 — Lab Sample ID: 480-152317-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo(a)pyrene	0.51		0.50	0.33	ug/L	1		8270D_LL_PAH	Total/NA
Benzo(b)fluoranthene	0.51		0.50	0.30	ug/L	1		8270D_LL_PAH	Total/NA
Benzo(g,h,i)perylene	0.38	J	0.50	0.37	ug/L	1		8270D_LL_PAH	Total/NA
Chrysene	0.37	J	0.50	0.32	ug/L	1		8270D_LL_PAH	Total/NA
Fluoranthene	0.94		0.50	0.36	ug/L	1		8270D_LL_PAH	Total/NA
Phenanthrene	0.61		0.50	0.38	ug/L	1		8270D_LL_PAH	Total/NA
Pyrene	0.70		0.50	0.36	ug/L	1		8270D_LL_PAH	Total/NA
Cyanide, Total	0.32		0.010	0.0050	mg/L	1		9012B	Total/NA
Cyanide, Free	38.6		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: MW-13 — Lab Sample ID: 480-152317-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.012		0.010	0.0050	mg/L	1		9012B	Total/NA

Client Sample ID: MW-17 — Lab Sample ID: 480-152317-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.16		0.010	0.0050	mg/L	1		9012B	Total/NA
Cyanide, Free	3.3	J	5.0	1.5	ug/L	1		9016	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-19 — Lab Sample ID: 480-152317-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4100		100	41	ug/L	100		8260C	Total/NA
Ethylbenzene	430		100	74	ug/L	100		8260C	Total/NA
Naphthalene	3600		100	84	ug/L	200		8270D_LL_PAH	Total/NA

Client Sample ID: MW-07 — Lab Sample ID: 480-152317-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	320		20	8.2	ug/L	20		8260C	Total/NA
Ethylbenzene	590	F1	20	15	ug/L	20		8260C	Total/NA
Xylenes, Total	290		40	13	ug/L	20		8260C	Total/NA
2-Methylnaphthalene	100		50	38	ug/L	100		8270D_LL_PAH	Total/NA
Acenaphthene	57		50	30	ug/L	100		8270D_LL_PAH	Total/NA
Naphthalene	1000		50	42	ug/L	100		8270D_LL_PAH	Total/NA

Client Sample ID: MW-12 — Lab Sample ID: 480-152317-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	1.0		0.050	0.025	mg/L	5		9012B	Total/NA
Cyanide, Free	34.8		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: MW-11A — Lab Sample ID: 480-152317-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.33		0.010	0.0050	mg/L	1		9012B	Total/NA
Cyanide, Free	19.5		5.0	1.5	ug/L	1		9016	Total/NA
Total Dissolved Solids	653		10.0	4.0	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	26.8		4.0	4.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EB — Lab Sample ID: 480-152317-14

No Detections.

Client Sample ID: TB — Lab Sample ID: 480-152317-15

No Detections.

Client Sample ID: MW-21 — Lab Sample ID: 480-152317-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.48		0.010	0.0050	mg/L	1		9012B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-16

Date Collected: 04/17/19 12:20
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-1

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	3.1		0.10	0.050	mg/L		04/30/19 11:30	05/01/19 11:40	10
Cyanide, Free	149		25.0	7.7	ug/L		04/27/19 16:33	04/27/19 17:30	5

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-20

Date Collected: 04/17/19 15:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-2

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	1.3		0.050	0.025	mg/L		04/30/19 11:30	05/01/19 11:43	5
Cyanide, Free	15.2		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: Duplicate

Date Collected: 04/17/19 00:00
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-3

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 14:10	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 14:10	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 14:10	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*04/25/19 14:10*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*04/25/19 14:10*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 123*		*04/25/19 14:10*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*04/25/19 14:10*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:09	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:09	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 19:09	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 19:09	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 19:09	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:09	1
Fluoranthene	**0.39**	**J**	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:09	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:09	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 19:09	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 19:09	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:09	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*107*		*48 - 120*	*04/23/19 15:08*	*04/24/19 19:09*	*1*
Nitrobenzene-d5	*101*		*46 - 120*	*04/23/19 15:08*	*04/24/19 19:09*	*1*
p-Terphenyl-d14	*68*		*24 - 136*	*04/23/19 15:08*	*04/24/19 19:09*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.32**		0.010	0.0050	mg/L		04/30/19 11:30	05/01/19 10:56	1
Cyanide, Free	**52.0**		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-14

Date Collected: 04/17/19 09:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-4

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.89		0.050	0.025	mg/L		04/30/19 11:30	05/01/19 11:44	5
Cyanide, Free	5.9		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample ID: MW-10

Date Collected: 04/17/19 10:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-5

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 14:36	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 14:36	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 14:36	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*04/25/19 14:36*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*04/25/19 14:36*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*04/25/19 14:36*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/25/19 14:36*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:38	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:38	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 19:38	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 19:38	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 19:38	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:38	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:38	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:38	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 19:38	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 19:38	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:38	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*99*		*48 - 120*	*04/23/19 15:08*	*04/24/19 19:38*	*1*
Nitrobenzene-d5	*98*		*46 - 120*	*04/23/19 15:08*	*04/24/19 19:38*	*1*
p-Terphenyl-d14	*69*		*24 - 136*	*04/23/19 15:08*	*04/24/19 19:38*	*1*

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-22

Date Collected: 04/17/19 11:20
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-6

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.85		0.050	0.025	mg/L		04/30/19 11:30	05/01/19 11:46	5
Cyanide, Free	25.0		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-23

Date Collected: 04/17/19 09:25
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-7

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 16:45	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 16:45	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 16:45	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*77 - 120*		*04/25/19 16:45*	*1*
4-Bromofluorobenzene (Surr)	*122*	*X*	*73 - 120*		*04/25/19 16:45*	*1*
Dibromofluoromethane (Surr)	*126*	*X*	*75 - 123*		*04/25/19 16:45*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/25/19 16:45*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:08	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:08	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 20:08	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(a)pyrene	**0.51**		0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(b)fluoranthene	**0.51**		0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(g,h,i)perylene	**0.38**	**J**	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 20:08	1
Chrysene	**0.37**	**J**	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 20:08	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:08	1
Fluoranthene	**0.94**		0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:08	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:08	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 20:08	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 20:08	1
Phenanthrene	**0.61**		0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:08	1
Pyrene	**0.70**		0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*116*		*48 - 120*	*04/23/19 15:08*	*04/24/19 20:08*	*1*
Nitrobenzene-d5	*119*		*46 - 120*	*04/23/19 15:08*	*04/24/19 20:08*	*1*
p-Terphenyl-d14	*86*		*24 - 136*	*04/23/19 15:08*	*04/24/19 20:08*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.32**		0.010	0.0050	mg/L		04/30/19 11:30	05/01/19 11:03	1
Cyanide, Free	**38.6**		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-13

Date Collected: 04/17/19 10:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-8

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 17:09	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 17:09	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 17:09	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*77 - 120*		*04/25/19 17:09*	*1*
4-Bromofluorobenzene (Surr)	*119*		*73 - 120*		*04/25/19 17:09*	*1*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*04/25/19 17:09*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/25/19 17:09*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:37	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:37	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 20:37	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 20:37	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 20:37	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:37	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:37	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:37	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 20:37	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 20:37	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:37	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*100*		*48 - 120*	*04/23/19 15:08*	*04/24/19 20:37*	*1*
Nitrobenzene-d5	*98*		*46 - 120*	*04/23/19 15:08*	*04/24/19 20:37*	*1*
p-Terphenyl-d14	*67*		*24 - 136*	*04/23/19 15:08*	*04/24/19 20:37*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.012**		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:05	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-17

Date Collected: 04/17/19 14:40
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-9

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	2.0	0.82	ug/L			04/26/19 12:14	2
Ethylbenzene	2.0	U	2.0	1.5	ug/L			04/26/19 12:14	2
Toluene	2.0	U	2.0	1.0	ug/L			04/26/19 12:14	2
Xylenes, Total	4.0	U	4.0	1.3	ug/L			04/26/19 12:14	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*77 - 120*		*04/26/19 12:14*	*2*
4-Bromofluorobenzene (Surr)	*117*		*73 - 120*		*04/26/19 12:14*	*2*
Dibromofluoromethane (Surr)	*124*	*X*	*75 - 123*		*04/26/19 12:14*	*2*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/26/19 12:14*	*2*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	10	U	10	7.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Acenaphthene	10	U	10	6.0	ug/L		04/23/19 15:08	04/24/19 21:07	20
Acenaphthylene	10	U	10	6.8	ug/L		04/23/19 15:08	04/24/19 21:07	20
Anthracene	10	U	10	7.8	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(a)anthracene	10	U	10	8.0	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(a)pyrene	10	U	10	6.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(b)fluoranthene	10	U	10	6.0	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(g,h,i)perylene	10	U	10	7.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(k)fluoranthene	10	U	10	1.7	ug/L		04/23/19 15:08	04/24/19 21:07	20
Chrysene	10	U	10	6.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Dibenz(a,h)anthracene	10	U	10	6.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Fluoranthene	10	U	10	7.2	ug/L		04/23/19 15:08	04/24/19 21:07	20
Fluorene	10	U	10	7.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Indeno(1,2,3-cd)pyrene	10	U	10	8.8	ug/L		04/23/19 15:08	04/24/19 21:07	20
Naphthalene	10	U	10	8.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Phenanthrene	10	U	10	7.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Pyrene	10	U	10	7.2	ug/L		04/23/19 15:08	04/24/19 21:07	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*93*		*48 - 120*	*04/23/19 15:08*	*04/24/19 21:07*	*20*
Nitrobenzene-d5	*76*		*46 - 120*	*04/23/19 15:08*	*04/24/19 21:07*	*20*
p-Terphenyl-d14	*74*		*24 - 136*	*04/23/19 15:08*	*04/24/19 21:07*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.16**		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:06	1
Cyanide, Free	**3.3**	**J**	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample ID: MW-19

Date Collected: 04/17/19 13:10
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-10

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**4100**		100	41	ug/L			04/25/19 17:57	100
Ethylbenzene	**430**		100	74	ug/L			04/25/19 17:57	100
Toluene	100	U	100	51	ug/L			04/25/19 17:57	100
Xylenes, Total	200	U	200	66	ug/L			04/25/19 17:57	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*77 - 120*		*04/25/19 17:57*	*100*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/25/19 17:57*	*100*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*04/25/19 17:57*	*100*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/25/19 17:57*	*100*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	100	U	100	76	ug/L		04/23/19 15:08	04/24/19 21:36	200
Acenaphthene	100	U	100	60	ug/L		04/23/19 15:08	04/24/19 21:36	200
Acenaphthylene	100	U	100	68	ug/L		04/23/19 15:08	04/24/19 21:36	200
Anthracene	100	U	100	78	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(a)anthracene	100	U	100	80	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(a)pyrene	100	U	100	66	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(b)fluoranthene	100	U	100	60	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(g,h,i)perylene	100	U	100	74	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(k)fluoranthene	100	U	100	17	ug/L		04/23/19 15:08	04/24/19 21:36	200
Chrysene	100	U	100	64	ug/L		04/23/19 15:08	04/24/19 21:36	200
Dibenz(a,h)anthracene	100	U	100	66	ug/L		04/23/19 15:08	04/24/19 21:36	200
Fluoranthene	100	U	100	72	ug/L		04/23/19 15:08	04/24/19 21:36	200
Fluorene	100	U	100	74	ug/L		04/23/19 15:08	04/24/19 21:36	200
Indeno(1,2,3-cd)pyrene	100	U	100	88	ug/L		04/23/19 15:08	04/24/19 21:36	200
Naphthalene	**3600**		100	84	ug/L		04/23/19 15:08	04/24/19 21:36	200
Phenanthrene	100	U	100	76	ug/L		04/23/19 15:08	04/24/19 21:36	200
Pyrene	100	U	100	72	ug/L		04/23/19 15:08	04/24/19 21:36	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*48 - 120*	*04/23/19 15:08*	*04/24/19 21:36*	*200*
Nitrobenzene-d5	*0*	*X*	*46 - 120*	*04/23/19 15:08*	*04/24/19 21:36*	*200*
p-Terphenyl-d14	*62*		*24 - 136*	*04/23/19 15:08*	*04/24/19 21:36*	*200*

Client Sample ID: MW-07

Date Collected: 04/17/19 11:10
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-11

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**320**		20	8.2	ug/L			04/25/19 15:03	20
Ethylbenzene	**590**	**F1**	20	15	ug/L			04/25/19 15:03	20
Toluene	20	U	20	10	ug/L			04/25/19 15:03	20
Xylenes, Total	**290**		40	13	ug/L			04/25/19 15:03	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*04/25/19 15:03*	*20*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*04/25/19 15:03*	*20*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*04/25/19 15:03*	*20*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/25/19 15:03*	*20*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**100**		50	38	ug/L		04/23/19 15:08	04/24/19 22:06	100
Acenaphthene	**57**		50	30	ug/L		04/23/19 15:08	04/24/19 22:06	100
Acenaphthylene	50	U	50	34	ug/L		04/23/19 15:08	04/24/19 22:06	100
Anthracene	50	U	50	39	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(a)anthracene	50	U	50	40	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(a)pyrene	50	U	50	33	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(b)fluoranthene	50	U	50	30	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(g,h,i)perylene	50	U	50	37	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(k)fluoranthene	50	U	50	8.5	ug/L		04/23/19 15:08	04/24/19 22:06	100
Chrysene	50	U	50	32	ug/L		04/23/19 15:08	04/24/19 22:06	100
Dibenz(a,h)anthracene	50	U	50	33	ug/L		04/23/19 15:08	04/24/19 22:06	100
Fluoranthene	50	U	50	36	ug/L		04/23/19 15:08	04/24/19 22:06	100
Fluorene	50	U	50	37	ug/L		04/23/19 15:08	04/24/19 22:06	100
Indeno(1,2,3-cd)pyrene	50	U	50	44	ug/L		04/23/19 15:08	04/24/19 22:06	100
Naphthalene	**1000**		50	42	ug/L		04/23/19 15:08	04/24/19 22:06	100
Phenanthrene	50	U	50	38	ug/L		04/23/19 15:08	04/24/19 22:06	100
Pyrene	50	U	50	36	ug/L		04/23/19 15:08	04/24/19 22:06	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*48 - 120*	*04/23/19 15:08*	*04/24/19 22:06*	*100*
Nitrobenzene-d5	*62*		*46 - 120*	*04/23/19 15:08*	*04/24/19 22:06*	*100*
p-Terphenyl-d14	*51*		*24 - 136*	*04/23/19 15:08*	*04/24/19 22:06*	*100*

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-12

Date Collected: 04/17/19 12:15
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-12

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	1.0		0.050	0.025	mg/L		04/30/19 12:50	05/01/19 12:38	5
Cyanide, Free	34.8		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-11A

Date Collected: 04/17/19 13:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-13

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	2.0	0.82	ug/L			04/26/19 12:38	2
Ethylbenzene	2.0	U	2.0	1.5	ug/L			04/26/19 12:38	2
Toluene	2.0	U	2.0	1.0	ug/L			04/26/19 12:38	2
Xylenes, Total	4.0	U	4.0	1.3	ug/L			04/26/19 12:38	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*77 - 120*		*04/26/19 12:38*	*2*
4-Bromofluorobenzene (Surr)	*123*	*X*	*73 - 120*		*04/26/19 12:38*	*2*
Dibromofluoromethane (Surr)	*125*	*X*	*75 - 123*		*04/26/19 12:38*	*2*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/26/19 12:38*	*2*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 22:35	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 22:35	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 22:35	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 22:35	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 22:35	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 22:35	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 22:35	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 22:35	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 22:35	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 22:35	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 22:35	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*101*		*48 - 120*	*04/23/19 15:08*	*04/24/19 22:35*	*1*
Nitrobenzene-d5	*100*		*46 - 120*	*04/23/19 15:08*	*04/24/19 22:35*	*1*
p-Terphenyl-d14	*72*		*24 - 136*	*04/23/19 15:08*	*04/24/19 22:35*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.33**		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:12	1
Cyanide, Free	**19.5**		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1
Total Dissolved Solids	**653**		10.0	4.0	mg/L			04/24/19 22:16	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**26.8**		4.0	4.0	mg/L			04/24/19 22:38	1

Client Sample ID: EB

Date Collected: 04/17/19 13:15
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-14

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 18:44	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 18:44	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 18:44	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*77 - 120*		*04/25/19 18:44*	*1*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/25/19 18:44*	*1*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*04/25/19 18:44*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/25/19 18:44*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 23:05	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 23:05	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 23:05	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 23:05	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 23:05	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 23:05	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 23:05	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 23:05	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 23:05	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 23:05	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 23:05	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*48 - 120*	*04/23/19 15:08*	*04/24/19 23:05*	*1*
Nitrobenzene-d5	*73*		*46 - 120*	*04/23/19 15:08*	*04/24/19 23:05*	*1*
p-Terphenyl-d14	*73*		*24 - 136*	*04/23/19 15:08*	*04/24/19 23:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:13	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: TB
Date Collected: 04/17/19 00:00
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-15
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 19:08	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 19:08	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 19:08	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*77 - 120*		*04/25/19 19:08*	*1*
4-Bromofluorobenzene (Surr)	*120*		*73 - 120*		*04/25/19 19:08*	*1*
Dibromofluoromethane (Surr)	*119*		*75 - 123*		*04/25/19 19:08*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/25/19 19:08*	*1*

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-21

Date Collected: 04/17/19 14:35
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-16

Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.48**		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:18	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Surrogate Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (77-120)	BFB (73-120)	DBFM (75-123)	TOL (80-120)
480-152317-3	Duplicate	108	102	98	98
480-152317-5	MW-10	105	103	101	100
480-152317-7	MW-23	116	122 X	126 X	104
480-152317-8	MW-13	111	119	118	103
480-152317-9	MW-17	115	117	124 X	104
480-152317-10	MW-19	112	118	118	102
480-152317-11	MW-07	108	103	99	99
480-152317-11 MS	MW-07	108	103	105	99
480-152317-11 MSD	MW-07	107	103	102	100
480-152317-13	MW-11A	118	123 X	125 X	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (77-120)	BFB (73-120)	DBFM (75-123)	TOL (80-120)
480-152317-14	EB	109	116	113	101
480-152317-15	TB	113	120	119	100
LCS 480-469659/5	Lab Control Sample	101	106	98	101
LCS 480-469666/5	Lab Control Sample	121 X	127 X	122	112
LCS 480-469873/6	Lab Control Sample	111	127 X	122	109
MB 480-469659/9	Method Blank	109	98	103	98
MB 480-469666/7	Method Blank	118	124 X	123	107
MB 480-469873/8	Method Blank	117	117	126 X	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	FBP (48-120)	NBZ (46-120)	TPHd14 (24-136)
480-152317-3	Duplicate	107	101	68
480-152317-5	MW-10	99	98	69
480-152317-7	MW-23	116	119	86
480-152317-8	MW-13	100	98	67
480-152317-9	MW-17	93	76	74
480-152317-10	MW-19	92	0 X	62
480-152317-11	MW-07	79	62	51

Surrogate Summary

Client: GEI Consultants, Inc.
Job ID: 480-152317-1
Project/Site: GEI, Mineral Springs

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Matrix: Ground Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		FBP	NBZ	TPHd14						
Lab Sample ID	Client Sample ID	(48-120)	(46-120)	(24-136)						
480-152317-13	MW-11A	101	100	72						

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
		FBP	NBZ	TPHd14						
Lab Sample ID	Client Sample ID	(48-120)	(46-120)	(24-136)						
480-152317-14	EB	82	73	73						
LCS 480-469336/2-A	Lab Control Sample	92	85	103						
LCSD 480-469336/3-A	Lab Control Sample Dup	100	82	86						
MB 480-469336/1-A	Method Blank	95	95	92						

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-469659/9
Matrix: Water
Analysis Batch: 469659

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 11:45	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 11:45	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 11:45	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*77 - 120*		*04/25/19 11:45*	*1*
4-Bromofluorobenzene (Surr)	*98*		*73 - 120*		*04/25/19 11:45*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 123*		*04/25/19 11:45*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*04/25/19 11:45*	*1*

Lab Sample ID: LCS 480-469659/5
Matrix: Water
Analysis Batch: 469659

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	25.9		ug/L		104	71 - 124
Ethylbenzene	25.0	25.4		ug/L		102	77 - 123
Toluene	25.0	26.7		ug/L		107	80 - 122
Xylenes, Total	50.0	49.4		ug/L		99	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*77 - 120*
4-Bromofluorobenzene (Surr)	*106*		*73 - 120*
Dibromofluoromethane (Surr)	*98*		*75 - 123*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 480-152317-11 MS
Matrix: Ground Water
Analysis Batch: 469659

Client Sample ID: MW-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	320		500	806		ug/L		97	71 - 124
Ethylbenzene	590	F1	500	1000		ug/L		82	77 - 123
Toluene	20	U	500	531		ug/L		106	80 - 122
Xylenes, Total	290		1000	1220		ug/L		93	76 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*
Dibromofluoromethane (Surr)	*105*		*75 - 123*
Toluene-d8 (Surr)	*99*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 480-152317-11 MSD
Matrix: Ground Water
Analysis Batch: 469659

Client Sample ID: MW-07
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	320		500	790		ug/L		94	71 - 124	2	13
Ethylbenzene	590	F1	500	966	F1	ug/L		75	77 - 123	4	15
Toluene	20	U	500	510		ug/L		102	80 - 122	4	15
Xylenes, Total	290		1000	1190		ug/L		90	76 - 122	2	16

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*107*		*77 - 120*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*
Dibromofluoromethane (Surr)	*102*		*75 - 123*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 480-469666/7
Matrix: Water
Analysis Batch: 469666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 12:05	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 12:05	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 12:05	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*77 - 120*		*04/25/19 12:05*	*1*
4-Bromofluorobenzene (Surr)	*124*	*X*	*73 - 120*		*04/25/19 12:05*	*1*
Dibromofluoromethane (Surr)	*123*		*75 - 123*		*04/25/19 12:05*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*04/25/19 12:05*	*1*

Lab Sample ID: LCS 480-469666/5
Matrix: Water
Analysis Batch: 469666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	23.2		ug/L		93	71 - 124
Ethylbenzene	25.0	24.4		ug/L		97	77 - 123
Toluene	25.0	25.0		ug/L		100	80 - 122
Xylenes, Total	50.0	48.3		ug/L		97	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*121*	*X*	*77 - 120*
4-Bromofluorobenzene (Surr)	*127*	*X*	*73 - 120*
Dibromofluoromethane (Surr)	*122*		*75 - 123*
Toluene-d8 (Surr)	*112*		*80 - 120*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 480-469873/8
Matrix: Water
Analysis Batch: 469873

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/26/19 11:21	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/26/19 11:21	1
Toluene	1.0	U	1.0	0.51	ug/L			04/26/19 11:21	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/26/19 11:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*77 - 120*		*04/26/19 11:21*	*1*
4-Bromofluorobenzene (Surr)	*117*		*73 - 120*		*04/26/19 11:21*	*1*
Dibromofluoromethane (Surr)	*126*	*X*	*75 - 123*		*04/26/19 11:21*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/26/19 11:21*	*1*

Lab Sample ID: LCS 480-469873/6
Matrix: Water
Analysis Batch: 469873

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	22.6		ug/L		90	71 - 124
Ethylbenzene	25.0	24.1		ug/L		96	77 - 123
Toluene	25.0	24.0		ug/L		96	80 - 122
Xylenes, Total	50.0	47.5		ug/L		95	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*77 - 120*
4-Bromofluorobenzene (Surr)	*127*	*X*	*73 - 120*
Dibromofluoromethane (Surr)	*122*		*75 - 123*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Lab Sample ID: MB 480-469336/1-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 16:42	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 16:42	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 16:42	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 16:42	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 16:42	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 16:42	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 16:42	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 16:42	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 16:42	1

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Lab Sample ID: MB 480-469336/1-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 16:42	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 16:42	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 16:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*95*		*48 - 120*	*04/23/19 15:08*	*04/24/19 16:42*	*1*
Nitrobenzene-d5	*95*		*46 - 120*	*04/23/19 15:08*	*04/24/19 16:42*	*1*
p-Terphenyl-d14	*92*		*24 - 120*	*04/23/19 15:08*	*04/24/19 16:42*	*1*

Lab Sample ID: LCS 480-469336/2-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469336

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	32.0	30.0		ug/L		94	48 - 120
Acenaphthene	32.0	30.0		ug/L		94	60 - 120
Acenaphthylene	32.0	32.6		ug/L		102	63 - 120
Anthracene	32.0	32.7		ug/L		102	69 - 131
Benzo(a)anthracene	32.0	30.0		ug/L		94	62 - 142
Benzo(a)pyrene	32.0	31.9		ug/L		100	46 - 156
Benzo(b)fluoranthene	32.0	31.8		ug/L		99	50 - 149
Benzo(g,h,i)perylene	32.0	32.5		ug/L		102	34 - 189
Benzo(k)fluoranthene	32.0	30.7		ug/L		96	47 - 147
Chrysene	32.0	30.4		ug/L		95	69 - 140
Dibenz(a,h)anthracene	32.0	31.8		ug/L		99	35 - 176
Fluoranthene	32.0	37.9		ug/L		118	67 - 133
Fluorene	32.0	34.0		ug/L		106	66 - 129
Indeno(1,2,3-cd)pyrene	32.0	31.7		ug/L		99	57 - 161
Naphthalene	32.0	27.2		ug/L		85	48 - 120
Phenanthrene	32.0	30.2		ug/L		94	67 - 130
Pyrene	32.0	34.4		ug/L		108	58 - 136

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*92*		*48 - 120*
Nitrobenzene-d5	*85*		*46 - 120*
p-Terphenyl-d14	*103*		*24 - 120*

Lab Sample ID: LCSD 480-469336/3-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469336

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene	32.0	28.5		ug/L		89	48 - 120	5	21
Acenaphthene	32.0	28.2		ug/L		88	60 - 120	6	24
Acenaphthylene	32.0	28.6		ug/L		89	63 - 120	13	18
Anthracene	32.0	31.7		ug/L		99	69 - 131	3	15
Benzo(a)anthracene	32.0	29.2		ug/L		91	62 - 142	3	15
Benzo(a)pyrene	32.0	27.4		ug/L		86	46 - 156	15	15

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Lab Sample ID: LCSD 480-469336/3-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469336

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo(b)fluoranthene			32.0	29.3		ug/L		92	50 - 149	8	15
Benzo(g,h,i)perylene			32.0	28.5		ug/L		89	34 - 189	13	15
Benzo(k)fluoranthene			32.0	27.9		ug/L		87	47 - 147	10	22
Chrysene			32.0	29.0		ug/L		91	69 - 140	5	15
Dibenz(a,h)anthracene			32.0	28.1		ug/L		88	35 - 176	12	15
Fluoranthene			32.0	35.2		ug/L		110	67 - 133	7	15
Fluorene			32.0	33.9		ug/L		106	66 - 129	0	15
Indeno(1,2,3-cd)pyrene			32.0	28.4		ug/L		89	57 - 161	11	15
Naphthalene			32.0	28.2		ug/L		88	48 - 120	4	29
Phenanthrene			32.0	31.0		ug/L		97	67 - 130	3	15
Pyrene			32.0	31.8		ug/L		99	58 - 136	8	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*100*		*48 - 120*
Nitrobenzene-d5	*82*		*46 - 120*
p-Terphenyl-d14	*86*		*24 - 136*

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-470547/1-A
Matrix: Water
Analysis Batch: 470677

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 470547

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		04/30/19 11:30	05/01/19 10:28	1

Lab Sample ID: LCS 480-470547/2-A
Matrix: Water
Analysis Batch: 470677

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 470547

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total			0.250	0.227		mg/L		91	90 - 110		

Lab Sample ID: 480-152317-1 MS
Matrix: Ground Water
Analysis Batch: 470679

Client Sample ID: MW-16
Prep Type: Total/NA
Prep Batch: 470547

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	3.1		0.100	2.93	4	mg/L		-120	90 - 110		

Lab Sample ID: 480-152317-7 MS
Matrix: Ground Water
Analysis Batch: 470677

Client Sample ID: MW-23
Prep Type: Total/NA
Prep Batch: 470547

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Cyanide, Total	0.32		0.100	0.416		mg/L		95	90 - 110		

Method: 9012B - Cyanide, Total andor Amenable (Continued)

Lab Sample ID: MB 480-470548/1-A
Matrix: Water
Analysis Batch: 470690

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 470548

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:00	1

Lab Sample ID: LCS 480-470548/2-A
Matrix: Water
Analysis Batch: 470690

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 470548

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.238		mg/L		95	90 - 110

Lab Sample ID: 480-152317-12 MS
Matrix: Ground Water
Analysis Batch: 470690

Client Sample ID: MW-12
Prep Type: Total/NA
Prep Batch: 470548

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	1.0		0.100	1.27	4	mg/L		250	90 - 110

Lab Sample ID: 480-152317-9 DU
Matrix: Ground Water
Analysis Batch: 470690

Client Sample ID: MW-17
Prep Type: Total/NA
Prep Batch: 470548

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total	0.16		0.163		mg/L		1	15

Method: 9016 - Cyanide, Free

Lab Sample ID: MB 460-605761/1-A
Matrix: Water
Analysis Batch: 605936

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605761

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Lab Sample ID: LCS 460-605761/2-A
Matrix: Water
Analysis Batch: 605936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605761

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Free	50.0	45.53		ug/L		91	78 - 110

Lab Sample ID: 480-152317-13 MS
Matrix: Ground Water
Analysis Batch: 605936

Client Sample ID: MW-11A
Prep Type: Total/NA
Prep Batch: 605761

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Free	19.5		50.0	61.99		ug/L		85	78 - 110

Method: 9016 - Cyanide, Free (Continued)

Lab Sample ID: 480-152317-13 MSD
Matrix: Ground Water
Analysis Batch: 605936

Client Sample ID: MW-11A
Prep Type: Total/NA
Prep Batch: 605761

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Free	19.5		50.0	63.90		ug/L		89	78 - 110	3	20

Lab Sample ID: DLCK 460-605936/10
Matrix: Water
Analysis Batch: 605936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Free	2.00	2.63	J	ug/L		132	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-469623/1
Matrix: Water
Analysis Batch: 469623

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	4.0	mg/L			04/24/19 22:16	1

Lab Sample ID: LCS 480-469623/2
Matrix: Water
Analysis Batch: 469623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	497.0		mg/L		99	85 - 115

Lab Sample ID: 480-152317-13 DU
Matrix: Ground Water
Analysis Batch: 469623

Client Sample ID: MW-11A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	653		650.0		mg/L		0.5	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 480-469624/1
Matrix: Water
Analysis Batch: 469624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0	1.0	mg/L			04/24/19 22:38	1

Lab Sample ID: LCS 480-469624/2
Matrix: Water
Analysis Batch: 469624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	253	224.4		mg/L		89	88 - 110

GC/MS VOA

Analysis Batch: 469659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-3	Duplicate	Total/NA	Ground Water	8260C	
480-152317-5	MW-10	Total/NA	Ground Water	8260C	
480-152317-11	MW-07	Total/NA	Ground Water	8260C	
MB 480-469659/9	Method Blank	Total/NA	Water	8260C	
LCS 480-469659/5	Lab Control Sample	Total/NA	Water	8260C	
480-152317-11 MS	MW-07	Total/NA	Ground Water	8260C	
480-152317-11 MSD	MW-07	Total/NA	Ground Water	8260C	

Analysis Batch: 469666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-7	MW-23	Total/NA	Ground Water	8260C	
480-152317-8	MW-13	Total/NA	Ground Water	8260C	
480-152317-10	MW-19	Total/NA	Ground Water	8260C	
480-152317-14	EB	Total/NA	Water	8260C	
480-152317-15	TB	Total/NA	Water	8260C	
MB 480-469666/7	Method Blank	Total/NA	Water	8260C	
LCS 480-469666/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 469873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-9	MW-17	Total/NA	Ground Water	8260C	
480-152317-13	MW-11A	Total/NA	Ground Water	8260C	
MB 480-469873/8	Method Blank	Total/NA	Water	8260C	
LCS 480-469873/6	Lab Control Sample	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 469336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-3	Duplicate	Total/NA	Ground Water	3510C	
480-152317-5	MW-10	Total/NA	Ground Water	3510C	
480-152317-7	MW-23	Total/NA	Ground Water	3510C	
480-152317-8	MW-13	Total/NA	Ground Water	3510C	
480-152317-9	MW-17	Total/NA	Ground Water	3510C	
480-152317-10	MW-19	Total/NA	Ground Water	3510C	
480-152317-11	MW-07	Total/NA	Ground Water	3510C	
480-152317-13	MW-11A	Total/NA	Ground Water	3510C	
480-152317-14	EB	Total/NA	Water	3510C	
MB 480-469336/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-469336/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-469336/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 469510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-3	Duplicate	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-5	MW-10	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-7	MW-23	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-8	MW-13	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-9	MW-17	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-10	MW-19	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-11	MW-07	Total/NA	Ground Water	8270D_LL_PAH	469336

GC/MS Semi VOA (Continued)

Analysis Batch: 469510 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-13	MW-11A	Total/NA	Ground Water	8270D_LL_PAH	469336
480-152317-14	EB	Total/NA	Water	8270D_LL_PAH	469336
MB 480-469336/1-A	Method Blank	Total/NA	Water	8270D_LL_PAH	469336
LCS 480-469336/2-A	Lab Control Sample	Total/NA	Water	8270D_LL_PAH	469336
LCSD 480-469336/3-A	Lab Control Sample Dup	Total/NA	Water	8270D_LL_PAH	469336

General Chemistry

Analysis Batch: 469623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-13	MW-11A	Total/NA	Ground Water	SM 2540C	
MB 480-469623/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-469623/2	Lab Control Sample	Total/NA	Water	SM 2540C	
480-152317-13 DU	MW-11A	Total/NA	Ground Water	SM 2540C	

Analysis Batch: 469624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-13	MW-11A	Total/NA	Ground Water	SM 2540D	
MB 480-469624/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-469624/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Prep Batch: 470547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-1	MW-16	Total/NA	Ground Water	9012B	
480-152317-2	MW-20	Total/NA	Ground Water	9012B	
480-152317-3	Duplicate	Total/NA	Ground Water	9012B	
480-152317-4	MW-14	Total/NA	Ground Water	9012B	
480-152317-6	MW-22	Total/NA	Ground Water	9012B	
480-152317-7	MW-23	Total/NA	Ground Water	9012B	
MB 480-470547/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-470547/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-152317-1 MS	MW-16	Total/NA	Ground Water	9012B	
480-152317-7 MS	MW-23	Total/NA	Ground Water	9012B	

Prep Batch: 470548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-8	MW-13	Total/NA	Ground Water	9012B	
480-152317-9	MW-17	Total/NA	Ground Water	9012B	
480-152317-12	MW-12	Total/NA	Ground Water	9012B	
480-152317-13	MW-11A	Total/NA	Ground Water	9012B	
480-152317-14	EB	Total/NA	Water	9012B	
480-152317-16	MW-21	Total/NA	Ground Water	9012B	
MB 480-470548/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-470548/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-152317-12 MS	MW-12	Total/NA	Ground Water	9012B	
480-152317-9 DU	MW-17	Total/NA	Ground Water	9012B	

Analysis Batch: 470677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-3	Duplicate	Total/NA	Ground Water	9012B	470547
480-152317-7	MW-23	Total/NA	Ground Water	9012B	470547

General Chemistry (Continued)

Analysis Batch: 470677 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-470547/1-A	Method Blank	Total/NA	Water	9012B	470547
LCS 480-470547/2-A	Lab Control Sample	Total/NA	Water	9012B	470547
480-152317-7 MS	MW-23	Total/NA	Ground Water	9012B	470547

Analysis Batch: 470679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-1	MW-16	Total/NA	Ground Water	9012B	470547
480-152317-2	MW-20	Total/NA	Ground Water	9012B	470547
480-152317-4	MW-14	Total/NA	Ground Water	9012B	470547
480-152317-6	MW-22	Total/NA	Ground Water	9012B	470547
480-152317-1 MS	MW-16	Total/NA	Ground Water	9012B	470547

Analysis Batch: 470690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-8	MW-13	Total/NA	Ground Water	9012B	470548
480-152317-9	MW-17	Total/NA	Ground Water	9012B	470548
480-152317-12	MW-12	Total/NA	Ground Water	9012B	470548
480-152317-13	MW-11A	Total/NA	Ground Water	9012B	470548
480-152317-14	EB	Total/NA	Water	9012B	470548
480-152317-16	MW-21	Total/NA	Ground Water	9012B	470548
MB 480-470548/1-A	Method Blank	Total/NA	Water	9012B	470548
LCS 480-470548/2-A	Lab Control Sample	Total/NA	Water	9012B	470548
480-152317-12 MS	MW-12	Total/NA	Ground Water	9012B	470548
480-152317-9 DU	MW-17	Total/NA	Ground Water	9012B	470548

Prep Batch: 605761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-1	MW-16	Total/NA	Ground Water	9016	
480-152317-2	MW-20	Total/NA	Ground Water	9016	
480-152317-3	Duplicate	Total/NA	Ground Water	9016	
480-152317-4	MW-14	Total/NA	Ground Water	9016	
480-152317-6	MW-22	Total/NA	Ground Water	9016	
480-152317-7	MW-23	Total/NA	Ground Water	9016	
480-152317-8	MW-13	Total/NA	Ground Water	9016	
480-152317-9	MW-17	Total/NA	Ground Water	9016	
480-152317-12	MW-12	Total/NA	Ground Water	9016	
480-152317-13	MW-11A	Total/NA	Ground Water	9016	
480-152317-14	EB	Total/NA	Water	9016	
480-152317-16	MW-21	Total/NA	Ground Water	9016	
MB 460-605761/1-A	Method Blank	Total/NA	Water	9016	
LCS 460-605761/2-A	Lab Control Sample	Total/NA	Water	9016	
480-152317-13 MS	MW-11A	Total/NA	Ground Water	9016	
480-152317-13 MSD	MW-11A	Total/NA	Ground Water	9016	

Analysis Batch: 605936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-1	MW-16	Total/NA	Ground Water	9016	605761
480-152317-2	MW-20	Total/NA	Ground Water	9016	605761
480-152317-3	Duplicate	Total/NA	Ground Water	9016	605761
480-152317-4	MW-14	Total/NA	Ground Water	9016	605761
480-152317-6	MW-22	Total/NA	Ground Water	9016	605761

General Chemistry (Continued)

Analysis Batch: 605936 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152317-7	MW-23	Total/NA	Ground Water	9016	605761
480-152317-8	MW-13	Total/NA	Ground Water	9016	605761
480-152317-9	MW-17	Total/NA	Ground Water	9016	605761
480-152317-12	MW-12	Total/NA	Ground Water	9016	605761
480-152317-13	MW-11A	Total/NA	Ground Water	9016	605761
480-152317-14	EB	Total/NA	Water	9016	605761
480-152317-16	MW-21	Total/NA	Ground Water	9016	605761
MB 460-605761/1-A	Method Blank	Total/NA	Water	9016	605761
DLCK 460-605936/10	Lab Control Sample	Total/NA	Water	9016	
LCS 460-605761/2-A	Lab Control Sample	Total/NA	Water	9016	605761
480-152317-13 MS	MW-11A	Total/NA	Ground Water	9016	605761
480-152317-13 MSD	MW-11A	Total/NA	Ground Water	9016	605761

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-16
Date Collected: 04/17/19 12:20
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470547	04/30/19 11:30	MDL	TAL BUF
Total/NA	Analysis	9012B		10	470679	05/01/19 11:40	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		5	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-20
Date Collected: 04/17/19 15:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470547	04/30/19 11:30	MDL	TAL BUF
Total/NA	Analysis	9012B		5	470679	05/01/19 11:43	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: Duplicate
Date Collected: 04/17/19 00:00
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469659	04/25/19 14:10	AEM	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 19:09	RJS	TAL BUF
Total/NA	Prep	9012B			470547	04/30/19 11:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470677	05/01/19 10:56	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-14
Date Collected: 04/17/19 09:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-4
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470547	04/30/19 11:30	MDL	TAL BUF
Total/NA	Analysis	9012B		5	470679	05/01/19 11:44	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-10
Date Collected: 04/17/19 10:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469659	04/25/19 14:36	AEM	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 19:38	RJS	TAL BUF

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-22
Date Collected: 04/17/19 11:20
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470547	04/30/19 11:30	MDL	TAL BUF
Total/NA	Analysis	9012B		5	470679	05/01/19 11:46	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-23
Date Collected: 04/17/19 09:25
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469666	04/25/19 16:45	OMI	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 20:08	RJS	TAL BUF
Total/NA	Prep	9012B			470547	04/30/19 11:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470677	05/01/19 11:03	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-13
Date Collected: 04/17/19 10:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469666	04/25/19 17:09	OMI	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 20:37	RJS	TAL BUF
Total/NA	Prep	9012B			470548	04/30/19 12:50	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470690	05/01/19 12:05	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-17
Date Collected: 04/17/19 14:40
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	469873	04/26/19 12:14	RJF	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		20	469510	04/24/19 21:07	RJS	TAL BUF
Total/NA	Prep	9012B			470548	04/30/19 12:50	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470690	05/01/19 12:06	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-19
Date Collected: 04/17/19 13:10
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-10
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		100	469666	04/25/19 17:57	OMI	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		200	469510	04/24/19 21:36	RJS	TAL BUF

Client Sample ID: MW-07
Date Collected: 04/17/19 11:10
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-11
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	469659	04/25/19 15:03	AEM	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		100	469510	04/24/19 22:06	RJS	TAL BUF

Client Sample ID: MW-12
Date Collected: 04/17/19 12:15
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-12
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470548	04/30/19 12:50	MDL	TAL BUF
Total/NA	Analysis	9012B		5	470690	05/01/19 12:38	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: MW-11A
Date Collected: 04/17/19 13:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-13
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		2	469873	04/26/19 12:38	RJF	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 22:35	RJS	TAL BUF
Total/NA	Prep	9012B			470548	04/30/19 12:50	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470690	05/01/19 12:12	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI
Total/NA	Analysis	SM 2540C		1	469623	04/24/19 22:16	SMH	TAL BUF
Total/NA	Analysis	SM 2540D		1	469624	04/24/19 22:38	SMH	TAL BUF

Client Sample ID: EB
Date Collected: 04/17/19 13:15
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469666	04/25/19 18:44	OMI	TAL BUF

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: EB

Lab Sample ID: 480-152317-14

Date Collected: 04/17/19 13:15

Matrix: Water

Date Received: 04/17/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 23:05	RJS	TAL BUF
Total/NA	Prep	9012B			470548	04/30/19 12:50	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470690	05/01/19 12:13	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: TB

Lab Sample ID: 480-152317-15

Date Collected: 04/17/19 00:00

Matrix: Water

Date Received: 04/17/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469666	04/25/19 19:08	OMI	TAL BUF

Client Sample ID: MW-21

Lab Sample ID: 480-152317-16

Date Collected: 04/17/19 14:35

Matrix: Ground Water

Date Received: 04/17/19 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470548	04/30/19 12:50	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470690	05/01/19 12:18	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-19
New Jersey	NELAP	2	12028	06-30-19
New York	NELAP	2	11452	04-01-20
Pennsylvania	NELAP	3	68-00522	02-28-20
Rhode Island	State Program	1	LAO00132	12-30-19
USDA	Federal		NJCA-003-08	05-03-21

Method Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D_LL_PAH	Semivolatile Organic Compounds (GC/MS) Low level PAH	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF
9016	Cyanide, Free	SW846	TAL EDI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL BUF
9016	Cyanide, Preparation	SW846	TAL EDI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-152317-1	MW-16	Ground Water	04/17/19 12:20	04/17/19 16:10	
480-152317-2	MW-20	Ground Water	04/17/19 15:30	04/17/19 16:10	
480-152317-3	Duplicate	Ground Water	04/17/19 00:00	04/17/19 16:10	
480-152317-4	MW-14	Ground Water	04/17/19 09:30	04/17/19 16:10	
480-152317-5	MW-10	Ground Water	04/17/19 10:30	04/17/19 16:10	
480-152317-6	MW-22	Ground Water	04/17/19 11:20	04/17/19 16:10	
480-152317-7	MW-23	Ground Water	04/17/19 09:25	04/17/19 16:10	
480-152317-8	MW-13	Ground Water	04/17/19 10:30	04/17/19 16:10	
480-152317-9	MW-17	Ground Water	04/17/19 14:40	04/17/19 16:10	
480-152317-10	MW-19	Ground Water	04/17/19 13:10	04/17/19 16:10	
480-152317-11	MW-07	Ground Water	04/17/19 11:10	04/17/19 16:10	
480-152317-12	MW-12	Ground Water	04/17/19 12:15	04/17/19 16:10	
480-152317-13	MW-11A	Ground Water	04/17/19 13:30	04/17/19 16:10	
480-152317-14	EB	Water	04/17/19 13:15	04/17/19 16:10	
480-152317-15	TB	Water	04/17/19 00:00	04/17/19 16:10	
480-152317-16	MW-21	Ground Water	04/17/19 14:35	04/17/19 16:10	

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

*8324

Chain of Custody Record 304422

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Rick Fragale	Site Contact: M. Cummings	Date: 4/17/19	COC No: 1 of 2 COCs
Company Name: GET Consultants	Tel/Fax:	Lab Contact: J. Schaver	Carrier: Hand Delivery	Sampler:
Address: 908 John Muir Drive	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Amherst NY 14228	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
Phone: 716-204-7155	TAT if different from Below			
Fax:	☒ 2 weeks			
Project Name: Minera Springs MGP	☐ 1 week			
Site:	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide, Total (9014)	Cyanide, Free (9016)	BTEX (8260C)	PAHs (8270D)	TDS (2540C)	TSS (2540D)	Cyanide, available (1677)
MW-17	4/17/19	1440	G	W				X	X	X	X			X
MW-13		1030						X	X	X	X			X
MW-14		0930						X	X					X
MW-20		1530						X	X					X
MW-21		1435						X	X					X
MW-22		1120						X	X					X
MW-23		0925						X	X	X				X
MW-12		1215						X	X					X
MW-16		1220						X	X					X
MW-07		1110								X	X			
MW-10		1030								X	X			
MW-11A		1330						X	X	X	X	X	X	

480-152317 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

3.8 #1

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:

	Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
		GET	4-17-19 1610			
	Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Allison Nikolb	Company: TA	Date/Time: 04/17/19 1610

TestAmerica Buffalo
10 Hazelwood Drive

Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

*8324

Chain of Custody Record

304425

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Rick Frappa	Site Contact: M. Cummings	Date: 4/17/19	COC No:
Company Name: GEI Consultants	Tel/Fax:	Lab Contact: S. Schoff	Carrier: Hand Delivery	2 of 2 COCs
Address: 90 B John Muir Drive	Analysis Turnaround Time			Sampler:
City/State/Zip: Amherst, NY 14228	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 716-204-7155	TAT if different from Below			Walk-in Client:
Fax:	☒ 2 weeks			Lab Sampling:
Project Name: Mineral Springs MGP	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide Total (9014)	Cyanide Free (9016)	BTEX (8260)	PAHs (8270D)	TDS (2540C)	TSS (2540D)	Cyanide Amenable (1677)	Sample Specific Notes:
MW-19	4/17/19	1310	G	W						X	X				
TRIP BLANK		—								X					
EB		1315						X	X	X	X			X	
DUPLICATE		—						X	X	X	X			X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GEI	4-17-19 1610			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Chris Nikolb	Company: TA	Date/Time: 04/17/19 1616

Part # 159489-43 RIT EXP 01/20
TestAm
THE LEADER IN ENVIRONMEN
ORIGIN ID:DKKA
CHAR BRONSON
TEST AMERICA
10 HAZELWOOD
AMHERST , NY 14228
UNITED STATES US
691-2600
SHIP DATE: 23APR19
ACTWGT: 21.95 LB
CAD: 8466554/CAFE3211
DIMS: 19x15x10 IN
BILL RECIPIENT
TO SAMPLE MGT.
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
REF: PITTSBURGH
(412) 963-7058
DEPT: SAMPLE CONTROL
FedEx Express
TRK# 0201 4276 0719 5446
WED - 24 APR 10:30A
PRIORITY OVERNIGHT
EV AGCA
15238
PA-US PIT
480-152317 Waybill
Uncorrected Temp
Thermometer ID
CF
Initials

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-49129.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-152317-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 4/29/2019			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GEI, Mineral Springs	Project #: 48008324			
Site: AECOM, Mineral Springs	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1677/ Cyanide, Available (Flow Injection)	Total Number of containers	Spe
			Preservation Code:						
MW-16 (480-152317-1)	4/17/19	12:20 Eastern		Water			X	1	
MW-20 (480-152317-2)	4/17/19	15:30 Eastern		Water			X	1	
Duplicate (480-152317-3)	4/17/19	Eastern		Water			X	1	
MW-14 (480-152317-4)	4/17/19	09:30 Eastern		Water			X	1	
MW-22 (480-152317-6)	4/17/19	11:20 Eastern		Water			X	1	
MW-23 (480-152317-7)	4/17/19	09:25 Eastern		Water			X	1	
MW-13 (480-152317-8)	4/17/19	10:30 Eastern		Water			X	1	
MW-17 (480-152317-9)	4/17/19	14:40 Eastern		Water			X	1	
MW-12 (480-152317-12)	4/17/19	12:15 Eastern		Water			X	1	

480-152317 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 4-23-19 1545	Company: TAL	Received by:	Date/Time: 4-24-19 700	Company: TAL PIT
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

3350

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 460-54691.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-152317-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 4/29/2019			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GEI, Mineral Springs	Project #: 48008324			
Site: AECOM, Mineral Springs	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1677/ Cyanide, Available (Flow Injection)	Total Number of containers	Special
			Preservation Code:						
MW-13 (480-152317-8)	4/17/19	10:30 Eastern		Water			X	1	

480-152317 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		5/1/19 1900	TAL	D Watson	5-3-19	TAL
2					845	
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

5/31/2019 (Rev. 1)

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-49130.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-152317-1
Address: 777 New Durham Road,	Due Date Requested: 4/29/2019			
City: Edison	TAT Requested (days):			
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			
Email:	WO #:			
Project Name: GEI, Mineral Springs	Project #: 48008324			
Site: AECOM, Mineral Springs	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9016/9016_Prep Cyanide, Free	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-16 (480-152317-1)	4/17/19	12:20 Eastern		Water			X	1	
MW-20 (480-152317-2)	4/17/19	15:30 Eastern		Water			X	1	
Duplicate (480-152317-3)	4/17/19	Eastern		Water			X	1	
MW-14 (480-152317-4)	4/17/19	09:30 Eastern		Water			X	1	
MW-22 (480-152317-6)	4/17/19	11:20 Eastern		Water			X	1	
MW-23 (480-152317-7)	4/17/19	09:25 Eastern		Water			X	1	
MW-13 (480-152317-8)	4/17/19	10:30 Eastern		Water			X	1	
MW-17 (480-152317-9)	4/17/19	14:40 Eastern		Water			X	1	
MW-12 (480-152317-12)	4/17/19	12:15 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-23-19 1525	TAB	[signature]		
Relinquished by: Fed Ex	Date/Time: 4/23/19 0930	Company	Received by: [signature]	Date/Time: 4/23/19 0930	Company FedEx
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

4.0°C IR9

CS=609702

5/31/2019 (Rev. 1)

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-49130.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-152317-1
Address: 777 New Durham Road, ,	Due Date Requested: 4/29/2019			Preservation Codes:
City: Edison	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			Other:
Email:	WO #:			
Project Name: GEI, Mineral Springs	Project #: 48008324			
Site: AECOM, Mineral Springs	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9016/9016_Prep Cyanide, Free	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-11A (480-152317-13)	4/17/19	13:30 Eastern		Water			X	1	
EB (480-152317-14)	4/17/19	13:15 Eastern		Water			X	1	
MW-21 (480-152317-16)	4/17/19	14:35 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmenca Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. I

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	4-23-19 1535	TAB			
Relinquished by: FedEx	Date/Time: 4/23/19 0930	Company	Received by: [signature]	Date/Time: 4/23/19 0930	Company TAFedEx
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: GEI Consultants, Inc.

Job Number: 480-152317-1

Login Number: 152317
List Number: 1
Creator: Velickovic, Zoran

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GEI
Samples received within 48 hours of sampling.	False	04/17/19
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: GEI Consultants, Inc.

Job Number: 480-152317-1

Login Number: 152317
List Number: 3
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 04/25/19 12:26 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	609702
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Tel: (716)691-2600

Laboratory Job ID: 480-152316-1
Client Project/Site: GEI, Mineral Springs
Revision: 1

For:
GEI Consultants, Inc.
90B John Muir Drive
Suite 104
Amherst, New York 14228

Attn: Richard Frappa

Authorized for release by:
6/11/2019 10:27:10 AM

John Schove, Project Manager II
(716)504-9838
john.schove@testamericainc.com

Table of Contents

Definitions/Glossary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 480-152316-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative
480-152316-1

Revision
This report has been revised to remove results that were not requested.

Receipt
The samples were received on 4/18/2019 11:38 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2º C.

GC/MS VOA
Method(s) 8260C: Surrogate recovery for the following samples were outside the upper control limit: (CCVIS 480-469666/3), (LCS 480-469666/5), (MB 480-469666/7), SW-02 (480-152316-2), (CCVIS 480-469873/4), (LCS 480-469873/6) and (MB 480-469873/8. Due to holding time limitations the associated samples were not reanalyzed.

Method(s) 8260C: The surrogate 4-Bromofluorobenzene (Surr) and Dibromofluoromethane (Surr) were outside the 20%D limits on the continuing calibration verification (CCV) but was within laboratory limits. The following sample is impacted: (CCVIS 480-469873/4) and : (CCVIS 480-469666/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) 9012B: The LCS for preparation batch 480-470844 and analytical batch 480-470909 recovered outside of the method acceptable limits of 90-110%. The LCS recovery was 87%. Due to results being within historical limits and holding time constraints the results are being reported. SW-01 (480-152316-1), SW-02 (480-152316-2), SW-03 (480-152316-3), SW-04 (480-152316-4) and SW-05 (480-152316-5)

Method(s) 9012B: A continuing calibration verification (CCV) associated with batch 480-470909 recovered above the upper control limit for Cyanide. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: SW-01 (480-152316-1) and SW-04 (480-152316-4).

Method(s) SM 2540C: Reanalysis of the following samples were performed outside of the analytical holding time due to analyst error, initial analysis non-reportable : SW-01 (480-152316-1) and SW-02 (480-152316-2).

Method(s) 9012B: A continuing calibration verification (CCV) associated with batch 480-470909 recovered above the upper control limit for Cyanide. Samples associated with this CCV were detected for the affected analyte due to holding time constraints the data have been qualified and reported. The following samples are impacted: SW-02 (480-152316-2), SW-03 (480-152316-3) and SW-04 (480-152316-4).

Method(s) 9012B: A continuing calibration blank (CCB) associated with batch 480-470909 contained Cyanide above the reporting limit (RL). Samples associated with this CCB were not non-detect nor 10X the analyte concentration in the CCB. Due to holding time constraints the results are qualified and reported. The following samples are impacted: SW-02 (480-152316-2), SW-03 (480-152316-3) and SW-04 (480-152316-4).

Method(s) 9012B: A continuing calibration blank (CCB) associated with batch 480-470909 contained Cyanide above the reporting limit (RL). The samples associated with this CCB were non-detects for the affected analyte; therefore, re-extraction and/or reanalysis of the samples were not performed and the data have been reported. The following samples are impacted: SW-01 (480-152316-1) and SW-05 (480-152316-5).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-01 — Lab Sample ID: 480-152316-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	771	H	10.0	4.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: SW-02 — Lab Sample ID: 480-152316-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.040	B * ^	0.010	0.0050	mg/L	1		9012B	Total/NA
Cyanide, Free	9.5		5.0	1.5	ug/L	1		9016	Total/NA
Total Dissolved Solids	363	H	10.0	4.0	mg/L	1		SM 2540C	Total/NA

Client Sample ID: SW-03 — Lab Sample ID: 480-152316-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.20	B * ^	0.010	0.0050	mg/L	1		9012B	Total/NA
Cyanide, Free	6.6		5.0	1.5	ug/L	1		9016	Total/NA

Client Sample ID: SW-04 — Lab Sample ID: 480-152316-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyanide, Total	0.010	B * F1 ^	0.010	0.0050	mg/L	1		9012B	Total/NA

Client Sample ID: SW-05 — Lab Sample ID: 480-152316-5

No Detections.

Client Sample ID: TB — Lab Sample ID: 480-152316-6

No Detections.

This Detection Summary does not include radiochemical test results.

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-01
Date Collected: 04/18/19 09:10
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-1
Matrix: Surface Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 15:33	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 15:33	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 15:33	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*77 - 120*		*04/25/19 15:33*	*1*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/25/19 15:33*	*1*
Dibromofluoromethane (Surr)	*122*		*75 - 123*		*04/25/19 15:33*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/25/19 15:33*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:10	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:10	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 18:10	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 18:10	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 18:10	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:10	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:10	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:10	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 18:10	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 18:10	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:10	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*48 - 120*	*04/23/19 15:08*	*04/24/19 18:10*	*1*
Nitrobenzene-d5	*90*		*46 - 120*	*04/23/19 15:08*	*04/24/19 18:10*	*1*
p-Terphenyl-d14	*70*		*24 - 136*	*04/23/19 15:08*	*04/24/19 18:10*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U * ^	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:03	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1
Total Dissolved Solids	**771**	**H**	10.0	4.0	mg/L			05/30/19 16:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	4.0	mg/L			04/25/19 12:04	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-02
Date Collected: 04/18/19 08:00
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-2
Matrix: Surface Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/26/19 13:01	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/26/19 13:01	1
Toluene	1.0	U	1.0	0.51	ug/L			04/26/19 13:01	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/26/19 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*77 - 120*		*04/26/19 13:01*	*1*
4-Bromofluorobenzene (Surr)	*122*	*X*	*73 - 120*		*04/26/19 13:01*	*1*
Dibromofluoromethane (Surr)	*124*	*X*	*75 - 123*		*04/26/19 13:01*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/26/19 13:01*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:40	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:40	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 18:40	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 18:40	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 18:40	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:40	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:40	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:40	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 18:40	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 18:40	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:40	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*100*		*48 - 120*	*04/23/19 15:08*	*04/24/19 18:40*	*1*
Nitrobenzene-d5	*90*		*46 - 120*	*04/23/19 15:08*	*04/24/19 18:40*	*1*
p-Terphenyl-d14	*71*		*24 - 136*	*04/23/19 15:08*	*04/24/19 18:40*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.040**	**B * ^**	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:04	1
Cyanide, Free	**9.5**		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1
Total Dissolved Solids	**363**	**H**	10.0	4.0	mg/L			05/30/19 16:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	4.0	mg/L			04/25/19 12:04	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-03

Date Collected: 04/18/19 08:30
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.20	B * ^	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:06	1
Cyanide, Free	6.6		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-04
Date Collected: 04/18/19 08:40
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-4
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	**0.010**	**B * F1 ^**	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:07	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-05

Date Collected: 04/18/19 09:00
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-5

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U * ^	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:10	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: TB
Date Collected: 04/18/19 00:00
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 16:21	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 16:21	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 16:21	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*77 - 120*		*04/25/19 16:21*	*1*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/25/19 16:21*	*1*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*04/25/19 16:21*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/25/19 16:21*	*1*

Surrogate Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Surface Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(77-120)	(73-120)	(75-123)	(80-120)
480-152316-1	SW-01	114	118	122	101
480-152316-2	SW-02	117	122 X	124 X	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(77-120)	(73-120)	(75-123)	(80-120)
480-152316-6	TB	116	118	118	101
LCS 480-469666/5	Lab Control Sample	121 X	127 X	122	112
LCS 480-469873/6	Lab Control Sample	111	127 X	122	109
MB 480-469666/7	Method Blank	118	124 X	123	107
MB 480-469873/8	Method Blank	117	117	126 X	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Matrix: Surface Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(48-120)	(46-120)	(24-136)
480-152316-1	SW-01	92	90	70
480-152316-2	SW-02	100	90	71

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPHd14
Lab Sample ID	Client Sample ID	(48-120)	(46-120)	(24-136)
LCS 480-469336/2-A	Lab Control Sample	92	85	103
LCSD 480-469336/3-A	Lab Control Sample Dup	100	82	86
MB 480-469336/1-A	Method Blank	95	95	92

Surrogate Legend

FBP = 2-Fluorobiphenyl

Surrogate Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

NBZ = Nitrobenzene-d5
TPHd14 = p-Terphenyl-d14

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 480-469666/7
Matrix: Water
Analysis Batch: 469666

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 12:05	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 12:05	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 12:05	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*77 - 120*		*04/25/19 12:05*	*1*
4-Bromofluorobenzene (Surr)	*124*	*X*	*73 - 120*		*04/25/19 12:05*	*1*
Dibromofluoromethane (Surr)	*123*		*75 - 123*		*04/25/19 12:05*	*1*
Toluene-d8 (Surr)	*107*		*80 - 120*		*04/25/19 12:05*	*1*

Lab Sample ID: LCS 480-469666/5
Matrix: Water
Analysis Batch: 469666

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	23.2		ug/L		93	71 - 124
Ethylbenzene	25.0	24.4		ug/L		97	77 - 123
Toluene	25.0	25.0		ug/L		100	80 - 122
Xylenes, Total	50.0	48.3		ug/L		97	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*121*	*X*	*77 - 120*
4-Bromofluorobenzene (Surr)	*127*	*X*	*73 - 120*
Dibromofluoromethane (Surr)	*122*		*75 - 123*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: MB 480-469873/8
Matrix: Water
Analysis Batch: 469873

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/26/19 11:21	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/26/19 11:21	1
Toluene	1.0	U	1.0	0.51	ug/L			04/26/19 11:21	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/26/19 11:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*77 - 120*		*04/26/19 11:21*	*1*
4-Bromofluorobenzene (Surr)	*117*		*73 - 120*		*04/26/19 11:21*	*1*
Dibromofluoromethane (Surr)	*126*	*X*	*75 - 123*		*04/26/19 11:21*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/26/19 11:21*	*1*

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 480-469873/6
Matrix: Water
Analysis Batch: 469873

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	25.0	22.6		ug/L		90	71 - 124
Ethylbenzene	25.0	24.1		ug/L		96	77 - 123
Toluene	25.0	24.0		ug/L		96	80 - 122
Xylenes, Total	50.0	47.5		ug/L		95	76 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*77 - 120*
4-Bromofluorobenzene (Surr)	*127*	*X*	*73 - 120*
Dibromofluoromethane (Surr)	*122*		*75 - 123*
Toluene-d8 (Surr)	*109*		*80 - 120*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Lab Sample ID: MB 480-469336/1-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469336

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 16:42	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 16:42	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 16:42	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 16:42	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 16:42	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 16:42	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 16:42	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 16:42	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 16:42	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 16:42	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 16:42	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 16:42	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 16:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*95*		*48 - 120*	*04/23/19 15:08*	*04/24/19 16:42*	*1*
Nitrobenzene-d5	*95*		*46 - 120*	*04/23/19 15:08*	*04/24/19 16:42*	*1*
p-Terphenyl-d14	*92*		*24 - 136*	*04/23/19 15:08*	*04/24/19 16:42*	*1*

Lab Sample ID: LCS 480-469336/2-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469336

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	32.0	30.0		ug/L		94	48 - 120
Acenaphthene	32.0	30.0		ug/L		94	60 - 120

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH (Continued)

Lab Sample ID: LCS 480-469336/2-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469336

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Acenaphthylene			32.0	32.6		ug/L		102	63 - 120		
Anthracene			32.0	32.7		ug/L		102	69 - 131		
Benzo(a)anthracene			32.0	30.0		ug/L		94	62 - 142		
Benzo(a)pyrene			32.0	31.9		ug/L		100	46 - 156		
Benzo(b)fluoranthene			32.0	31.8		ug/L		99	50 - 149		
Benzo(g,h,i)perylene			32.0	32.5		ug/L		102	34 - 189		
Benzo(k)fluoranthene			32.0	30.7		ug/L		96	47 - 147		
Chrysene			32.0	30.4		ug/L		95	69 - 140		
Dibenz(a,h)anthracene			32.0	31.8		ug/L		99	35 - 176		
Fluoranthene			32.0	37.9		ug/L		118	67 - 133		
Fluorene			32.0	34.0		ug/L		106	66 - 129		
Indeno(1,2,3-cd)pyrene			32.0	31.7		ug/L		99	57 - 161		
Naphthalene			32.0	27.2		ug/L		85	48 - 120		
Phenanthrene			32.0	30.2		ug/L		94	67 - 130		
Pyrene			32.0	34.4		ug/L		108	58 - 136		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*92*		*48 - 120*
Nitrobenzene-d5	*85*		*46 - 120*
p-Terphenyl-d14	*103*		*24 - 136*

Lab Sample ID: LCSD 480-469336/3-A
Matrix: Water
Analysis Batch: 469510

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 469336

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Methylnaphthalene			32.0	28.5		ug/L		89	48 - 120	5	21
Acenaphthene			32.0	28.2		ug/L		88	60 - 120	6	24
Acenaphthylene			32.0	28.6		ug/L		89	63 - 120	13	18
Anthracene			32.0	31.7		ug/L		99	69 - 131	3	15
Benzo(a)anthracene			32.0	29.2		ug/L		91	62 - 142	3	15
Benzo(a)pyrene			32.0	27.4		ug/L		86	46 - 156	15	15
Benzo(b)fluoranthene			32.0	29.3		ug/L		92	50 - 149	8	15
Benzo(g,h,i)perylene			32.0	28.5		ug/L		89	34 - 189	13	15
Benzo(k)fluoranthene			32.0	27.9		ug/L		87	47 - 147	10	22
Chrysene			32.0	29.0		ug/L		91	69 - 140	5	15
Dibenz(a,h)anthracene			32.0	28.1		ug/L		88	35 - 176	12	15
Fluoranthene			32.0	35.2		ug/L		110	67 - 133	7	15
Fluorene			32.0	33.9		ug/L		106	66 - 129	0	15
Indeno(1,2,3-cd)pyrene			32.0	28.4		ug/L		89	57 - 161	11	15
Naphthalene			32.0	28.2		ug/L		88	48 - 120	4	29
Phenanthrene			32.0	31.0		ug/L		97	67 - 130	3	15
Pyrene			32.0	31.8		ug/L		99	58 - 136	8	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*100*		*48 - 120*
Nitrobenzene-d5	*82*		*46 - 120*
p-Terphenyl-d14	*86*		*24 - 136*

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 480-470844/1-A
Matrix: Water
Analysis Batch: 470909

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 470844

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.00581	J	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 11:44	1

Lab Sample ID: LCS 480-470844/2-A
Matrix: Water
Analysis Batch: 470909

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 470844

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.250	0.218	* ^	mg/L		87	90 - 110

Lab Sample ID: 480-152316-4 MS
Matrix: Water
Analysis Batch: 470909

Client Sample ID: SW-04
Prep Type: Total/NA
Prep Batch: 470844

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	0.010	B * F1 ^	0.100	0.0925	F1 ^	mg/L		83	90 - 110

Method: 9016 - Cyanide, Free

Lab Sample ID: MB 460-605761/1-A
Matrix: Water
Analysis Batch: 605936

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605761

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Lab Sample ID: LCS 460-605761/2-A
Matrix: Water
Analysis Batch: 605936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605761

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Free	50.0	45.53		ug/L		91	78 - 110

Lab Sample ID: DLCK 460-605936/10
Matrix: Water
Analysis Batch: 605936

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	DLCK Result	DLCK Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Free	2.00	2.63	J	ug/L		132	50 - 150

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-475419/1
Matrix: Water
Analysis Batch: 475419

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	4.0	mg/L			05/30/19 16:05	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 480-475419/2
Matrix: Water
Analysis Batch: 475419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	500	492.0		mg/L		98	85 - 115

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 480-469747/1
Matrix: Water
Analysis Batch: 469747

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	1.0	U	1.0	1.0	mg/L			04/25/19 12:04	1

Lab Sample ID: LCS 480-469747/2
Matrix: Water
Analysis Batch: 469747

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	253	246.0		mg/L		97	88 - 110

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

GC/MS VOA

Analysis Batch: 469666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	8260C	
480-152316-6	TB	Total/NA	Water	8260C	
MB 480-469666/7	Method Blank	Total/NA	Water	8260C	
LCS 480-469666/5	Lab Control Sample	Total/NA	Water	8260C	

Analysis Batch: 469873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-2	SW-02	Total/NA	Surface Water	8260C	
MB 480-469873/8	Method Blank	Total/NA	Water	8260C	
LCS 480-469873/6	Lab Control Sample	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 469336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	3510C	
480-152316-2	SW-02	Total/NA	Surface Water	3510C	
MB 480-469336/1-A	Method Blank	Total/NA	Water	3510C	
LCS 480-469336/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 480-469336/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 469510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	8270D_LL_PAH	469336
480-152316-2	SW-02	Total/NA	Surface Water	8270D_LL_PAH	469336
MB 480-469336/1-A	Method Blank	Total/NA	Water	8270D_LL_PAH	469336
LCS 480-469336/2-A	Lab Control Sample	Total/NA	Water	8270D_LL_PAH	469336
LCSD 480-469336/3-A	Lab Control Sample Dup	Total/NA	Water	8270D_LL_PAH	469336

General Chemistry

Analysis Batch: 469747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	SM 2540D	
480-152316-2	SW-02	Total/NA	Surface Water	SM 2540D	
MB 480-469747/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 480-469747/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Prep Batch: 470844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	9012B	
480-152316-2	SW-02	Total/NA	Surface Water	9012B	
480-152316-3	SW-03	Total/NA	Water	9012B	
480-152316-4	SW-04	Total/NA	Water	9012B	
480-152316-5	SW-05	Total/NA	Water	9012B	
MB 480-470844/1-A	Method Blank	Total/NA	Water	9012B	
LCS 480-470844/2-A	Lab Control Sample	Total/NA	Water	9012B	
480-152316-4 MS	SW-04	Total/NA	Water	9012B	

Analysis Batch: 470909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	9012B	470844

General Chemistry (Continued)

Analysis Batch: 470909 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-2	SW-02	Total/NA	Surface Water	9012B	470844
480-152316-3	SW-03	Total/NA	Water	9012B	470844
480-152316-4	SW-04	Total/NA	Water	9012B	470844
480-152316-5	SW-05	Total/NA	Water	9012B	470844
MB 480-470844/1-A	Method Blank	Total/NA	Water	9012B	470844
LCS 480-470844/2-A	Lab Control Sample	Total/NA	Water	9012B	470844
480-152316-4 MS	SW-04	Total/NA	Water	9012B	470844

Analysis Batch: 475419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	SM 2540C	
480-152316-2	SW-02	Total/NA	Surface Water	SM 2540C	
MB 480-475419/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 480-475419/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Prep Batch: 605761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	9016	
480-152316-2	SW-02	Total/NA	Surface Water	9016	
480-152316-3	SW-03	Total/NA	Water	9016	
480-152316-4	SW-04	Total/NA	Water	9016	
480-152316-5	SW-05	Total/NA	Water	9016	
MB 460-605761/1-A	Method Blank	Total/NA	Water	9016	
LCS 460-605761/2-A	Lab Control Sample	Total/NA	Water	9016	

Analysis Batch: 605936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-152316-1	SW-01	Total/NA	Surface Water	9016	605761
480-152316-2	SW-02	Total/NA	Surface Water	9016	605761
480-152316-3	SW-03	Total/NA	Water	9016	605761
480-152316-4	SW-04	Total/NA	Water	9016	605761
480-152316-5	SW-05	Total/NA	Water	9016	605761
MB 460-605761/1-A	Method Blank	Total/NA	Water	9016	605761
DLCK 460-605936/10	Lab Control Sample	Total/NA	Water	9016	
LCS 460-605761/2-A	Lab Control Sample	Total/NA	Water	9016	605761

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-01

Lab Sample ID: 480-152316-1
Matrix: Surface Water
Date Collected: 04/18/19 09:10
Date Received: 04/18/19 11:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469666	04/25/19 15:33	OMI	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 18:10	RJS	TAL BUF
Total/NA	Prep	9012B			470844	05/01/19 10:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470909	05/02/19 12:03	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI
Total/NA	Analysis	SM 2540C		1	475419	05/30/19 16:05	CSS	TAL BUF
Total/NA	Analysis	SM 2540D		1	469747	04/25/19 12:04	RAF	TAL BUF

Client Sample ID: SW-02

Lab Sample ID: 480-152316-2
Matrix: Surface Water
Date Collected: 04/18/19 08:00
Date Received: 04/18/19 11:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469873	04/26/19 13:01	RJF	TAL BUF
Total/NA	Prep	3510C			469336	04/23/19 15:08	ATG	TAL BUF
Total/NA	Analysis	8270D_LL_PAH		1	469510	04/24/19 18:40	RJS	TAL BUF
Total/NA	Prep	9012B			470844	05/01/19 10:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470909	05/02/19 12:04	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI
Total/NA	Analysis	SM 2540C		1	475419	05/30/19 16:05	CSS	TAL BUF
Total/NA	Analysis	SM 2540D		1	469747	04/25/19 12:04	RAF	TAL BUF

Client Sample ID: SW-03

Lab Sample ID: 480-152316-3
Matrix: Water
Date Collected: 04/18/19 08:30
Date Received: 04/18/19 11:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470844	05/01/19 10:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470909	05/02/19 12:06	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: SW-04

Lab Sample ID: 480-152316-4
Matrix: Water
Date Collected: 04/18/19 08:40
Date Received: 04/18/19 11:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470844	05/01/19 10:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470909	05/02/19 12:07	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-05

Lab Sample ID: 480-152316-5

Date Collected: 04/18/19 09:00

Matrix: Water

Date Received: 04/18/19 11:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	9012B			470844	05/01/19 10:30	MDL	TAL BUF
Total/NA	Analysis	9012B		1	470909	05/02/19 12:10	MDL	TAL BUF
Total/NA	Prep	9016			605761	04/27/19 16:33	KYN	TAL EDI
Total/NA	Analysis	9016		1	605936	04/27/19 17:30	EMS	TAL EDI

Client Sample ID: TB

Lab Sample ID: 480-152316-6

Date Collected: 04/18/19 00:00

Matrix: Water

Date Received: 04/18/19 11:38

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	469666	04/25/19 16:21	OMI	TAL BUF

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Laboratory: Eurofins TestAmerica, Buffalo

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	10026	03-31-20

Laboratory: Eurofins TestAmerica, Edison

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
New York	NELAP	2	11452	04-01-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9016	9016	Surface Water	Cyanide, Free
9016	9016	Water	Cyanide, Free

Method Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL BUF
8270D_LL_PAH	Semivolatile Organic Compounds (GC/MS) Low level PAH	SW846	TAL BUF
9012B	Cyanide, Total andor Amenable	SW846	TAL BUF
9016	Cyanide, Free	SW846	TAL EDI
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL BUF
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL BUF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL BUF
5030C	Purge and Trap	SW846	TAL BUF
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL BUF
9016	Cyanide, Preparation	SW846	TAL EDI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL BUF = Eurofins TestAmerica, Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
480-152316-1	SW-01	Surface Water	04/18/19 09:10	04/18/19 11:38	
480-152316-2	SW-02	Surface Water	04/18/19 08:00	04/18/19 11:38	
480-152316-3	SW-03	Water	04/18/19 08:30	04/18/19 11:38	
480-152316-4	SW-04	Water	04/18/19 08:40	04/18/19 11:38	
480-152316-5	SW-05	Water	04/18/19 09:00	04/18/19 11:38	
480-152316-6	TB	Water	04/18/19 00:00	04/18/19 11:38	

TestAmerica Buffalo
10 Hazelwood Drive
Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

Chain of Custody Record 304419

FP324

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Rick Frappa	Site Contact: M. Cummings	Date: 4/18/19	COC No: 1 of 1 COCs
Company Name: GEI Consultants	Tel/Fax:	Lab Contact: J. Schive	Carrier: Hand Delivery	Sampler:
Address: 90B John Muir Drive	Analysis Turnaround Time			
City/State/Zip: Amherst NY 14228	☐ CALENDAR DAYS ☐ WORKING DAYS			
Phone: 716-204-7155	TAT if different from Below			
Fax:	☒ 2 weeks			
Project Name: Mineral Springs MGP	☐ 1 week			
Site:	☐ 2 days			
P O #	☐ 1 day			

480-152316 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide Total 9014	Cyanide Free 9016	Cyanide Amen	BTEX 8260C	PAHs 8270D	TDS 2540C	TSS 2540D	TRPH 1664A	Sample Specific Notes:
SW-01	4/18/19	910	G	W				X	X	X	X	X	X	X		
SW-02		800						X	X	X	X	X	X	X		
SW-03		830						X	X	X						
SW-04		840						X	X	X						
SW-05		900						X	X	X						
TRIP BLANK		—									X					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 3.2 Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	GEI	4/18/19 1138			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
				DAB	4-18-19 1138


480-152316 Waybill
TestAm
THE LEADER IN ENVIRONMEN
ORIGIN ID:DKKA
CHAR BRONSON
TEST AMERICA
10 HAZELWOOD
AMHERST , NY 14228
UNITED STATES US
691-2600
SHIP DATE: 23APR19
ACTWGT: 21.95 LB
CAD: 846654/CAFE3211
DIMS: 19x15x10 IN
BILL RECIPIENT
TO SAMPLE MGT.
TA PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH PA 15238
(412) 963-7058
DEPT: SAMPLE CONTROL
REF: PITTSBURGH
FedEx
Express
TRK# 0201 4276 0719 5446
WED - 24 APR 10:30A
PRIORITY OVERNIGHT
EV AGCA
15238
PA-US
PIT
Uncorrected temp
Thermometer ID
CF 0
Initials
PT-WI-SR-001

Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-49161.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-152316-1
Address: 301 Alpha Drive, RIDC Park,	Due Date Requested: 4/30/2019			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-963-7058(Tel) 412-963-2468(Fax)	PO #:			
Email:	WO #:			
Project Name: GEI, Mineral Springs	Project #: 48008324			
Site: AECOM, Mineral Springs	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1677/ Cyanide, Available (Flow Injection)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SW-01 (480-152316-1)	4/18/19	09:10 Eastern		Water			X	1	
SW-02 (480-152316-2)	4/18/19	08:00 Eastern		Water			X	1	
SW-03 (480-152316-3)	4/18/19	08:30 Eastern		Water			X	1	
SW-04 (480-152316-4)	4/18/19	08:40 Eastern		Water			X	1	
SW-05 (480-152316-5)	4/18/19	09:00 Eastern		Water			X	1	

480-152316 Chain of Custody

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		4-23-19 1545	Lab	P Waters	4-24-19 905	TAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica, Buffalo
10 Hazelwood Drive
Amherst, NY 14228-2298
Phone (716) 691-2600 Fax (716) 691-7991

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Schove, John R	Carrier Tracking No(s):	COC No: 480-49149.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: john.schove@testamericainc.com	State of Origin: New York	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - New York		Job #: 480-152316-1
Address: 777 New Durham Road,	Due Date Requested: 4/30/2019			Preservation Codes:
City: Edison	TAT Requested (days):			A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
State, Zip: NJ, 08817				
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			Other:
Email:	WO #:			
Project Name: GEI, Mineral Springs	Project #: 48008324			
Site: AECOM, Mineral Springs	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9016/9016_Prep Cyanide, Free	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SW-01 (480-152316-1)	4/18/19	09:10 Eastern		Water			X	1	
SW-02 (480-152316-2)	4/18/19	08:00 Eastern		Water			X	1	
SW-03 (480-152316-3)	4/18/19	08:30 Eastern		Water			X	1	
SW-04 (480-152316-4)	4/18/19	08:40 Eastern		Water			X	1	
SW-05 (480-152316-5)	4/18/19	09:00 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratones, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		4/23/19 1525	TAB			
2	FedEx	4/23/19 0930			4/23/19 0930	TAEdi
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

4.0°C IR9 CS:609702

Login Sample Receipt Checklist

Client: GEI Consultants, Inc.

Job Number: 480-152316-1

Login Number: 152316
List Number: 1
Creator: Velickovic, Zoran

List Source: Eurofins TestAmerica, Buffalo

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	GEI
Samples received within 48 hours of sampling.	False	04/18/19
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

Login Sample Receipt Checklist

Client: GEI Consultants, Inc.

Job Number: 480-152316-1

Login Number: 152316
List Number: 3
Creator: Armbruster, Chris

List Source: Eurofins TestAmerica, Edison
List Creation: 04/25/19 12:26 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	609702
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.0°C IR9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: GEI Consultants, Inc.

Job Number: 480-152316-1

Login Number: 152316
List Number: 4
Creator: Rivera, Kenneth

List Source: Eurofins TestAmerica, Edison
List Creation: 05/03/19 04:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix B

Data Usability Review

Site: Mineral Springs MGP
Laboratory: Test America, Amherst, NY
Report No.: 480-152317
Reviewer: Lorie MacKinnon/GEI Consultants
Date: June 6, 2019

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
MW-16	480-152317-01	Total/Free Cyanide
MW-20	480-152317-02	Total/Free Cyanide
Duplicate	480-152317-03	BTEX, PAH, Total/Free Cyanide
MW-14	480-152317-04	Total/Free Cyanide
MW-10	480-152317-05	BTEX, PAH
MW-22	480-152317-06	Total/Free Cyanide
MW-23	480-152317-07	BTEX, PAH, Total/Free Cyanide
MW-13	480-152317-08	BTEX, PAH, Total/Free Cyanide
MW-17	480-152317-09	BTEX, PAH, Total/Free Cyanide
MW-19	480-152317-10	BTEX, PAH
MW-07	480-152317-11	BTEX, PAH
MW-12	480-152317-12	Total/Free Cyanide
MW-11A	480-152317-13	BTEX, PAH, Total/Free Cyanide, TDS, TSS
EB	480-152317-14	BTEX, PAH, Total/Free Cyanide
TB	480-152317-15	BTEX
MW-21	480-152317-16	Total/Free Cyanide
QC Samples:	Field/Trip blanks:	EB, TB
	Field Duplicate pair:	MW-23/Duplicate

The above-listed ground water samples, field blank sample, and trip blank samples were collected on April 17, 2019 and were analyzed for BTEX volatile organic compounds (VOCs) by SW-846 method 8260C, polynuclear aromatic hydrocarbon (PAH) semivolatile organic compounds (SVOCs) by SW-846 method 8270D, total cyanide by SW-846 method 9012B, free cyanide by SW-846 method 9016, total dissolved solids (TDS) by Standard Methods SM2540C, and total suspended solids (TSS) by Standard Methods SM2540D. The data validation was performed based on the Standard Operating Procedure (SOP) HW-33 (Revision 3) *Low/Medium Volatile Data Validation* (March 2013), SOP HW-35 (Revision 2) *Semivolatile Data Validation* (March 2013), and SOP 2c (Revision 15), *SOP for the Evaluation of Cyanide (Inorganics) for the Contract Laboratory Program* (December 2012), as well as by the methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Initial and Continuing Calibrations

- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Internal Standard Results
- Laboratory Control Sample (LCS) Results
- Field Duplicate Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

In general, the data appear usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers. However, the following issue was noted which may have a significant impact on the data usability:

- The nondetect results for toluene and total xylenes in sample MW-19 were rejected (R) due to holding time exceedance. These results should not be used for decision-making purposes.

The validation findings were based on the following information.

Data Completeness

The data package was complete as received by the laboratory.

Holding Times and Sample Preservation

All holding time and preservative criteria were met except where noted below.

VOCs

Although sample MW-19 was collected in the correct preserved vials, at the time of analysis the pH was noted to be greater than 2. The sample was analyzed eight days after sample collection, one day past the required hold time of seven days for unpreserved samples. The positive results for benzene and ethylbenzene were qualified as estimated (J) and the nondetect results for toluene and xylene were rejected (R) in sample MW-19 due to the hold time exceedance.

Initial and Continuing Calibrations

All initial and continuing calibration criteria were met.

Blanks

Contamination was not detected in the associated method and instrument blank samples. Contamination was not detected in the associated field and trip blank samples.

Surrogate Recoveries

SVOC

All criteria were met for samples analyzed at dilutions less than 20.

VOCs

The following table summarizes the surrogates recovered outside of the laboratory control limits.

Sample	Surrogate	Recovery (%)	Control Limits (%)	Validation Actions
MW-23	Dibromofluoromethane	126	75-123	Validation actions were not required as all results were nondetect in sample MW-23 and therefore not affected by the potential high bias.
	4-Bromofluorobenzene	122	73-120	
MW-17	Dibromofluoromethane	124	75-123	Validation actions were not required as all results were nondetect in sample MW-17 and therefore not affected by the potential high bias.
MW-11A	Dibromofluoromethane	125	75-123	Validation actions were not required as all results were nondetect in sample MW-11A and therefore not affected by the potential high bias.
	4-Bromofluorobenzene	123	73-120	

MS/MSD Results

MS analyses were performed on samples MW-16, MW12, and MW-23 for total cyanide. MS/MSDs were performed on samples MW-7 for VOCs and sample MW-11A for free cyanide. All recovery and precision criteria were met, except where noted below.

VOCs

MW-07					
Analyte	**MS (%)**	**MSD (%)**	**RPD (%)**	**QC Limits (%)**	**Validation Actions**
VOCs					
Ethylbenzene	-	75	-	77-123	Estimate (J) the positive result for ethylbenzene in sample MW-07; Low bias.
- criterion met					

Laboratory Duplicate Results

Laboratory duplicate analyses were performed on sample MW-17 for total cyanide and sample MW-11A for TDS. Precision criteria was met.

Internal Standard Results

All criteria were met.

LCS/LCSD Results

All criteria were met.

Field Duplicate Results

Samples MW-23 and Duplicate were submitted as the field duplicate pair with this sample set. The following table summarizes the RPDs of the detected analytes in the field duplicate pair, which were within the acceptance criteria.

Analyte	MW-23 (ug/L)	Duplicate (ug/L)	RPD (%)
Benzo(a)pyrene	0.51	0.50 U	NC, Within the RL
Benzo(b)fluoranthene	0.51	0.50 U	NC, Within the RL
Benzo(ghi)perylene	0.38 J	0.50 U	NC, Within the RL
Chrysene	0.37 J	0.50 U	NC, Within the RL
Fluoranthene	0.94	0.39 J	82.7, Within the RL
Phenanthrene	0.61	0.50 U	NC, Within the RL
Pyrene	0.70	0.50 U	NC, Within the RL
Free Cyanide	38.6	52.0	29.6
Total Cyanide	320	320	0
NC – Not calculable Criteria: When both results are ≥5x the RL, RPDs must be <30%. When results are < 5x the RL, professional judgement was taken to estimate results if the absolute difference between the original and field duplicate >RL.			

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

The following table lists the sample dilutions which were performed.

Sample	VOC Analysis Reported	SVOC Analysis Reported	Free Cyanide Analysis Reported	Total Cyanide Analysis Reported
MW-16	NR	NR	A 5-fold dilution was performed.	A 10-fold dilution was performed.
MW-20	NR	NR	NR	A 5-fold dilution was performed.
MW-14	NR	NR	NR	A 5-fold dilution was performed.

Sample	VOC Analysis Reported	SVOC Analysis Reported	Free Cyanide Analysis Reported	Total Cyanide Analysis Reported
MW-22	NR	NR	NR	A 5-fold dilution was performed.
MW-12	NR	NR	NR	A 5-fold dilution was performed.
MW-17	A 2-fold dilution was performed due to sample foaming. RLs are elevated in this sample.	A 20-fold dilution was performed due to sample nature. RLs are elevated in this sample.	NR	NR
MW-19	A 100-fold dilution was performed due to high target compound levels. RLs are elevated in this sample.	A 200-fold dilution was performed due to high target compound levels. RLs are elevated in this sample.	NR	NR
MW-07	A 20-fold dilution was performed due to high target compound levels. RLs are elevated in this sample.	A 100-fold dilution was performed due to high target compound levels. RLs are elevated in this sample.	NR	NR
MW-11A	A 2-fold dilution was performed due to sample foaming. RLs are elevated in this sample.	NR	NR	NR
NR – Dilution was not required.				

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted. A comparison of total and free cyanide results was performed. All sample total cyanide results exceeded those of the free cyanide.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

NJ - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-16
Date Collected: 04/17/19 12:20
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-1
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	3.1		0.10	0.050	mg/L		04/30/19 11:30	05/01/19 11:40	10
Cyanide, Free	149		25.0	7.7	ug/L		04/27/19 16:33	04/27/19 17:30	5

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-20
Date Collected: 04/17/19 15:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-2
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	1.3		0.050	0.025	mg/L		04/30/19 11:30	05/01/19 11:43	5
Cyanide, Free	15.2		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample ID: Duplicate

Date Collected: 04/17/19 00:00
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-3
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 14:10	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 14:10	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 14:10	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*04/25/19 14:10*	*1*
4-Bromofluorobenzene (Surr)	*102*		*73 - 120*		*04/25/19 14:10*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 123*		*04/25/19 14:10*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*04/25/19 14:10*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:09	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:09	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 19:09	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:09	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 19:09	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 19:09	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:09	1
Fluoranthene	0.39	J	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:09	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:09	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 19:09	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 19:09	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:09	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*107*		*48 - 120*	*04/23/19 15:08*	*04/24/19 19:09*	*1*
Nitrobenzene-d5	*101*		*46 - 120*	*04/23/19 15:08*	*04/24/19 19:09*	*1*
p-Terphenyl-d14	*68*		*24 - 136*	*04/23/19 15:08*	*04/24/19 19:09*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.32		0.010	0.0050	mg/L		04/30/19 11:30	05/01/19 10:56	1
Cyanide, Free	52.0		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-14
Date Collected: 04/17/19 09:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-4
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.89		0.050	0.025	mg/L		04/30/19 11:30	05/01/19 11:44	5
Cyanide, Free	5.9		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample ID: MW-10

Date Collected: 04/17/19 10:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-5

Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 14:36	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 14:36	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 14:36	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*77 - 120*		*04/25/19 14:36*	*1*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*04/25/19 14:36*	*1*
Dibromofluoromethane (Surr)	*101*		*75 - 123*		*04/25/19 14:36*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/25/19 14:36*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:38	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:38	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 19:38	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:38	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 19:38	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 19:38	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 19:38	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:38	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 19:38	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 19:38	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 19:38	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 19:38	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 19:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*99*		*48 - 120*	*04/23/19 15:08*	*04/24/19 19:38*	*1*
Nitrobenzene-d5	*98*		*46 - 120*	*04/23/19 15:08*	*04/24/19 19:38*	*1*
p-Terphenyl-d14	*69*		*24 - 136*	*04/23/19 15:08*	*04/24/19 19:38*	*1*

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-22
Date Collected: 04/17/19 11:20
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-6
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.85		0.050	0.025	mg/L		04/30/19 11:30	05/01/19 11:46	5
Cyanide, Free	25.0		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample ID: MW-23
Date Collected: 04/17/19 09:25
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-7
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 16:45	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 16:45	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 16:45	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*77 - 120*		*04/25/19 16:45*	*1*
4-Bromofluorobenzene (Surr)	*122*	*X*	*73 - 120*		*04/25/19 16:45*	*1*
Dibromofluoromethane (Surr)	*126*	*X*	*75 - 123*		*04/25/19 16:45*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/25/19 16:45*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:08	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:08	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 20:08	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(a)pyrene	0.51		0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(b)fluoranthene	0.51		0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(g,h,i)perylene	0.38	J	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:08	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 20:08	1
Chrysene	0.37	J	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 20:08	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:08	1
Fluoranthene	0.94		0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:08	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:08	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 20:08	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 20:08	1
Phenanthrene	0.61		0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:08	1
Pyrene	0.70		0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*116*		*48 - 120*	*04/23/19 15:08*	*04/24/19 20:08*	*1*
Nitrobenzene-d5	*119*		*46 - 120*	*04/23/19 15:08*	*04/24/19 20:08*	*1*
p-Terphenyl-d14	*86*		*24 - 136*	*04/23/19 15:08*	*04/24/19 20:08*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.32		0.010	0.0050	mg/L		04/30/19 11:30	05/01/19 11:03	1
Cyanide, Free	38.6		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample ID: MW-13
Date Collected: 04/17/19 10:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-8
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 17:09	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 17:09	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 17:09	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*77 - 120*		*04/25/19 17:09*	*1*
4-Bromofluorobenzene (Surr)	*119*		*73 - 120*		*04/25/19 17:09*	*1*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*04/25/19 17:09*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/25/19 17:09*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:37	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:37	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 20:37	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:37	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 20:37	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 20:37	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 20:37	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:37	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 20:37	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 20:37	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 20:37	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 20:37	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 20:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*100*		*48 - 120*	*04/23/19 15:08*	*04/24/19 20:37*	*1*
Nitrobenzene-d5	*98*		*46 - 120*	*04/23/19 15:08*	*04/24/19 20:37*	*1*
p-Terphenyl-d14	*67*		*24 - 136*	*04/23/19 15:08*	*04/24/19 20:37*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.012		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:05	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-17
Date Collected: 04/17/19 14:40
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-9
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	2.0	0.82	ug/L			04/26/19 12:14	2
Ethylbenzene	2.0	U	2.0	1.5	ug/L			04/26/19 12:14	2
Toluene	2.0	U	2.0	1.0	ug/L			04/26/19 12:14	2
Xylenes, Total	4.0	U	4.0	1.3	ug/L			04/26/19 12:14	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*115*		*77 - 120*		*04/26/19 12:14*	*2*
4-Bromofluorobenzene (Surr)	*117*		*73 - 120*		*04/26/19 12:14*	*2*
Dibromofluoromethane (Surr)	*124*	*X*	*75 - 123*		*04/26/19 12:14*	*2*
Toluene-d8 (Surr)	*104*		*80 - 120*		*04/26/19 12:14*	*2*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	10	U	10	7.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Acenaphthene	10	U	10	6.0	ug/L		04/23/19 15:08	04/24/19 21:07	20
Acenaphthylene	10	U	10	6.8	ug/L		04/23/19 15:08	04/24/19 21:07	20
Anthracene	10	U	10	7.8	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(a)anthracene	10	U	10	8.0	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(a)pyrene	10	U	10	6.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(b)fluoranthene	10	U	10	6.0	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(g,h,i)perylene	10	U	10	7.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Benzo(k)fluoranthene	10	U	10	1.7	ug/L		04/23/19 15:08	04/24/19 21:07	20
Chrysene	10	U	10	6.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Dibenz(a,h)anthracene	10	U	10	6.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Fluoranthene	10	U	10	7.2	ug/L		04/23/19 15:08	04/24/19 21:07	20
Fluorene	10	U	10	7.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Indeno(1,2,3-cd)pyrene	10	U	10	8.8	ug/L		04/23/19 15:08	04/24/19 21:07	20
Naphthalene	10	U	10	8.4	ug/L		04/23/19 15:08	04/24/19 21:07	20
Phenanthrene	10	U	10	7.6	ug/L		04/23/19 15:08	04/24/19 21:07	20
Pyrene	10	U	10	7.2	ug/L		04/23/19 15:08	04/24/19 21:07	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*93*		*48 - 120*	*04/23/19 15:08*	*04/24/19 21:07*	*20*
Nitrobenzene-d5	*76*		*46 - 120*	*04/23/19 15:08*	*04/24/19 21:07*	*20*
p-Terphenyl-d14	*74*		*24 - 136*	*04/23/19 15:08*	*04/24/19 21:07*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.16		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:06	1
Cyanide, Free	3.3	J	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-19
Date Collected: 04/17/19 13:10
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-10
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4100	J	100	41	ug/L			04/25/19 17:57	100
Ethylbenzene	430	J	100	74	ug/L			04/25/19 17:57	100
Toluene	~~100~~ U	R	100	51	ug/L			04/25/19 17:57	100
Xylenes, Total	~~200~~ U	R	200	66	ug/L			04/25/19 17:57	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*112*		*77 - 120*		*04/25/19 17:57*	*100*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/25/19 17:57*	*100*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*04/25/19 17:57*	*100*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/25/19 17:57*	*100*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	100	U	100	76	ug/L		04/23/19 15:08	04/24/19 21:36	200
Acenaphthene	100	U	100	60	ug/L		04/23/19 15:08	04/24/19 21:36	200
Acenaphthylene	100	U	100	68	ug/L		04/23/19 15:08	04/24/19 21:36	200
Anthracene	100	U	100	78	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(a)anthracene	100	U	100	80	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(a)pyrene	100	U	100	66	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(b)fluoranthene	100	U	100	60	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(g,h,i)perylene	100	U	100	74	ug/L		04/23/19 15:08	04/24/19 21:36	200
Benzo(k)fluoranthene	100	U	100	17	ug/L		04/23/19 15:08	04/24/19 21:36	200
Chrysene	100	U	100	64	ug/L		04/23/19 15:08	04/24/19 21:36	200
Dibenz(a,h)anthracene	100	U	100	66	ug/L		04/23/19 15:08	04/24/19 21:36	200
Fluoranthene	100	U	100	72	ug/L		04/23/19 15:08	04/24/19 21:36	200
Fluorene	100	U	100	74	ug/L		04/23/19 15:08	04/24/19 21:36	200
Indeno(1,2,3-cd)pyrene	100	U	100	88	ug/L		04/23/19 15:08	04/24/19 21:36	200
Naphthalene	3600		100	84	ug/L		04/23/19 15:08	04/24/19 21:36	200
Phenanthrene	100	U	100	76	ug/L		04/23/19 15:08	04/24/19 21:36	200
Pyrene	100	U	100	72	ug/L		04/23/19 15:08	04/24/19 21:36	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*48 - 120*	*04/23/19 15:08*	*04/24/19 21:36*	*200*
Nitrobenzene-d5	*0*	*X*	*46 - 120*	*04/23/19 15:08*	*04/24/19 21:36*	*200*
p-Terphenyl-d14	*62*		*24 - 136*	*04/23/19 15:08*	*04/24/19 21:36*	*200*

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-07
Date Collected: 04/17/19 11:10
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-11
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	320		20	8.2	ug/L			04/25/19 15:03	20
Ethylbenzene	590	~~F1~~ J	20	15	ug/L			04/25/19 15:03	20
Toluene	20	U	20	10	ug/L			04/25/19 15:03	20
Xylenes, Total	290		40	13	ug/L			04/25/19 15:03	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*77 - 120*		*04/25/19 15:03*	*20*
4-Bromofluorobenzene (Surr)	*103*		*73 - 120*		*04/25/19 15:03*	*20*
Dibromofluoromethane (Surr)	*99*		*75 - 123*		*04/25/19 15:03*	*20*
Toluene-d8 (Surr)	*99*		*80 - 120*		*04/25/19 15:03*	*20*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	100		50	38	ug/L		04/23/19 15:08	04/24/19 22:06	100
Acenaphthene	57		50	30	ug/L		04/23/19 15:08	04/24/19 22:06	100
Acenaphthylene	50	U	50	34	ug/L		04/23/19 15:08	04/24/19 22:06	100
Anthracene	50	U	50	39	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(a)anthracene	50	U	50	40	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(a)pyrene	50	U	50	33	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(b)fluoranthene	50	U	50	30	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(g,h,i)perylene	50	U	50	37	ug/L		04/23/19 15:08	04/24/19 22:06	100
Benzo(k)fluoranthene	50	U	50	8.5	ug/L		04/23/19 15:08	04/24/19 22:06	100
Chrysene	50	U	50	32	ug/L		04/23/19 15:08	04/24/19 22:06	100
Dibenz(a,h)anthracene	50	U	50	33	ug/L		04/23/19 15:08	04/24/19 22:06	100
Fluoranthene	50	U	50	36	ug/L		04/23/19 15:08	04/24/19 22:06	100
Fluorene	50	U	50	37	ug/L		04/23/19 15:08	04/24/19 22:06	100
Indeno(1,2,3-cd)pyrene	50	U	50	44	ug/L		04/23/19 15:08	04/24/19 22:06	100
Naphthalene	1000		50	42	ug/L		04/23/19 15:08	04/24/19 22:06	100
Phenanthrene	50	U	50	38	ug/L		04/23/19 15:08	04/24/19 22:06	100
Pyrene	50	U	50	36	ug/L		04/23/19 15:08	04/24/19 22:06	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*48 - 120*	*04/23/19 15:08*	*04/24/19 22:06*	*100*
Nitrobenzene-d5	*62*		*46 - 120*	*04/23/19 15:08*	*04/24/19 22:06*	*100*
p-Terphenyl-d14	*51*		*24 - 136*	*04/23/19 15:08*	*04/24/19 22:06*	*100*

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-12
Date Collected: 04/17/19 12:15
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-12
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	1.0		0.050	0.025	mg/L		04/30/19 12:50	05/01/19 12:38	5
Cyanide, Free	34.8		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-11A
Date Collected: 04/17/19 13:30
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-13
Matrix: Ground Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.0	U	2.0	0.82	ug/L			04/26/19 12:38	2
Ethylbenzene	2.0	U	2.0	1.5	ug/L			04/26/19 12:38	2
Toluene	2.0	U	2.0	1.0	ug/L			04/26/19 12:38	2
Xylenes, Total	4.0	U	4.0	1.3	ug/L			04/26/19 12:38	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*77 - 120*		*04/26/19 12:38*	*2*
4-Bromofluorobenzene (Surr)	*123*	*X*	*73 - 120*		*04/26/19 12:38*	*2*
Dibromofluoromethane (Surr)	*125*	*X*	*75 - 123*		*04/26/19 12:38*	*2*
Toluene-d8 (Surr)	*103*		*80 - 120*		*04/26/19 12:38*	*2*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 22:35	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 22:35	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 22:35	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 22:35	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 22:35	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 22:35	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 22:35	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 22:35	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 22:35	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 22:35	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 22:35	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 22:35	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 22:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*101*		*48 - 120*	*04/23/19 15:08*	*04/24/19 22:35*	*1*
Nitrobenzene-d5	*100*		*46 - 120*	*04/23/19 15:08*	*04/24/19 22:35*	*1*
p-Terphenyl-d14	*72*		*24 - 136*	*04/23/19 15:08*	*04/24/19 22:35*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.33		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:12	1
Cyanide, Free	19.5		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1
Total Dissolved Solids	653		10.0	4.0	mg/L			04/24/19 22:16	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	26.8		4.0	4.0	mg/L			04/24/19 22:38	1

Client Sample ID: EB

Date Collected: 04/17/19 13:15
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-14
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 18:44	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 18:44	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 18:44	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 18:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*77 - 120*		*04/25/19 18:44*	*1*
4-Bromofluorobenzene (Surr)	*116*		*73 - 120*		*04/25/19 18:44*	*1*
Dibromofluoromethane (Surr)	*113*		*75 - 123*		*04/25/19 18:44*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/25/19 18:44*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 23:05	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 23:05	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 23:05	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 23:05	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 23:05	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 23:05	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 23:05	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 23:05	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 23:05	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 23:05	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 23:05	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 23:05	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 23:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*48 - 120*	*04/23/19 15:08*	*04/24/19 23:05*	*1*
Nitrobenzene-d5	*73*		*46 - 120*	*04/23/19 15:08*	*04/24/19 23:05*	*1*
p-Terphenyl-d14	*73*		*24 - 136*	*04/23/19 15:08*	*04/24/19 23:05*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U	0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:13	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: TB
Date Collected: 04/17/19 00:00
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-15
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 19:08	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 19:08	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 19:08	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 19:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*77 - 120*		*04/25/19 19:08*	*1*
4-Bromofluorobenzene (Surr)	*120*		*73 - 120*		*04/25/19 19:08*	*1*
Dibromofluoromethane (Surr)	*119*		*75 - 123*		*04/25/19 19:08*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*04/25/19 19:08*	*1*

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152317-1

Client Sample ID: MW-21
Date Collected: 04/17/19 14:35
Date Received: 04/17/19 16:10

Lab Sample ID: 480-152317-16
Matrix: Ground Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.48		0.010	0.0050	mg/L		04/30/19 12:50	05/01/19 12:18	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

TestAmerica Buffalo
10 Hazelwood Drive

Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

*8324

Chain of Custody Record

304422

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Rick Fonda	Site Contact: M. Cummings	Date: 4/17/19	COC No: 1 of 2 COCs
Company Name: GEI Consultants	Tel/Fax:	Lab Contact: J. Schaub	Carrier: HAND DELIVERY	Sampler:
Address: 90B John Miller Drive	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Amherst, NY 14228	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
Phone: 716-204-7155	TAT if different from Below			
Fax:	X 2 weeks			
Project Name: MINERAL SPRINGS MGP	☐ 1 week			
Site:	☐ 2 days			
PO #	☐ 1 day			

480-152317 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Cyanide, Total (9014)	Cyanide, Free (9016)	BTEX (8260C)	PAHs (8270D)	TDS (2540C)	TSS (2540D)	Cyanide, available (OIA-1677)	Special Instructions/Note:
-09 MW-17	4/17/19	1440	G	W				X	X	X	X			X	
-08 MW-13		1030						X	X	X	X			X	
-04 MW-14		0930						X	X					X	
-02 MW-20		1530						X	X					X	
-16 MW-21		1435						X	X					X	Available CN not required
-06 MW-22		1120						X	X					X	dsm 6/3/19
-07 MW-23		0925						X	X	X				X	
-12 MW-12		1215						X	X					X	
-01 MW-16		1220						X	X					X	
-11 MW-07		1110								X	X				
-05 MW-10		1030								X	X				
-13 MW-11A		1330						X	X	X	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client X Disposal by Lab ☐ Archive for: Months

Special Instructions/QC Requirements & Comments:

3.8 #1

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: Corr'd: | Therm ID No.:

	Company	Date/Time	Received by	Company	Date/Time
Relinquished by:	GEI	4-17-19 1610			
Relinquished by:					
Relinquished by:			Received in Laboratory by:	TA	04/17/19 1610

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5/14/2019

TestAmerica Buffalo
10 Hazelwood Drive

Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

Chain of Custody Record 304425

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Rick Frappa	Site Contact: M. Cummings	Date: 4/17/19	COC No:
Company Name: GEI Consultants	Tel/Fax:	Lab Contact: J. Schaad	Carrier: Hand Delivery	2 of 2 COCs
Address: 90 B John Muir Drive	Analysis Turnaround Time			Sampler:
City/State/Zip: Amherst, NY 14228	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 716-204-7155	TAT if different from Below ____			Walk-in Client:
Fax:	X 2 weeks			Lab Sampling:
Project Name: Mineral Springs MGP	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Cyanide Total (9014)	Cyanide Free (9016)	BTEX (8260)	PAHs (8270D)	TDS (2540C)	TSS (2540D)	Cyanide Amenable (1677)	Sample Specific Notes:
10 MW-19	4/17/19	1310	G	W						X					
15 TRIP BLANK		—								X					
14 EB		1315						X	X	X	X			X	
03 DUPLICATE		—						X	X	X	X			X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

X Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client X Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ | Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	GEI	4-17-19 1610			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: [signature]	Company: TA	Date/Time: 04/17/19 1610

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5/14/2019

Site: Mineral Springs MGP
Laboratory: Test America, Amherst, NY
Report No.: 480-152316
Reviewer: Lorie MacKinnon/GEI Consultants
Date: June 24, 2019

Samples Reviewed and Evaluation Summary

FIELD ID	LAB ID	FRACTIONS VALIDATED
SW-01	480-152316-01	BTEX, PAH, Total/Free Cyanide, TDS, TSS
SW-02	480-152316-02	BTEX, PAH, Total/Free Cyanide, TDS, TSS
SW-03	480-152316-03	Total/Free Cyanide
SW-04	480-152316-04	Total/Free Cyanide
SW-05	480-152316-05	Total/Free Cyanide
TB	480-152316-06	BTEX

Associated QC Samples: Trip blanks: TB

The above-listed aqueous samples and trip blank sample were collected on April 18, 2019 and were analyzed for BTEX volatile organic compounds (VOCs) by SW-846 method 8260C, polynuclear aromatic hydrocarbon (PAH) semivolatile organic compounds (SVOCs) by SW-846 method 8270D, total cyanide by SW-846 method 9012B, free cyanide by SW-846 method 9016, total dissolved solids (TDS) by Standard Methods SM2540C, and total suspended solids (TSS) by Standard Methods SM2540D. The data validation was performed based on the Standard Operating Procedure (SOP) HW-33 (Revision 3) *Low/Medium Volatile Data Validation* (March 2013), SOP HW-35 (Revision 2) *Semivolatile Data Validation* (March 2013), and SOP 2c (Revision 15), *SOP for the Evaluation of Cyanide (Inorganics) for the Contract Laboratory Program* (December 2012), as well as by the methods referenced by the data package and professional and technical judgment.

The data were evaluated based on the following parameters:

- Data Completeness
- Holding Times and Sample Preservation
- Initial and Continuing Calibrations
- Blanks
- Surrogate Recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- Laboratory Duplicate Results
- Internal Standard Results
- Laboratory Control Sample (LCS) Results
- Quantitation Limits and Data Assessment
- Sample Quantitation and Compound Identification

In general, the data appear usable as reported or usable with minor qualification due to sample matrix or laboratory quality control outliers.

The validation findings were based on the following information.

Data Completeness

The data package was complete as received by the laboratory.

Holding Times and Sample Preservation

All holding time and preservative criteria were met except where noted below.

TDS

Due to laboratory error, the total dissolved solids analysis for samples SW-01 and SW-02 was performed five days outside of method hold time of seven days. The positive results for TDS in samples SW-01 and SW-02 were qualified as estimated (J). Results may be biased low.

Initial and Continuing Calibrations

All initial and continuing calibration criteria were met except where noted below.

Total Cyanide

Calibration Standard	Analyte	Calibration Exceedance	Validation Qualifier
CCV 05/02/19 12:16	Total Cyanide	115 %	Estimate (J) the positive results for total cyanide in samples SW-02 and SW-03; High bias. Validation actions were not required for the remaining samples as results were nondetect and therefore not affected by the potential high bias.
Associated samples: SW-01, SW-02, SW-03, SW-04, SW-05			

Continuing calibration verification (CCV) recovery (%R) outside of the laboratory control limits of 90-110; estimate (J/UJ) positive and nondetect results dependent of recovery.

Blanks

Contaminants were not detected in the associated trip blank sample. Contamination was not detected in the associated method and instrument blank samples except where noted below.

Analyte	Blank ID/ Associated Samples	Maximum Concentration	10X Action Level	Validation Actions
Total cyanide	05/02 Method/Instrument blanks: SW-01, SW-02, SW-03, SW-04, SW-05	0.0113 mg/L	0.113 mg/L	Qualify the result for total cyanide as nondetect (U) at the RL in sample SW-04. Estimate (J) the positive result for total cyanide in sample SW-02; High bias.

Blank Actions:
If the sample result is < RL (<2xRL for common contaminants); report the result as nondetect (U) at the reporting limit (RL) or reported value.
If the sample result is ≥ RL and <blank contamination detected; report the result as nondetect (U) at the reported value.
If the sample result is ≥ RL and < 10x Action Level; professional judgment was taken to report the sample result as estimated (J); biased high.
If the sample result is nondetect or > 10x Action Level; validation action is not required.

Surrogate Recoveries

All surrogate recovery criteria were met except where noted below.

VOCs

The following table summarizes the surrogates recovered outside of the laboratory control limits.

Sample	Surrogate	Recovery (%)	Control Limits (%)	Validation Actions
SW-02	Dibromofluoromethane	124	75-123	Validation actions were not required as all results were nondetect in sample SW-02 and therefore not affected by the potential high bias.
	4-Bromofluorobenzene	122	73-120	

MS/MSD Results

An MS analysis was performed on sample SW-04 for total cyanide.

MS Sample	Analyte	MS (%)	Control Limits (%)	Validation Action/Bias
SW-04	Cyanide	83	90-110	Estimate (J/UJ) the positive and nondetect results for cyanide in the associated samples; Low bias.
Associated samples: SW-01, SW-02, SW-03, SW-04, SW-05				

Laboratory Duplicate Results

A Project laboratory duplicate analysis was not associated with this sample set.

Internal Standard Results

All criteria were met.

LCS/LCSD Results

All criteria were met except where noted below.

Total Cyanide

LCS ID	Compound	Recovery (%)	Control Limits (%)	Validation Action/Bias
LCS 480-470844	Total cyanide	87	90-110	Estimate (J/UJ) the positive and nondetect results for total cyanide in the associated samples; Low bias.
Associated samples: SW-01, SW-02, SW-03, SW-04, SW-05				

Quantitation Limits and Data Assessment

Results were reported which were below the reporting limit (RL) and above the method detection limit (MDL). These results were qualified as estimated (J) by the laboratory.

No results in this sample set were qualified as rejected. All results were considered valid; even though some were qualified as discussed above.

Sample Quantitation and Compound Identification

Calculations were spot-checked; no discrepancies were noted. A comparison of total and free cyanide results was performed. All sample total cyanide results exceeded those of the free cyanide.

DATA VALIDATION QUALIFIERS

U - The analyte was analyzed for, but due to blank contamination was flagged as nondetect (U). The result is usable as a nondetect.

J - Data are flagged (J) when a QC analysis fails outside the primary acceptance limits. The qualified "J" data are not excluded from further review or consideration. However, only one flag (J) is applied to a sample result, even though several associated QC analyses may fail. The 'J' data may be biased high or low or the direction of the bias may be indeterminable.

UJ - The analyte was not detected above the reported sample quantitation limit. Data are flagged (UJ) when a QC analysis fails outside the primary acceptance limits. The qualified "UJ" data are not excluded from further review or consideration. However, only one flag is applied to a sample result, even though several associated QC analyses may fail. The 'UJ' data may be biased low.

NJ - The analysis indicates the presence of a compound that has been "tentatively identified" (N) and the associated numerical value represents its approximate (J) concentration.

R - Data rejected (R) on the basis of an unacceptable QC analysis should be excluded from further review or consideration. Data are rejected when associated QC analysis results exceed the expanded control limits of the QC criteria. The rejected data are known to contain significant errors based on documented information. The data user must not use the rejected data to make environmental decisions. The presence or absence of the analyte cannot be verified.

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-01
Date Collected: 04/18/19 09:10
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-1
Matrix: Surface Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 15:33	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 15:33	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 15:33	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 15:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*77 - 120*		*04/25/19 15:33*	*1*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/25/19 15:33*	*1*
Dibromofluoromethane (Surr)	*122*		*75 - 123*		*04/25/19 15:33*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/25/19 15:33*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:10	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:10	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 18:10	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:10	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 18:10	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 18:10	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:10	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:10	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:10	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 18:10	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 18:10	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:10	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*48 - 120*	*04/23/19 15:08*	*04/24/19 18:10*	*1*
Nitrobenzene-d5	*90*		*46 - 120*	*04/23/19 15:08*	*04/24/19 18:10*	*1*
p-Terphenyl-d14	*70*		*24 - 136*	*04/23/19 15:08*	*04/24/19 18:10*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	~~U~~ UJ	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:03	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1
Total Dissolved Solids	771	~~H~~ J	10.0	4.0	mg/L			05/30/19 16:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	4.0	mg/L			04/25/19 12:04	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-02
Date Collected: 04/18/19 08:00
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-2
Matrix: Surface Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/26/19 13:01	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/26/19 13:01	1
Toluene	1.0	U	1.0	0.51	ug/L			04/26/19 13:01	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/26/19 13:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*117*		*77 - 120*		*04/26/19 13:01*	*1*
4-Bromofluorobenzene (Surr)	*122*	*X*	*73 - 120*		*04/26/19 13:01*	*1*
Dibromofluoromethane (Surr)	*124*	*X*	*75 - 123*		*04/26/19 13:01*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*04/26/19 13:01*	*1*

Method: 8270D_LL_PAH - Semivolatile Organic Compounds (GC/MS) Low level PAH

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:40	1
Acenaphthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:40	1
Acenaphthylene	0.50	U	0.50	0.34	ug/L		04/23/19 15:08	04/24/19 18:40	1
Anthracene	0.50	U	0.50	0.39	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(a)anthracene	0.50	U	0.50	0.40	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(a)pyrene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(b)fluoranthene	0.50	U	0.50	0.30	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(g,h,i)perylene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:40	1
Benzo(k)fluoranthene	0.50	U	0.50	0.085	ug/L		04/23/19 15:08	04/24/19 18:40	1
Chrysene	0.50	U	0.50	0.32	ug/L		04/23/19 15:08	04/24/19 18:40	1
Dibenz(a,h)anthracene	0.50	U	0.50	0.33	ug/L		04/23/19 15:08	04/24/19 18:40	1
Fluoranthene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:40	1
Fluorene	0.50	U	0.50	0.37	ug/L		04/23/19 15:08	04/24/19 18:40	1
Indeno(1,2,3-cd)pyrene	0.50	U	0.50	0.44	ug/L		04/23/19 15:08	04/24/19 18:40	1
Naphthalene	0.50	U	0.50	0.42	ug/L		04/23/19 15:08	04/24/19 18:40	1
Phenanthrene	0.50	U	0.50	0.38	ug/L		04/23/19 15:08	04/24/19 18:40	1
Pyrene	0.50	U	0.50	0.36	ug/L		04/23/19 15:08	04/24/19 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*100*		*48 - 120*	*04/23/19 15:08*	*04/24/19 18:40*	*1*
Nitrobenzene-d5	*90*		*46 - 120*	*04/23/19 15:08*	*04/24/19 18:40*	*1*
p-Terphenyl-d14	*71*		*24 - 136*	*04/23/19 15:08*	*04/24/19 18:40*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.040	~~B+A~~ J	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:04	1
Cyanide, Free	9.5		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1
Total Dissolved Solids	363	~~H~~ J	10.0	4.0	mg/L			05/30/19 16:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	4.0	U	4.0	4.0	mg/L			04/25/19 12:04	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-03
Date Collected: 04/18/19 08:30
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-3
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.20	~~B~~ J	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:06	1
Cyanide, Free	6.6		5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-04
Date Collected: 04/18/19 08:40
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-4
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	~~B F1~~ UJ	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:07	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: SW-05
Date Collected: 04/18/19 09:00
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-5
Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.010	U ~~*~~ UJ	0.010	0.0050	mg/L		05/01/19 10:30	05/02/19 12:10	1
Cyanide, Free	5.0	U	5.0	1.5	ug/L		04/27/19 16:33	04/27/19 17:30	1

Client: GEI Consultants, Inc.
Project/Site: GEI, Mineral Springs

Job ID: 480-152316-1

Client Sample ID: TB
Date Collected: 04/18/19 00:00
Date Received: 04/18/19 11:38

Lab Sample ID: 480-152316-6
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0	0.41	ug/L			04/25/19 16:21	1
Ethylbenzene	1.0	U	1.0	0.74	ug/L			04/25/19 16:21	1
Toluene	1.0	U	1.0	0.51	ug/L			04/25/19 16:21	1
Xylenes, Total	2.0	U	2.0	0.66	ug/L			04/25/19 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*77 - 120*		*04/25/19 16:21*	*1*
4-Bromofluorobenzene (Surr)	*118*		*73 - 120*		*04/25/19 16:21*	*1*
Dibromofluoromethane (Surr)	*118*		*75 - 123*		*04/25/19 16:21*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*04/25/19 16:21*	*1*

TestAmerica Buffalo
10 Hazelwood Drive

Amherst, NY 14228
Phone: 716.691.2600 Fax: 716.691.7991

Chain of Custody Record 304419

FP324

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Rick FRAPPA	Site Contact: M. Cummings	Date: 4/18/19	COC No 1 of 1 COCs
Company Name: GEI Consultants	Tel/Fax:	Lab Contact: J. Schive	Carrier: HAND DELIVERY	
Address: 400 JOHN MUIR DRIVE	Analysis Turnaround Time			Sampler:
City/State/Zip: AMHERST, NY 14228	☐ CALENDAR DAYS ☐ WORKING DAYS			
Phone: 716 - 204 - 7155	TAT if different from Below			
Fax:	X 2 weeks			
Project Name: MINERAL SPRINGS MGP	☐ 1 week			
Site:	☐ 2 days			
P O #	☐ 1 day			

480-152316 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Cyanide Total 9014	Cyanide Free 9016	Cyanide Amen	BTEX 8260C	PAHs 8270D	TDS 2540C	TSS 2540D	TRPH 1664A	Sample Specific Notes
SW-01	4/18/19	910	G	W				X	X	X	X	X	X	X		
SW-02		800						X	X	X	X	X	X	X		
SW-03		830						X	X	X						
SW-04		840						X	X	X						
SW-05		900						X	X	X						Available Cyanide Not required JAM 6/21/19
TRIP BLANK		—									X					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client X Disposal by Lab ☐ Archive for Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 3.2 Corr'd: | Therm ID No.:

Relinquished by:	Company: GEI	Date/Time: 4/18/19 1135	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TABS	Date/Time: 4-18-19 1135