BGES, INC.

ENVIRONMENTAL CONSULTANTS

TAKE TWO LLC
6501 LAKE OTIS PARKWAY
ANCHORAGE, ALASKA

2020 GROUNDWATER MONITORING ACTIVITIES REPORT

February 2021

Submitted to:

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ACRONYMS

AAC	-	Alaska Administrative Code
ADEC	-	Alaska Department of Environmental Conservation
ASR	-	Alaska Soil Recycling
BGES	-	Braunstein Geological and Environmental Services
BTEX	-	Benzene, Toluene, Ethylbenzene, and Xylenes
C	-	Celsius
EPA	-	Environmental Protection Agency
LOQ	-	Limit of Quantitation
mg/L	-	Milligrams per Liter
ml/min	-	Milliliter per Minute
QC	-	Quality Control
QEP	-	Qualified Environmental Professional
RPD	-	Relative Percent Difference
SGS	-	SGS North America, Inc.
UST	-	Underground Storage Tank

1.0 INTRODUCTION

BGES, Inc. (BGES) was retained by James Cazort, of Take Two LLC, to conduct ongoing groundwater monitoring of Monitoring Well MW4B at the property located at 6501 Lake Otis Parkway, in Anchorage Alaska, hereafter referred to as the subject property (Figure 1). The legal description of the subject property is Lot 2, Anchor Subdivision. The subject property is listed in the Alaska Department of Environmental Conservation (ADEC) Contaminated Sites database with a File Number of 2100.26.075 and Hazard Identification Number 23361.

Groundwater monitoring activities were conducted on February 25, 2020 and August 4, 2020. The sampling activities were performed in accordance with the Work Plan for Groundwater Monitoring and Decommissioning Monitoring Wells, dated July 30, 2013; and an ADEC-approved Work Plan Amendment dated August 11, 2014.

2.0 BACKGROUND

The subject property is located at 6501 Lake Otis Parkway, on the east side of the roadway, and approximately 30 feet north of Little Campbell Creek. The site was originally listed as a single contaminated site, but was separated into two separate sites by the ADEC in their May 19, 2006 letter to PETRO Products. The subject property is divided into two lots; Lot 1 is located on the northern side of the property and separated from Lot 2 by a chain-link fence. Lot 1 is listed as a cleanup completed site in the ADEC Contaminated Sites database (File Number 2100.26.076). Lot 2 (subject property) is listed as active contaminated site in the ADEC Contaminated Sites database (File Number 2100.26.075).

In 1999, soil contamination was discovered on Lot 1 during the removal of three underground storage tanks (USTs) at the PETRO Products office. In 2004, approximately 1,699 tons of adversely impacted soils, in association with two of the three former USTs, were excavated and transported to Alaska Soil Recycling (ASR) to undergo thermal remediation and disposal.

The subject property is located on Lot 2, which is known as the former Renners Gas Station. Fuel contamination on Lot 2 was first reported in 1987. In 1988, a compliance order by consent was established between the ADEC and PETRO Products to address cleanup of the contamination on the subject property. In 1989, a test of the efficacy of using soil vapor extraction to remediate the remaining contaminated soils was performed by America North, Inc. The test concluded that the soil

permeabilities were too low for this technology to be effective.

Three USTs were removed from the subject property in 1997. Two of the USTs were 10,000-gallon gasoline tanks and the third UST was an 8,000-gallon diesel tank. During removal of these USTs and associated piping, contaminated soils were excavated and removed. Considerable contamination was reported to remain after this excavation effort was completed.

Numerous monitoring wells and well points were installed at the subject property and were monitored by various consulting firms between 1997 and 2013. Decreasing contamination trends in monitoring wells were observed throughout the subject property during this time period.

In March and April of 2009, BGES observed and documented the advancement of 15 soil borings to evaluate the extent of soil and groundwater contamination remaining at the subject property. Six soil borings were advanced along the eastern and northwestern portions of the property in locations where contamination had not been previously identified, and nine borings were advanced in the southwestern portion of the property in the vicinity of the previous Renners Gas Station excavations. Remediation of additional soil contamination was performed in August and September of 2009. Approximately 1,659 cubic yards of contaminated soil were excavated during August of 2009 and transported offsite to ASR for thermal treatment and disposal. Additional soils were excavated from the subject property during September of 2009; approximately 1,064 cubic yards of contaminated soils were placed in a soil stockpile on the subject property.

On August 5, 2013, nine on-site monitoring wells (P5, P8, P9, P10, P14, P15, P16, NW-1, and MW10A) were decommissioned. Five offsite monitoring wells/piezometers (P3, WP-1, WP-2, WP-3, and WP-4), which were located adjacent to, and north of Little Campbell Creek, were decommissioned on September 4, 2013.

Groundwater monitoring for Monitoring Well MW4B has been conducted twice a year between August of 2013 and August of 2020. The groundwater samples have exhibited benzene concentrations between 0.00107 milligram per liter (mg/L) and 0.0772 mg/L during this time period. All reported benzene concentrations, with the exception of five samples exceeded the ADEC cleanup criterion of 0.0046 mg/L. Reported concentrations of ethylbenzene and total xylenes in the groundwater sample collected on August 27, 2012, exceeded the ADEC cleanup criteria. Since August of 2013, all groundwater samples exhibited toluene, ethylbenzene, and total xylenes concentrations below ADEC cleanup criteria. Historic groundwater results for Monitoring Well MW4B indicate a decreasing trend for

benzene concentrations, and the extent of groundwater contamination in excess of the ADEC cleanup criterion appears to be located within the immediate vicinity of Monitoring Well MW4B.

The results of the groundwater monitoring activities completed during February and August 2020 are presented in this report.

3.0 FIELD ACTIVITIES

All field work was performed by a Qualified Environmental Professional (QEP), as defined by the ADEC, and in general accordance with the ADEC's UST regulations (18 Alaska Administrative Code [AAC] 78, the ADEC's Field Sampling Guidance (October 2019), and the approved work plan and amendment referenced above. BGES field personnel collected a groundwater sample (and a duplicate sample) from Monitoring Well MW4B on February 25, 2020 and August 4, 2020 (Figures 2 and 3) utilizing the methodology described below.

Prior to sample collection, the depth to water and the total depth of the well were measured using an electronic water level indicator, which was decontaminated prior to use. Prior to the collection of the groundwater sample, the well volume was calculated. The well was purged and sampled utilizing a positive displacement bladder pump and low-flow sampling technology. The pump intake information is not available for the February 25, 2020 sampling event because of the apparent inaccurate depth recording for the pump intake. The pump intake was set at approximately 9.2 feet below the top of casing on August 4, 2020, which was within 6 inches of the top of the water column. The sample collection pumping rates were approximately 100 milliliters per minute (ml/min) on February 25th and 150 ml/min on August 4th. During the purging activities, the water quality parameters (pH, conductivity, oxidation-reduction potential, and temperature) were monitored utilizing a YSI Pro Plus water quality meter equipped with a flow-through cell. Approximately 2.6 gallons of water were purged from the monitoring well during both sampling events, which is a little more than three well volumes. The depths to water and groundwater quality parameters are presented in Table 1 for both sampling events. Copies of the field notes and water monitoring logs for both sampling events are included in Appendix A.

Upon completion of the purging activities, the groundwater samples were collected using the bladder pump and low-flow sampling techniques. Care was taken while filling the containers to ensure that no headspace was left within the containers and that none of the preservative was spilled.

All sample containers were labeled, placed in a chilled cooler, and transported to SGS North America,

Inc. (SGS) for analysis, under standard chain of custody protocol. As a quality control measure, a trip blank sample accompanied the water samples scheduled for volatile analyses during the entire sampling and handling process. One duplicate water sample was collected from MW4B and submitted "blindly" (identified as P20) to the laboratory for analyses, during each sampling event.

4.0 EVALUATION OF LABORATORY DATA

Laboratory analyses of the groundwater samples were performed by SGS, an ADEC-approved laboratory. The analytical results for the water samples were compared to ADEC Method 2 Cleanup Criteria listed in 18 AAC 75.345 – Table C for groundwater, as revised on November 7, 2020.

As a quality control measure, a trip blank accompanied the samples scheduled for volatile analyses during the entire sampling and handling process. To evaluate sampling precision, a duplicate water sample was collected during each sampling event and submitted "blindly" to the laboratory for analysis. The groundwater samples collected on February 25 were analyzed at SGS for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by Environmental Protection Agency (EPA) Method 8021B. The groundwater samples collected on August 4 were analyzed at SGS for BTEX by EPA Method 8260D.

February 25, 2020. Water Samples MW4B-0220 and P20-0220 (duplicate of MW4B-0220) exhibited benzene concentrations of 0.00555 mg/L and 0.00553 mg/L, respectively; which exceed the ADEC cleanup criterion of 0.0046 mg/L. No other analytes exhibited concentrations exceeding the limits of quantitation (LOQs), which were all less than their respective ADEC cleanup criteria.

August 4, 2020. Water Samples MW4B-0820 and P20-0820 (duplicate of MW4B-0820) exhibited benzene concentrations of 0.000453 mg/L and 0.000461 mg/L, respectively; which are below the ADEC cleanup criterion of 0.0046 mg/L. No other analytes exhibited concentrations exceeding the LOQs, which were all less than their respective ADEC cleanup criteria.

Analytical results for the groundwater samples are summarized in Table 2, copies of the laboratory data packages are included in Appendix B, and the Monitoring Well location is depicted on Figures 2 and 3.

5.0 LABORATORY DATA QUALITY REVIEW

Data quality was reviewed in accordance with ADEC guidance and standard industry practices. An

ADEC laboratory data review checklist was completed for each laboratory work order and the checklists are included in Appendix C. The analytical results are summarized in Table 2. Sample analyses were provided by SGS, an ADEC-approved laboratory. All samples were hand-delivered to SGS by BGES personnel under standard chain of custody protocol.

All samples contained the proper preservatives for the requested analyses and no unusual sample conditions were noted by the laboratory, except where indicated below. A trip blank accompanied all volatile water samples (BTEX) through the entirety of the sampling process and delivery to the laboratory. Case narratives were included with both of the laboratory data packages. Quality control (QC) failures identified in the case narratives are described below. The following is a discussion of our evaluation of sample conditions and laboratory procedures for the water samples collected for the groundwater monitoring activities completed in February and August of 2020.

Data Package 1200751

The case narrative for Work Order Number 1200751 (water samples collected on February 25, 2020) noted no QC failures identified by SGS.

The sample cooler associated with this work order arrived at the laboratory with a measured temperature blank of 1.5 degrees Celsius (C), which is within the prescribed optimal temperature range of 0 to 6 degrees C. The samples arrived at the laboratory in acceptable condition, as noted on the sample receipt form.

Water Sample P20-0220 was a duplicate of Water Sample MW4B-0220 and was collected to evaluate field-sampling precision. The relative percent difference (RPD) for benzene in this sample pair was 4 percent, which is below the acceptable limit of 30 percent for water samples. This suggests that good field-sampling precision was achieved during the collection of these water samples. The RPDs between the reported concentrations of toluene, ethylbenzene, and total xylenes could not be calculated because these analytes were not detected above the laboratory's LOQs.

Data Package 1203916

The case narrative for Work Order Number 1203916 (water samples collected on August 4, 2020) noted no QC failures identified by SGS.

The sample cooler associated with this work order arrived at the laboratory with a measured temperature blank of 5.6 degrees C, which is within the prescribed optimal temperature range of 0 to 6 degrees C.

The samples arrived at the laboratory in acceptable condition, as noted on the sample receipt form.

It is noted that the laboratory inadvertently analyzed the water samples by EPA Method 8260D instead of the requested Method of 8021B that was marked on the chain of custody documentation. Because analysis of the sample by Method 8260D is also an acceptable analytical method for analysis of the sample for BTEX, this modification does not affect the interpretation of the data.

Water Sample P20-0820 was a duplicate of Water Sample MW4B-0820 and was collected to evaluate field-sampling precision. The RPD for benzene in this sample pair was 2 percent, which is below the acceptable limit of 30 percent for water samples. This suggests that good field-sampling precision was achieved during the collection of these water samples. The RPDs between the reported concentrations of toluene, ethylbenzene, and total xylenes could not be calculated because these analytes were not detected above the laboratory's LOQs.

6.0 CONCLUSIONS AND RECOMMENDATIONS

BGES performed groundwater monitoring activities to evaluate groundwater contaminant conditions at the subject property. Groundwater samples were collected using a low-flow sampling methodology with a submersible bladder pump on February 25, 2020 and August 4, 2020.

Analytical results of the groundwater samples collected from Monitoring Well MW4B (and its duplicate sample) on February 25, 2020 exhibited benzene in groundwater at the subject property at a concentration up to 0.00555 mg/L, which exceeds the ADEC cleanup criterion of 0.0046 mg/L. No other analytes exhibited detectable concentrations at the laboratory's LOQs, which were less than the ADEC cleanup criteria.

Analytical results of the groundwater samples collected from Monitoring Well MW4B (and its duplicate sample) on August 4, 2020 exhibited benzene in groundwater at the subject property at a concentration up to 0.000461 mg/L, which is below the ADEC cleanup criterion of 0.0046 mg/L. No other analytes exhibited detectable concentrations at the laboratory's LOQs, which were less than the ADEC cleanup criteria.

Historic groundwater results indicate an overall decreasing trend for benzene concentrations in Monitoring Well MW4B (Table 3 and Graph 1). Once two successive groundwater monitoring events exhibit benzene concentrations less than the ADEC cleanup criterion are achieved, results will be submitted to the ADEC and a status of cleanup complete will be requested for the site. It is also

recommended that a copy of this report be submitted to the ADEC.

7.0 EXCLUSIONS AND CONSIDERATIONS

This report presents facts, observations, and inferences based on conditions observed during the period of our project activities, and only those conditions that were evaluated as part of our scope of work. Our conclusions are based solely on our observations made in the local vicinity of the monitoring well that was sampled. In addition, changes to site conditions may have occurred since we completed our project activities. These changes may be from the actions of man or nature. Changes in regulations may also impact the interpretation of site conditions. BGES will not disclose our findings to any parties other than our client as listed above, except as directed by our client, or as required by law.

The fieldwork for these sampling events was conducted by Chris Pepe, an Environmental Scientist I of BGES and a QEP as defined by the ADEC. Mr. Pepe has conducted numerous site characterization projects throughout Alaska. This report was prepared by Ms. Tait Erichsen, an Environmental Scientist I of BGES. This report was reviewed by Jayne Martin, a Senior Environmental Scientist II of BGES. Ms. Martin has more than 30 years of professional environmental and geological consulting experience, and has conducted and managed hundreds of environmental projects involving site characterization and remediation efforts throughout Alaska and the lower 48 states.

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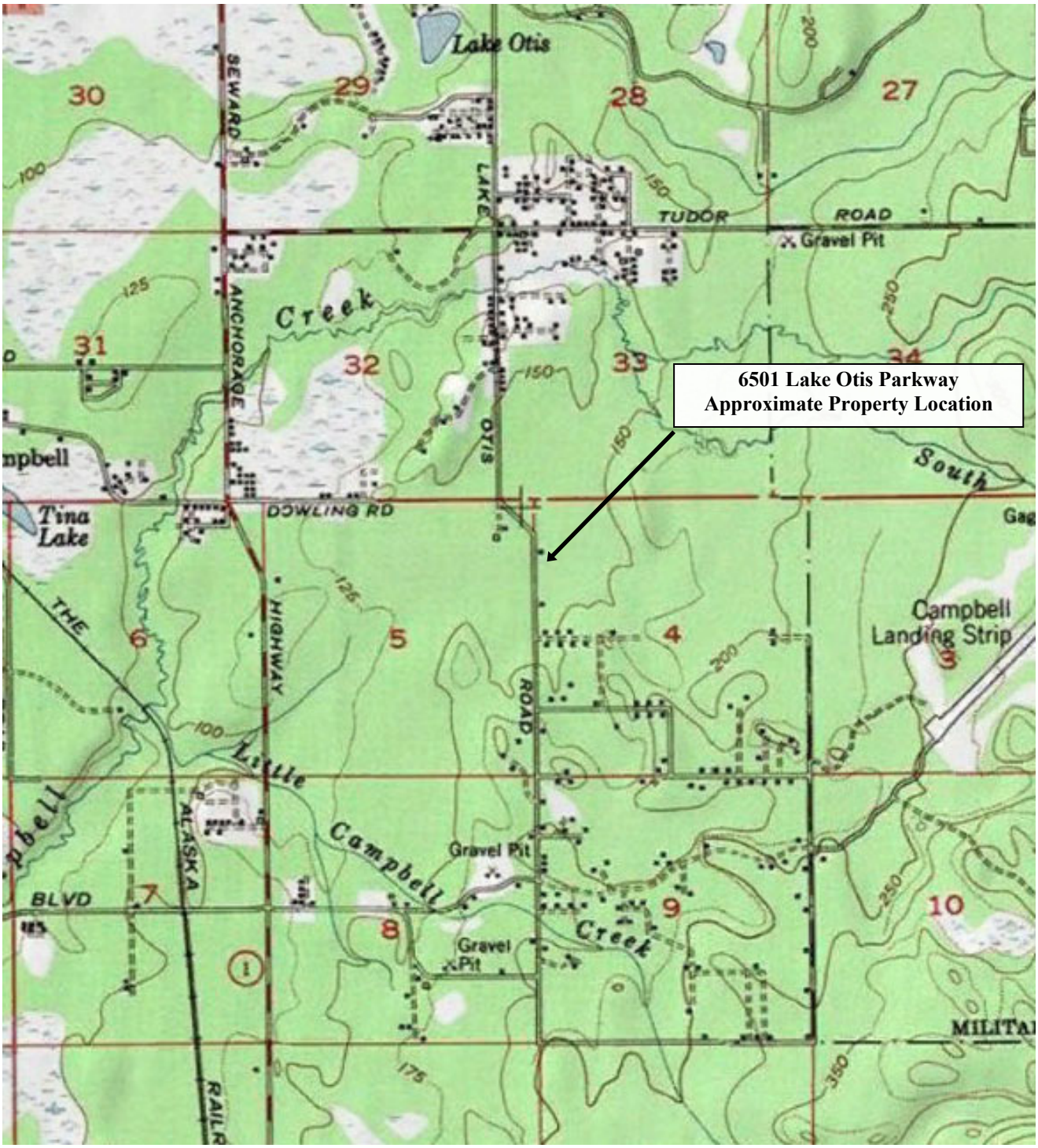
Environmental Scientist I

Reviewed By:

Jayne Martin
Senior Environmental Scientist II



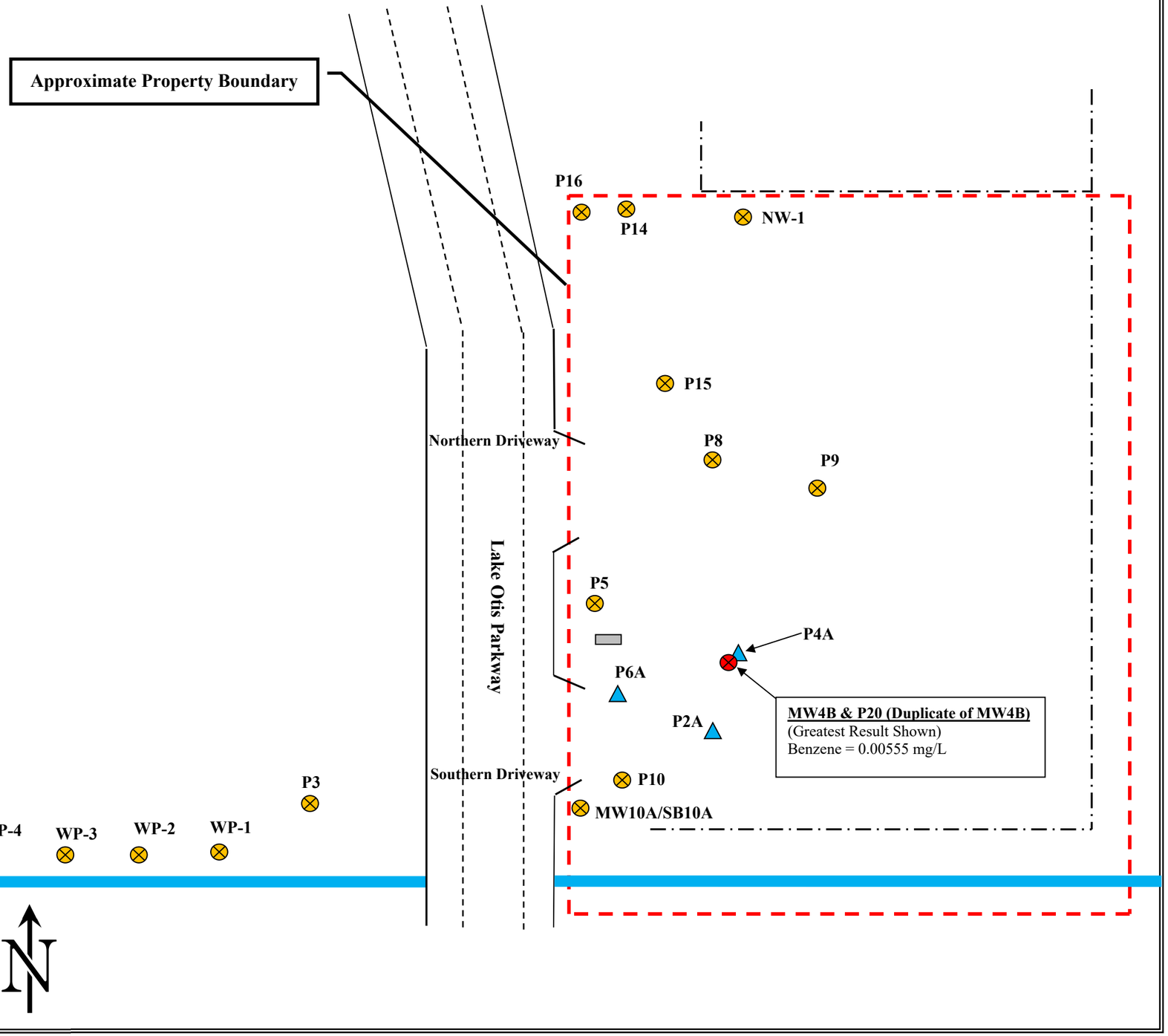
Source: Provided by Google Earth Pro ©, and the Statewide Digital Mapping Initiative data service hosted by UAF-GINA

0 0.5 1.0

Approximate Scale in Miles

Take Two LLC
6501 Lake Otis Parkway
Anchorage, Alaska
Property Vicinity Map

BGES, INC. | **February 2021** | **Figure 1**



LEGEND

= Site Fencing

= Little Campbell Creek

= Monitoring Well/Piezometer Decommissioned during 2013 Field Activities

= Previous Monitoring Well Location/Decommissioned During 2009 Excavation

= Monitoring Well (Concentration Exceeds the ADEC Cleanup Criterion)

= Sign Post

= Property Boundary

mg/L = milligrams per liter

ADEC = Alaska Department of Environmental Conservation

**Note only concentration exceeding the ADEC cleanup criteria are shown.

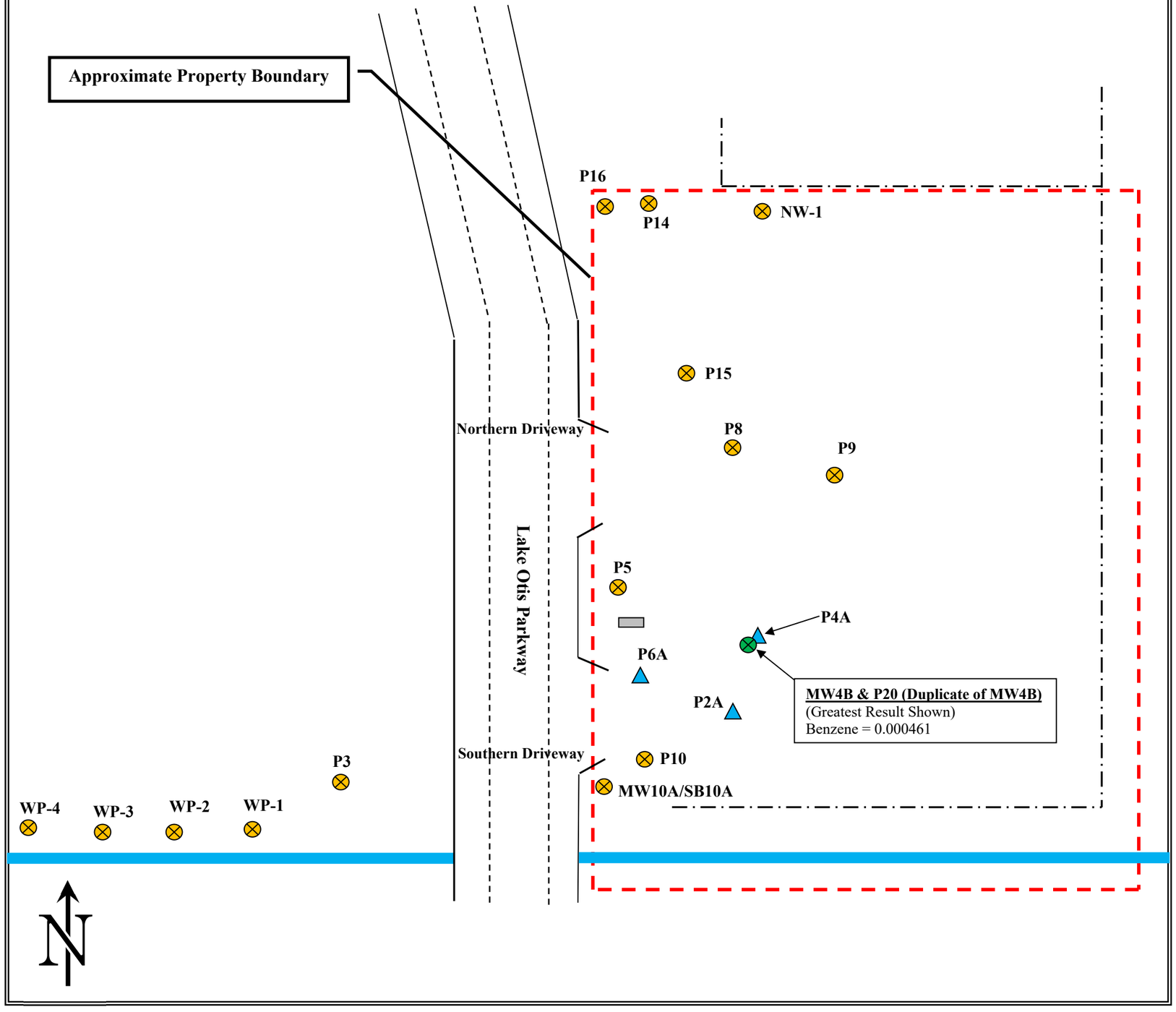
0 80 160

Approximate Scale (feet)

Take Two LLC
6501 Lake Otis Parkway
Anchorage, Alaska

Monitoring Well Location Map and Groundwater Results (February 2020)

BGES, INC. | **February 2021** | **Figure 2**



LEGEND

- = Site Fencing
- = Little Campbell Creek
- = Monitoring Well/Piezometer Decommissioned during 2013 Field Activities
- = Previous Monitoring Well Location/Decommissioned During 2009 Excavation
- = Concentration is below the ADEC Cleanup Criterion
- = Sign Post
- = Approximate Property Boundary

mg/L = milligrams per Liter

0 80 160

Approximate Scale (feet)

Take Two LLC
6501 Lake Otis Parkway
Anchorage, Alaska

Monitoring Well Location Map and Groundwater Results (August 2020)

BGES, INC. | **February 2021** | **Figure 3**

TABLE 1
TAKE TWO, LLC
6501 LAKE OTIS PARKWAY
ANCHORAGE, ALASKA
MONITORING WELL SAMPLING DATA (FEBRUARY AND AUGUST 2020)

BGES, INC.

Well Number	**MW4B**	
Date Sampled	2/25/2020	8/4/2020
Date of Depth and Elevation Measurement	2/25/2020	8/4/2020
Time of Depth to Water Measurement	13:02	14:45
Time Sample Collected	15:49	15:55
Top of Casing Elevation (feet)	-	-
Depth to Water (feet below top of casing)	9.42	8.6
Total Depth of Well (feet below top of casing)	13.8	13.8
Well Casing Diameter (Inches)	2	2
Standing Water Well Volume (gallons)	0.714	0.848
Volume Purged (gallons)	2.6	2.6
Temperature (degrees Celsius)	1.9/2.5/2.8	14.6/9.3/8.9/8.9
pH (standard units)	6.0/6.28/6.31	6.98/6.04/5.89/5.87
Conductivity (microsiemans per centimeter)	314.0/271.0/268.7	51.7/42.2/41.6/44.2
Oxidation Reduction Potential (millivolts)	86.3/26.9/18.7	65.2/37.5/36.9/33.6
Depth of Bladder Pump Intake (feet below top of casing)	NA	9.2
Flow Rate during purging (mililiters per minute)	150	150
Flow Rate during sampling (milliliters per minute)	100	150
Notes: Sampler: Chris Pepe Field parameters were measured with a YSI Pro Plus water quality meter and flow-through cell. Weather conditions:	P20-0220 (Duplicate Sample) collected at 15:56 Cloudy 16 degrees Fahrenheit	P20-0820 (Duplicate sample) collected at 16:08 Sunny 71 degrees Fahrenheit

TABLE 2
TAKE TWO, LLC
6501 LAKE OTIS PARKWAY
ANCHORAGE, ALASKA
ANALYTICAL RESULTS - GROUNDWATER SAMPLES (FEBRUARY & AUGUST 2020)

Water Sample No.	Parameter	Results (mg/L)	LOQ (mg/L)	ADEC Cleanup Criteria (mg/L)[1]	Analytical Method
		Febraury 25, 2020			
MW4B-0220	**Benzene**	**0.00555**	0.000500	0.0046	SW 8021B
	Toluene	ND	0.00100	1.100	SW 8021B
	Ethylbenzene	ND	0.00100	0.015	SW 8021B
	Total Xylenes	0.00232	0.00300	0.190	SW 8021B
P20-0220 (duplicate of MW4B-0220) RPD = 4%	**Benzene**	**0.00533**	0.000500	0.0046	SW 8021B
	Toluene	ND	0.00100	1.100	SW 8021B
	Ethylbenzene	ND	0.00100	0.015	SW 8021B
	Total Xylenes	0.00225	0.00300	0.190	SW 8021B
		August 4, 2020			
MW4B-0820	Benzene	0.000453	0.000400	0.0046	SW 8260D
	Toluene	ND	0.00100	1.100	SW 8260D
	Ethylbenzene	ND	0.00100	0.015	SW 8260D
	Total Xylenes	ND	0.00300	0.190	SW 8060D
P20-0820 (duplicate of MW4B-0820) RPD = 2%	Benzene	0.000461	0.000400	0.0046	SW 8260D
	Toluene	ND	0.00100	1.100	SW 8260D
	Ethylbenzene	ND	0.00100	0.015	SW 8260D
	Total Xylenes	ND	0.00300	0.190	SW 8260D

[1] = Groundwater cleanup criteria are based on 18 AAC 75.345 Table C, Groundwater Cleanup Levels for Human Health, November 7, 2020.
ADEC = Alaska Department of Environmental Conservation; AAC = Alaska Adminstrative Code
ND = not detectable; mg/L = milligrams per liter; LOQ = Limit of Quantitation; RPD = Relative Percent Difference
BOLD = The value exceeds the applicable ADEC cleanup criterion.

TABLE 3
TAKE TWO LLC
6501 LAKE OTIS PARKWAY
ANCHORAGE, ALASKA
HISTORICAL GROUNDWATER ANALYTICAL RESULTS
FOR MONITORING WELLS P4, P4A, AND MW4B

Well Number	Date Installed/ Decommissioned	Date Sampled	Diesel Range Organics (mg/L)	Gasoline Range Organics (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)
[1]ADEC Cleanup Criteria (mg/L)			1.500	2.200	0.0046	1.100	0.015	0.190
P4	5/1989	5/25/1989	-	-	**4.45**	**9.23**	**1.21**	**5.69**
		3/6/1990	-	-	**1.17**	**2.56**	**0.387**	**1.799**
		8/2/1990	-	-	**1.78**	0.661	ND	**0.443**
		4/9/1997	**340**	**14**	**2.6**	**2.7**	**0.43**	**2.2**
	8/1998	Decommissioned - Replaced with P4A						
P4A	5/1998	1/4/1999	ND	**19**	**4.9**	**2**	**0.48**	**1.7**
		5/15/1999	ND	ND	ND	ND	ND	ND
		8/10/1999	0.4	**13**	**4.3**	0.39	**0.39**	**0.76**
		10/14/1999	0.57	**22**	**7.2**	**1.3**	**0.46**	**1**
		5/3/2000	0.15	**7.7**	**2.2**	0.31	ND	**0.38**
		5/17/2004	ND	**3.6**	**1.11**	0.228	**0.0902**	**0.353**
		4/21/2005	ND	**3.3**	**0.776**	0.132	**0.0793**	**0.315**
		9/28/2005	ND	0.915	**0.218**	0.0107	0.00781	0.0516
		10/12/2006	-	0.888	**0.17**	ND	0.00601	0.081
		9/26/2007	-	0.538	**0.0921**	ND	ND	0.0406
		4/3/2009	ND	0.398	**0.165**	0.0143	0.00999	0.0601
	5/2009	Decommissioned - Replaced with MW4B						
MW4B	8/6/2012	8/27/2012 *	-	1.65	**0.0772**	0.00114	**0.0736**	**0.277**
		8/5/2013	-	-	**0.0434**	ND	0.00417	0.00544
		3/21/2014**	-	-	ND	ND	0.00113	ND
		5/2/2014	-	-	**0.0163**	ND	ND	ND
		8/19/2014	-	-	**0.0125**	ND	0.00110	0.00222
		2/25/2015	-	-	**0.0264**	ND	ND	0.00512
		8/18/2015	-	-	**0.0340**	ND	ND	0.0145
		2/25/2016	-	-	0.00128	ND	ND	ND
		8/4/2016	-	-	**0.00980**	ND	ND	ND
		2/8/2017	-	-	**0.0122**	ND	ND	0.00286
		8/17/2017	-	-	0.00310	ND	ND	ND
		2/19/2018	-	-	**0.00687**	ND	ND	ND
		8/30/2018	-	-	ND	ND	ND	ND
		2/26/2019	-	-	**0.00731**	ND	ND	ND
		8/13/2019	-	-	0.00107	ND	ND	ND
		2/25/2020	-	-	**0.00555**	ND	ND	0.00232
		8/4/2020	-	-	0.000461	ND	ND	ND

* 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; isopropylbenzene; n-propylbenzene; 1-methylnaphthalene; 2-methylnaphthalene; and naphthalene were detected at concentrations below their respective ADEC cleanup criteria.

** Groundwater sample was collected using a no purge methodology with a Hydrasleeve.

[1] = Groundwater cleanup criteria based on 18 AAC 75.345 Table C, Groundwater Cleanup Levels for Human Health, November 7, 2020

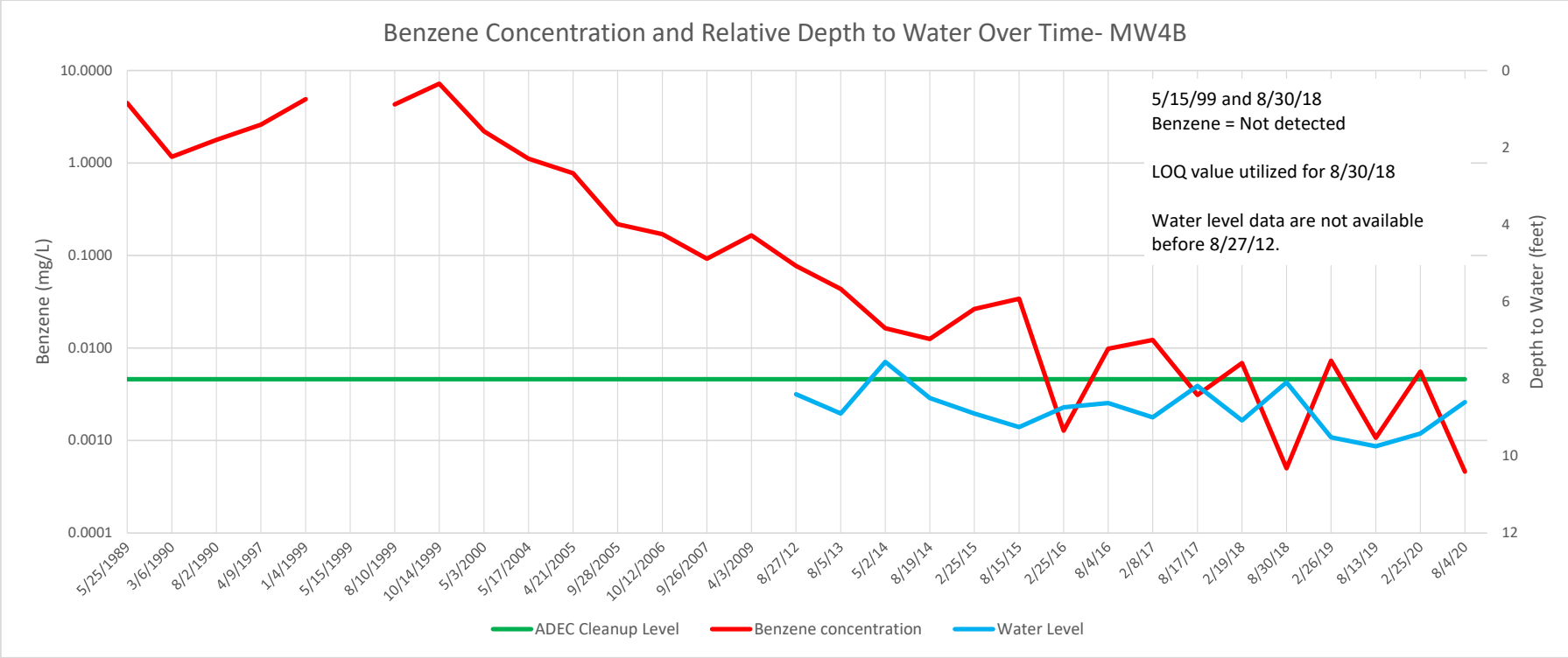
Note: The values presented in the table reflect the maximum concentrations reported for each sample/duplicate pair.

ADEC = Alaska Department of Environmental Conservation; AAC = Alaska Adminstrative Code; ND = non-detectable concentration

mg/L = milligrams per Liter

BOLD = Value exceeds the applicable ADEC cleanup criterion.

GRAPH 1
TAKE TWO LLC
6501 LAKE OTIS PARKWAY
ANCHORAGE, ALASKA



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APPENDIX A
FIELD NOTES AND
GROUNDWATER MONITORING LOGS

2-29-2020 16°F cloudy

10:30 CS arrived onsite and began chipping away at the ice to find the MW.

13:00 Located well and collected measurements

DTW (ft)	TDW (ft)
9.42	13.8

14:46 Began purging, details in GW Monitoring Log

16:10 CS offsite

BGES, INC.
ENVIRONMENTAL CONSULTANTS

GROUNDWATER MONITORING LOG

BGES, INC.

Well Number: MW4B
Date of Sampling Event: 2-25-2020
Weather Conditions: 16°F cloudy
Time of Depth to Water Measurement: 13:02
Date of Depth to Water Measurement: 2-25-2020

Total Depth of Well (feet below TOC): 13.88
Depth to Water (feet below TOC): 9.47
Water Column (feet): 4.38

Type of Sampling Equipment:
MP 50 controller
1.75" Bladder pump
YSI PSO plus

Volume of well (gals): 0.714

=0.1632 X Water Column (For 2-inch well)
=0.6528 X Water Column (For 4-inch well)
=1.4688 X Water Column (For 6-inch well)

Time Purging Began: 14:46
Time of Sampling: 15:49
Volume purged: 2.6 **PURGE A MINIMUM OF THREE WELL VOLUMES**

Temperature (°C)	1.9	Temperature (°C)	
Conductivity	~~324~~ 314	Conductivity	
pH	6.0	pH	
ORP	96.3	ORP	
Volume Purged	.25 gal RNB	Volume Purged	
Depth To Water	~~8.6~~ N/A	Depth To Water	
Time of Measurement	14:55	Time of Measurement	
Temperature (°C)	2.5	Temperature (°C)	
Conductivity	271.0	Conductivity	
pH	6.78	pH	
ORP	26.9	ORP	
Volume Purged	.80 gal	Volume Purged	
Depth To Water	~~8.8~~ N/A RNB	Depth To Water	
Time of Measurement	15:07	Time of Measurement	
Temperature (°C)	2.8	Temperature (°C)	
Conductivity	268.7	Conductivity	
pH	6.31	pH	
ORP	19.7	ORP	
Volume Purged	2.2	Volume Purged	
Depth To Water	~~8.8~~ N/A RNB	Depth To Water	
Time of Measurement	15:20	Time of Measurement	
Temperature (°C)		Temperature (°C)	
Conductivity		Conductivity	
pH		pH	
ORP		ORP	
Volume Purged		Volume Purged	
Depth To Water		Depth To Water	
Time of Measurement		Time of Measurement	

Depth of Bladder intake: ~~8.5~~ N/A RNB

Purge Rate: 150 ml/min

Sample Rate: 100 mL/min

Sample ID: MW4B-0220 @ 15:49
And Duplicate P20-0220 @ 15:56

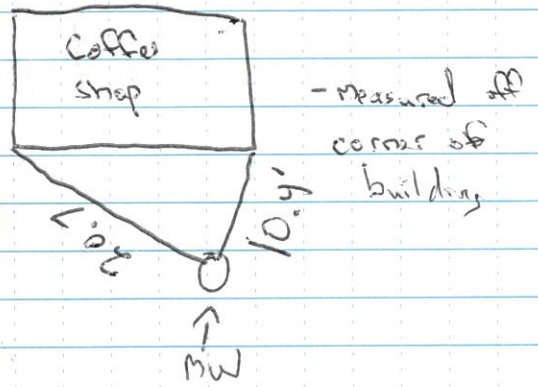
Additional Notes:
N/A = Not available due to apparent inaccurate recording

2:00 - CP arrived onsite to collect a gw sample from MW MW4B

	DTW (ft)	TDW (ft)
MW4B	@ ~~8.57~~ 8.6	13.8

- Opened well and discovered water up in the casing. Bailed water out w/ a cup. Water had a sheen on it.

15:10 - Began sampling well/ Swing Ties



- Measured off corner of building

16:00 - CP offsite

Scale: 1 square = _____

BGES, INC.
ENVIRONMENTAL CONSULTANTS

GROUNDWATER MONITORING LOG

BGES, INC.

Well Number: MW4B
Date of Sampling Event: 8-4-2020
Weather Conditions: 71°F Sunny
Time of Depth to Water Measurement: 14:45
Date of Depth to Water Measurement: 8-4-20

Total Depth of Well (feet below TOC): 13.80
Depth to Water (feet below TOC): ~~8.59~~ 8.6
Water Column (feet): 5.2

Type of Sampling Equipment:
MP-50 controller
1.75" bladder
YSI Pro

Volume of well (gals): 0.848

=0.1632 X Water Column (For 2-inch well)
=0.6528 X Water Column (For 4-inch well)
=1.4688 X Water Column (For 6-inch well)

Time Purging Began: 15:10
Time of Sampling: 15:55
Volume purged: 2.6 gal

PURGE A MINIMUM OF THREE WELL VOLUMES

Temperature (°C)	14.6	Temperature (°C)	
Conductivity	51.7	Conductivity	
pH	6.91	pH	
ORP	65.2	ORP	
Volume Purged	initial	Volume Purged	
Depth To Water	8.6	Depth To Water	
Time of Measurement	~~initial~~ 15:13	Time of Measurement	
Temperature (°C)	9.3	Temperature (°C)	
Conductivity	42.2	Conductivity	
pH	6.04	pH	
ORP	37.5	ORP	
Volume Purged	1 gal	Volume Purged	
Depth To Water	~~15:30~~ 8.6	Depth To Water	
Time of Measurement	15:30	Time of Measurement	
Temperature (°C)	8.9	Temperature (°C)	
Conductivity	41.6	Conductivity	
pH	5.89	pH	
ORP	36.9	ORP	
Volume Purged	2.0 gal	Volume Purged	
Depth To Water	8.6	Depth To Water	
Time of Measurement	15:43	Time of Measurement	
Temperature (°C)	8.9	Temperature (°C)	
Conductivity	44.2	Conductivity	
pH	5.87	pH	
ORP	33.6	ORP	
Volume Purged	2.6	Volume Purged	
Depth To Water	~~15:52~~ 8.6	Depth To Water	
Time of Measurement	15:52	Time of Measurement	

Depth of Bladder intake: 9.2'

Purge Rate: 150 ml/min

Sample Rate: 150 ml/min

Sample ID: MW4B-0820 @ 15:55
and dup P-20-0820 @ 16:04

Additional Notes:

APPENDIX B
LABORATORY ANALYTICAL DATA

Laboratory Report of Analysis

To: BGES Inc.
1042 E. 6th Ave.,
Anchorage, AK 99501
(907)644-2900

Report Number: **1200751**

Client Project: **Take Two**

Dear Jayne Martin,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

_____

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **BGES Inc.**
SGS Project: **1200751**
Project Name/Site: **Take Two**
Project Contact: **Jayne Martin**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW48-0220	1200751001	02/25/2020	02/26/2020	Water (Surface, Eff., Ground)
P20-0220	1200751002	02/25/2020	02/26/2020	Water (Surface, Eff., Ground)
Trip Blank	1200751003	02/25/2020	02/26/2020	Water (Surface, Eff., Ground)

Method	Method Description
SW8021B	BTEX 8021

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Detectable Results Summary

Client Sample ID: **MW48-0220**
Lab Sample ID: 1200751001
Volatile Fuels

Parameter	Result	Units
Benzene	5.55	ug/L
P & M -Xylene	2.32	ug/L

Client Sample ID: **P20-0220**
Lab Sample ID: 1200751002
Volatile Fuels

Parameter	Result	Units
Benzene	5.33	ug/L
P & M -Xylene	2.25	ug/L

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Results of **MW48-0220**

Client Sample ID: **MW48-0220**
Client Project ID: **Take Two**
Lab Sample ID: 1200751001
Lab Project ID: 1200751

Collection Date: 02/25/20 15:49
Received Date: 02/26/20 09:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.55		0.500	0.150	ug/L	1		02/27/20 17:20
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		02/27/20 17:20
o-Xylene	1.00	U	1.00	0.310	ug/L	1		02/27/20 17:20
P & M -Xylene	2.32		2.00	0.620	ug/L	1		02/27/20 17:20
Toluene	1.00	U	1.00	0.310	ug/L	1		02/27/20 17:20
Xylenes (total)	3.00	U	3.00	0.930	ug/L	1		02/27/20 17:20
Surrogates								
1,4-Difluorobenzene (surr)	96.1		77-115		%	1		02/27/20 17:20

Batch Information

Analytical Batch: VFC15091
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 02/27/20 17:20
Container ID: 1200751001-A

Prep Batch: VXX35450
Prep Method: SW5030B
Prep Date/Time: 02/27/20 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 02/28/2020 12:22:21PM

Results of **P20-0220**

Client Sample ID: **P20-0220**
Client Project ID: **Take Two**
Lab Sample ID: 1200751002
Lab Project ID: 1200751

Collection Date: 02/25/20 15:56
Received Date: 02/26/20 09:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	5.33		0.500	0.150	ug/L	1		02/27/20 17:38
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		02/27/20 17:38
o-Xylene	1.00	U	1.00	0.310	ug/L	1		02/27/20 17:38
P & M -Xylene	2.25		2.00	0.620	ug/L	1		02/27/20 17:38
Toluene	1.00	U	1.00	0.310	ug/L	1		02/27/20 17:38
Xylenes (total)	3.00	U	3.00	0.930	ug/L	1		02/27/20 17:38
Surrogates								
1,4-Difluorobenzene (surr)	95		77-115		%	1		02/27/20 17:38

Batch Information

Analytical Batch: VFC15091
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 02/27/20 17:38
Container ID: 1200751002-A

Prep Batch: VXX35450
Prep Method: SW5030B
Prep Date/Time: 02/27/20 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 02/28/2020 12:22:21PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Take Two**
Lab Sample ID: 1200751003
Lab Project ID: 1200751

Collection Date: 02/25/20 15:49
Received Date: 02/26/20 09:44
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500 U		0.500	0.150	ug/L	1		02/27/20 12:37
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		02/27/20 12:37
o-Xylene	1.00 U		1.00	0.310	ug/L	1		02/27/20 12:37
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		02/27/20 12:37
Toluene	1.00 U		1.00	0.310	ug/L	1		02/27/20 12:37
Xylenes (total)	3.00 U		3.00	0.930	ug/L	1		02/27/20 12:37
Surrogates								
1,4-Difluorobenzene (surr)	97.9		77-115		%	1		02/27/20 12:37

Batch Information

Analytical Batch: VFC15091
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 02/27/20 12:37
Container ID: 1200751003-A

Prep Batch: VXX35450
Prep Method: SW5030B
Prep Date/Time: 02/27/20 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 02/28/2020 12:22:21PM

Method Blank

Blank ID: MB for HBN 1804740 [VXX/35450]
Blank Lab ID: 1552297

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1200751001, 1200751002, 1200751003

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	0.930	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	100	77-115		%

Batch Information

Analytical Batch: VFC15091
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 2/27/2020 11:09:00AM

Prep Batch: VXX35450
Prep Method: SW5030B
Prep Date/Time: 2/27/2020 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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200 West Potter Drive Anchorage, AK 95518
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Blank Spike Summary

Blank Spike ID: LCS for HBN 1200751 [VXX35450]
Blank Spike Lab ID: 1552298
Date Analyzed: 02/27/2020 11:44

Spike Duplicate ID: LCSD for HBN 1200751 [VXX35450]
Spike Duplicate Lab ID: 1552299
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1200751001, 1200751002, 1200751003

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	105	105	100	104	104	(80-120)	0.31	(< 20)
Ethylbenzene	100	91.1	91	100	94.7	95	(75-125)	3.90	(< 20)
o-Xylene	100	87.5	88	100	90.1	90	(80-120)	2.90	(< 20)
P & M -Xylene	200	179	90	200	185	93	(75-130)	3.60	(< 20)
Toluene	100	102	102	100	105	105	(75-120)	2.60	(< 20)
Xylenes (total)	300	266	89	300	276	92	(79-121)	3.30	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	102	102	50	94.8	95	(77-115)	7.10	

Batch Information

Analytical Batch: **VFC15091**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX35450**
Prep Method: **SW5030B**
Prep Date/Time: **02/27/2020 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

SGS

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1200751

Locations Nationwide
Alaska Maryland
New Jersey New York
North Carolina Indiana
West Virgina Kentucky
www.us.sgs.com

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Page 1 of 1

Section 1

CLIENT: BGES, INC

CONTACT: Jayne Martin PHONE NO: 907-644-2900

PROJECT NAME: Take Two PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Jayne Martin E-MAIL: jayne@BGESINC.com

INVOICE TO: Jayne Martin QUOTE #: P.O. #: open

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	Section 3 # CONTAINERS	Type C = COMP G = GRAB MI = Multi Incremental Soils	Preservative: HCl	Preservative: BTEX 8021B	REMARKS/ LOC ID
1 AC	MW4B-0220	2-25-20	15:49	W	3	G	X		
2 AC	P20-0220	↓	15:56	W	3	G	X		
3 AC	Trip Blank			W	3	G	X		

Section 5

	Date	Time	Received By:
Relinquished By: (1)	2-26-20	9:44	
Relinquished By: (2)			
Relinquished By: (3)			
Relinquished By: (4)	02/26/20	09:44	Received For Laboratory By:

Section 4

DOD Project? Yes (No)

Cooler ID:

Data Deliverable Requirements: Level II

Requested Turnaround Time and/or Special Instructions:

Standard Turnaround Time

Profile 365262 334626

Temp Blank °C: 1.5 D63

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle) HO

INTACT BROKEN (ABSENT)

(See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

e-Sample Receipt Form

SGS Workorder #: **1200751**

1 2 0 0 7 5 1

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
	N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.5 °C Therm. ID: D63
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1200751001-A	HCL to pH < 2	OK			
1200751001-B	HCL to pH < 2	OK			
1200751001-C	HCL to pH < 2	OK			
1200751002-A	HCL to pH < 2	OK			
1200751002-B	HCL to pH < 2	OK			
1200751002-C	HCL to pH < 2	OK			
1200751003-A	HCL to pH < 2	OK			
1200751003-B	HCL to pH < 2	OK			
1200751003-C	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

Laboratory Report of Analysis

To: BGES Inc.
1042 E. 6th Ave.,
Anchorage, AK 99501
(907)644-2900

Report Number: **1203916**

Client Project: **Take Two**

Dear Jayne Martin,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Alexandra at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

_____

Alexandra Daniel Date
Project Manager
Alexandra.Daniel@sgs.com

SGS North America Inc. 200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Case Narrative

SGS Client: **BGES Inc.**
SGS Project: **1203916**
Project Name/Site: **Take Two**
Project Contact: **Jayne Martin**

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 08/17/2020 4:56:01PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW48-0820	1203916001	08/04/2020	08/04/2020	Water (Surface, Eff., Ground)
P20-0820	1203916002	08/04/2020	08/04/2020	Water (Surface, Eff., Ground)
Trip Blank	1203916003	08/04/2020	08/04/2020	Water (Surface, Eff., Ground)

Method	Method Description
SW8260D	Volatile Organic Compounds (W)

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Detectable Results Summary

Client Sample ID: **MW48-0820**
Lab Sample ID: 1203916001
Volatile GC/MS

Parameter	Result	Units
Benzene	0.453	ug/L

Client Sample ID: **P20-0820**
Lab Sample ID: 1203916002
Volatile GC/MS

Parameter	Result	Units
Benzene	0.461	ug/L

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Results of **MW48-0820**

Client Sample ID: **MW48-0820**
Client Project ID: **Take Two**
Lab Sample ID: 1203916001
Lab Project ID: 1203916

Collection Date: 08/04/20 15:55
Received Date: 08/04/20 16:23
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.453		0.400	0.120	ug/L	1		08/05/20 19:51
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		08/05/20 19:51
o-Xylene	1.00 U		1.00	0.310	ug/L	1		08/05/20 19:51
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		08/05/20 19:51
Toluene	1.00 U		1.00	0.310	ug/L	1		08/05/20 19:51
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		08/05/20 19:51
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		08/05/20 19:51
4-Bromofluorobenzene (surr)	103		85-114		%	1		08/05/20 19:51
Toluene-d8 (surr)	101		89-112		%	1		08/05/20 19:51

Batch Information

Analytical Batch: VMS20164
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/05/20 19:51
Container ID: 1203916001-A

Prep Batch: VXX36057
Prep Method: SW5030B
Prep Date/Time: 08/05/20 13:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/17/2020 4:56:08PM

Results of **P20-0820**

Client Sample ID: **P20-0820**
Client Project ID: **Take Two**
Lab Sample ID: 1203916002
Lab Project ID: 1203916

Collection Date: 08/04/20 16:00
Received Date: 08/04/20 16:23
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.461		0.400	0.120	ug/L	1		08/05/20 20:05
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		08/05/20 20:05
o-Xylene	1.00 U		1.00	0.310	ug/L	1		08/05/20 20:05
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		08/05/20 20:05
Toluene	1.00 U		1.00	0.310	ug/L	1		08/05/20 20:05
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		08/05/20 20:05
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		08/05/20 20:05
4-Bromofluorobenzene (surr)	103		85-114		%	1		08/05/20 20:05
Toluene-d8 (surr)	101		89-112		%	1		08/05/20 20:05

Batch Information

Analytical Batch: VMS20164
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/05/20 20:05
Container ID: 1203916002-A

Prep Batch: VXX36057
Prep Method: SW5030B
Prep Date/Time: 08/05/20 13:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 08/17/2020 4:56:08PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Take Two**
Lab Sample ID: 1203916003
Lab Project ID: 1203916

Collection Date: 08/04/20 15:55
Received Date: 08/04/20 16:23
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.400 U		0.400	0.120	ug/L	1		08/05/20 17:38
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		08/05/20 17:38
o-Xylene	1.00 U		1.00	0.310	ug/L	1		08/05/20 17:38
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		08/05/20 17:38
Toluene	1.00 U		1.00	0.310	ug/L	1		08/05/20 17:38
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		08/05/20 17:38
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		08/05/20 17:38
4-Bromofluorobenzene (surr)	103		85-114		%	1		08/05/20 17:38
Toluene-d8 (surr)	101		89-112		%	1		08/05/20 17:38

Batch Information

Analytical Batch: VMS20164
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 08/05/20 17:38
Container ID: 1203916003-A

Prep Batch: VXX36056
Prep Method: SW5030B
Prep Date/Time: 08/05/20 13:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1809917 [VXX/36056]
Blank Lab ID: 1573115

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1203916003

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	105	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20164
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 8/5/2020 2:08:00PM

Prep Batch: VXX36056
Prep Method: SW5030B
Prep Date/Time: 8/5/2020 1:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1203916 [VXX36056]
Blank Spike Lab ID: 1573116
Date Analyzed: 08/05/2020 14:27

Spike Duplicate ID: LCSD for HBN 1203916 [VXX36056]
Spike Duplicate Lab ID: 1573117
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203916003

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	29.8	99	30	29.1	97	(79-120)	2.20	(< 20)
Ethylbenzene	30	31.2	104	30	30.5	102	(79-121)	2.20	(< 20)
o-Xylene	30	30.6	102	30	31.4	105	(78-122)	2.50	(< 20)
P & M -Xylene	60	59.8	100	60	60.0	100	(80-121)	0.23	(< 20)
Toluene	30	28.4	95	30	28.2	94	(80-121)	0.70	(< 20)
Xylenes (total)	90	90.4	100	90	91.3	101	(79-121)	1.00	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	102	102	30	99.2	99	(81-118)	2.90	
4-Bromofluorobenzene (surr)	30	97.8	98	30	97.4	97	(85-114)	0.43	
Toluene-d8 (surr)	30	97.8	98	30	99	99	(89-112)	1.20	

Batch Information

Analytical Batch: **VMS20164**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX36056**
Prep Method: **SW5030B**
Prep Date/Time: **08/05/2020 13:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1809918 [VXX/36057]
Blank Lab ID: 1573118

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1203916001, 1203916002

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	101	89-112		%

Batch Information

Analytical Batch: VMS20164
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 8/5/2020 4:10:00PM

Prep Batch: VXX36057
Prep Method: SW5030B
Prep Date/Time: 8/5/2020 1:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1203916 [VXX36057]
Blank Spike Lab ID: 1573119
Date Analyzed: 08/05/2020 14:56

Spike Duplicate ID: LCSD for HBN 1203916 [VXX36057]
Spike Duplicate Lab ID: 1573120
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1203916001, 1203916002

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	30.3	101	30	29.5	98	(79-120)	2.70	(< 20)
Ethylbenzene	30	31.6	105	30	31.2	104	(79-121)	1.30	(< 20)
o-Xylene	30	32.1	107	30	32.2	107	(78-122)	0.48	(< 20)
P & M -Xylene	60	62.5	104	60	60.8	101	(80-121)	2.70	(< 20)
Toluene	30	29.4	98	30	28.8	96	(80-121)	2.30	(< 20)
Xylenes (total)	90	94.5	105	90	93.1	103	(79-121)	1.60	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	99	99	30	98.4	98	(81-118)	0.64	
4-Bromofluorobenzene (surr)	30	98.6	99	30	98.1	98	(85-114)	0.53	
Toluene-d8 (surr)	30	99.4	99	30	101	101	(89-112)	1.90	

Batch Information

Analytical Batch: **VMS20164**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX36057**
Prep Method: **SW5030B**
Prep Date/Time: **08/05/2020 13:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Daniel, Alexandra (Anchorage)

From: Jayne Martin <jayne@bgesinc.com>
Sent: Monday, August 10, 2020 12:42 PM
To: Daniel, Alexandra (Anchorage)
Subject: [EXTERNAL] RE: 1203916 - 'Take Two' BTEX Samples

Hi Allie,

Analysis by Method 8260C is acceptable.

Thanks,

Jayne Martin
Senior Environmental Scientist

BGES, INC.
1042 East 6th Avenue
Anchorage, AK 99501
Office: (907) 644-2900
Cell: (907) 952-8381

BGES is proud to announce the opening of our new office in Seattle!
Check our website for more information.

From: Daniel, Alexandra (Anchorage) <Alexandra.Daniel@sgs.com>
Sent: Monday, August 10, 2020 10:08 AM
To: Jayne Martin <jayne@bgesinc.com>
Subject: 1203916 - 'Take Two' BTEX Samples

Hi Jayne,

Unfortunately I didn't catch this until after analysis, but we accidentally scheduled your BTEX samples for analysis by the 8260C method when you requested the 8021B method. I was wondering if you would accept the results we have by the 8260 method (we would still only bill you at the 8021 method price, though)? If not, we can reschedule and reanalyze by the correct method requested. I apologize for the complication.

Thanks!

Allie Daniel
Environmental, Health & Safety
Project Manager
SGS North America Inc.
200 West Potter Dr
99518 – Anchorage
Main: +01 907 562 2343

Direct: +01 907 550 3217
E-mail: Alexandra.Daniel@sgs.com

SGS

SGS North America Inc.
CHAIN OF CUSTODY RECORD

1203916

Locations Nationwide

ska	Maryland
w Jersey	New York
th Carolina	Indiana
st Virgina	Kentucky

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Instructions: Sections 1 - 5 must be filled out.
Omissions may delay the onset of analysis.

Section 1

CLIENT: BGES, INC

CONTACT: Jayne Martin PHONE NO: 907-644-2900

PROJECT NAME: Take Two PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Jayne Martin E-MAIL: Jayne@BGESINC.com

INVOICE TO: Jayne Martin QUOTE #: P.O. #: open

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Type C = COMP G = GRAB MI = Multi Incre-mental Soils	Section 3 Preservative: HCl	Section 3 Preservative: BTEX 8021B	REMARKS/ LOC ID
(1AC)	MW48-0820	8-4-2020	15:55	W	3	G		X	
(2AC)	P20-0820	↓	16:00	W	3	G		X	
(3AC)	Trip Blank	—		W	3			X	

Section 5

	Date	Time	
Relinquished By: (1)	8-4-20	16:23	Received By:
Relinquished By: (2)			Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	8.4.20	1623	Received For Laboratory By:

Section 4

DOD Project? Yes (No)

Cooler ID: #1

Data Deliverable Requirements: Level II

Requested Turnaround Time and/or Special Instructions:
Standard Turnaround Time
Profile 334626 qm

Temp Blank °C: 5.6 D50
or Ambient [ ]
(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

e-Sample Receipt Form

SGS Workorder #: **1203916**

1 2 0 3 9 1 6

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
	N/A	**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 5.6 °C Therm. ID: D50
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1203916001-A	HCL to pH < 2	OK			
1203916001-B	HCL to pH < 2	OK			
1203916001-C	HCL to pH < 2	OK			
1203916002-A	HCL to pH < 2	OK			
1203916002-B	HCL to pH < 2	OK			
1203916002-C	HCL to pH < 2	OK			
1203916003-A	HCL to pH < 2	OK			
1203916003-B	HCL to pH < 2	OK			
1203916003-C	HCL to pH < 2	OK			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

APPENDIX C
LABORATORY DATA REVIEW CHECKLISTS

Laboratory Data Review Checklist

Completed By:

Tait Erichsen

Title:

Environmental Scientist I

Date:

1/11/2021

Consultant Firm:

BGES, Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

12000751

Laboratory Report Date:

February 28, 2020

CS Site Name:

Tesoro - Petro Products (formerly Renner's Gas & Save)

ADEC File Number:

2100.26.075

Hazard Identification Number:

23361

12000751

Laboratory Report Date:

February 28, 2020

CS Site Name:

Tesoro - Petro Products (formerly Renner's Gas & Save)

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   Yes☒ No☐ N/A☐ Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   Yes☐ No☒ N/A☐ Comments:

   The samples were not transferred to another laboratory.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   Yes☒ No☐ N/A☐ Comments:

   The sample cooler associated with this work order arrived at the laboratory with a measured temperature blank of 1.5 degrees Celsius (C), which is within the prescribed optimal temperature range of 0 to 6 degrees C.

   b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

   Yes☒ No☐ N/A☐ Comments:

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes☒ No☐ N/A☐ Comments:

No data QC failures were noted in association with the sample conditions upon submittal to the laboratory.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes☐ No☐ N/A☒ Comments:

No discrepancies or unusual conditions were noted.

e. Data quality or usability affected?

Comments:

No discrepancies or unusual conditions were noted.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes☐ No☐ N/A☒ Comments:

There were no discrepancies, errors, or QC failures identified by the lab.

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

There were no discrepancies, errors, or QC failures identified by the lab.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

There were no discrepancies, errors, or QC failures identified by the lab.

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5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

No soil samples were submitted and analyzed for this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes☒ No☐ N/A☐ Comments:

e. Data quality or usability affected?

N/A. The LOQs were less than the ADEC cleanup criteria.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes☒ No☐ N/A☐ Comments:

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iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A. The method blank results were below the LOQs for this work order.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The method blank results were below the LOQs for this work order.

v. Data quality or usability affected?

Comments:

N/A. The method blank results were below the LOQs for this work order.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes☒ No☐ N/A☐ Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

The samples on this work order were not analyzed for metals/inorganics.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

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v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The percent recoveries and RPDs were within the lab's QC limits.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

The samples on this work order were not analyzed for metals/inorganics.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes☒ No☐ N/A☒ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes☒ No☐ N/A☐ Comments:

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v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The percent recoveries and RPDs were within the lab's QC limits.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes☒ No☐ N/A☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes☒ No☐ N/A☐ Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The surrogate recoveries were within the lab's QC limits.

iv. Data quality or usability affected?

Comments:

N/A. The surrogate recoveries were within the lab's QC limits.

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e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes☒ No☐ N/A☐ Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes☒ No☐ N/A☐ Comments:

There was only one cooler for this work order.

iii. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A. All the LOQs were below the ADEC cleanup criteria.

v. Data quality or usability affected?

Comments:

N/A. All the LOQs were below the ADEC cleanup criteria.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

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iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

Water Sample P20-0220 was a duplicate of Water Sample MW4B-0220 and was collected to evaluate field-sampling precision. The RPD for benzene in this sample pair was 4 percent, which is below the acceptable limit of 30 percent for water samples. This suggests that good field-sampling precision was achieved during the collection of these water samples. The RPDs between the reported concentrations of toluene, ethylbenzene, and total xylenes could not be calculated because these analytes were not detected above the laboratory's LOQs.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality was not affected

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☐ No☐ N/A☒ Comments:

Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

i. All results less than LOQ and project specified objectives?

Yes☐ No☐ N/A☒ Comments:

N/A. Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A. Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

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iii. Data quality or usability affected?

Comments:

N/A. Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes☐ No☐ N/A☒ Comments:

No other data flags or qualifiers were required for this work order.

Laboratory Data Review Checklist

Completed By:

Tait Erichsen

Title:

Environmental Scientist I

Date:

1/11/2021

Consultant Firm:

BGES, Inc.

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1203916

Laboratory Report Date:

August 18, 2020

CS Site Name:

Tesoro - Petro Products (formerly Renner's Gas & Save)

ADEC File Number:

2100.26.075

Hazard Identification Number:

23361

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Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   Yes☒ No☐ N/A☐ Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   Yes☐ No☒ N/A☐ Comments:

   The samples were not transferred to another laboratory.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

   It is noted that the laboratory inadvertently analyzed the water sample by EPA Method 8260D instead of the requested Method of 8021B that was marked on the chain of custody documentation. Because analysis of the sample by Method 8260D is also an acceptable analytical method for analysis of the sample for BTEX, this modification does not affect the interpretation of the data.

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   Yes☒ No☐ N/A☐ Comments:

   The sample cooler associated with this work order arrived at the laboratory with a measured temperature blank of 5.6 degrees C, which is within the prescribed optimal temperature range of 0 to 6 degrees C.

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b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes☒ No☐ N/A☐ Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes☒ No☐ N/A☐ Comments:

No data QC failures were noted in association with the sample conditions upon submittal to the laboratory.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes☒ No☐ N/A☐ Comments:

No discrepancies or unusual conditions were documented.

e. Data quality or usability affected?

Comments:

No discrepancies or unusual conditions were noted.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes☐ No☐ N/A☐ Comments:

There were no discrepancies, errors, or QC failures identified by the lab.

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

There were no discrepancies, errors, or QC failures identified by the lab.

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d. What is the effect on data quality/usability according to the case narrative?

Comments:

There were no discrepancies, errors, or QC failures identified by the lab.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

No soil samples were submitted and analyzed for this work order.

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes☒ No☐ N/A☐ Comments:

e. Data quality or usability affected?

N/A. The LOQs were less than the ADEC cleanup criteria.

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

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ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A. The method blank results were below the LOQs for this work order.

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The method blank results were below the LOQs for this work order.

v. Data quality or usability affected?

Comments:

N/A. The method blank results were below the LOQs for this work order.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes☒ No☐ N/A☐ Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

The samples on this work order were not analyzed for metals/inorganics.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

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iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes☒ No☐ N/A☐ Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The percent recoveries and RPDs were within the lab's QC limits.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes☒ No☐ N/A☐ Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☒ Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes☒ No☐ N/A☐ Comments:

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iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes☒ No☐ N/A☐ Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The percent recoveries and RPDs were within the lab's QC limits.

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

N/A. The percent recoveries and RPDs were within the lab's QC limits.

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes☒ No☐ N/A☐ Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes☒ No☐ N/A☐ Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes☐ No☐ N/A☒ Comments:

The surrogate recoveries were within the lab's QC limits.

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iv. Data quality or usability affected?

Comments:

N/A. The surrogate recoveries were within the lab's QC limits.

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes☒ No☐ N/A☐ Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes☒ No☐ N/A☐ Comments:

There was only one cooler for this work order.

iii. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A. All the LOQs were below the ADEC cleanup criteria.

v. Data quality or usability affected?

Comments:

N/A. All the LOQs were below the ADEC cleanup criteria.

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes☒ No☐ N/A☐ Comments:

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ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \times 100$

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☒ No☐ N/A☐ Comments:

Water Sample P20-0820 was a duplicate of Water Sample MW4B-0820 and was collected to evaluate field-sampling precision. The RPD for benzene in this sample pair was 2 percent, which is below the acceptable limit of 30 percent for water samples. This suggests that good field-sampling precision was achieved during the collection of these water samples. The RPDs between the reported concentrations of toluene, ethylbenzene, and total xylenes could not be calculated because these analytes were not detected above the laboratory's LOQs.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality was not affected

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☐ No☐ N/A☒ Comments:

Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

i. All results less than LOQ and project specified objectives?

Yes☐ No☐ N/A☐ Comments:

N/A. Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

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ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A. Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

iii. Data quality or usability affected?

Comments:

N/A. Collection and analysis of a decontamination or equipment blank was not a part of approved scope of work for this project.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes☐ No☐ N/A☒ Comments:

No other data flags or qualifiers were required for this work order.