SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

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December 11, 2017

Holiday Companies
4567 American Boulevard West
Bloomington, MN 55437

Attn: Ms. Camie Pederson, P.E.

RE: 2017 GROUNDWATER MONITORING, HOLIDAY STATION STORE NO. 602, 10630 OLD SEWARD HIGHWAY, ANCHORAGE, ALASKA

ADEC FILE NO. 2100.26.018; FACID NO. 1498

This letter report presents the results of our 2017 annual groundwater monitoring conducted at Holiday Station Store (HSS) No. 602, 10630 Old Seward Highway, Anchorage, Alaska (the Property).

BACKGROUND

HSS 602 is utilized as a fueling station and is located in an industrial/commercial area. The western portion of the property is currently utilized by a third party for equipment storage. An active Alaska Department of Environmental Conservation (ADEC) listed contaminated site (Forsythe Transportation, Inc. at 10570 Old Seward Highway) borders HSS 602 to the north. Further north at 10460 Old Seward Highway is a closed contaminated site identified as Airport Equipment Rentals. HSS 602 is bound by the Old Seward Highway to the east, an undeveloped parcel to the south, and the Alaska Railroad to the west.

Three underground storage tanks (USTs) and associated dispensers were removed from the site in June 1989. The current facility was constructed during 1997, and uses three USTs with volumes between 10,000 and 20,000 gallons to store unleaded gasoline and diesel fuel. At that time, a combined vapor extraction system (VES) and air injection system (AIS) was installed at the site. The primary remedial objective of the VES and AIS was to inhibit off-Property migration of impacted groundwater, with a secondary objective of treating impacted soil in the source areas. As documented in our December 30, 2016 *Remediation System Decommissioning, Holiday Station Store No. 602, 10630 Old Seward Highway, Anchorage, Alaska* report, the VES and AIS remediation systems were decommissioned in 2016.

As documented in our November 20, 2017 *Monitoring Well Installation, Decommissioning, and Repair Activities, Holiday Station Store No. 602, 10630 Old Seward Highway, Anchorage,*

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Alaska report, Monitoring Well MW-35 was installed downgradient of Well MW-32, on the Airport Equipment Rentals, Inc. property in September 2017. In addition, Monitoring Well MW-16 was decommissioned and Well MW-22 was repaired. Locations of the site's groundwater monitoring wells are shown on Figure 1.

GROUNDWATER MONITORING

Groundwater sampling is conducted on an annual basis to evaluate the plume boundaries and trends in dissolved-phase hydrocarbon contamination throughout the site and adjacent properties to the north.

Sampling Event Summary

Groundwater samples were collected from 15 monitoring wells between October 11 and 13, 2017. Groundwater samples were not collected from Monitoring Well MW-22, MW-26, and MW-34. Although an attempt to repair Monitoring Well MW-22 was conducted in September 2017, bentonite was documented in the well casing, preventing sampling. Monitoring Well MW-26 could not be located. This well was last sampled in 2013 and is assumed to be destroyed. Approximately 0.2 foot of product was measured in Well MW-34.

The groundwater wells were purged prior to sample collection. With the exception of Wells MW-32, MW-33, and MW-35, purging consisted of removing approximately three well volumes from each well with disposable bailers. A submersible pump was used to purge Wells MW-32, MW-33, and MW-35 because the well screens are intentionally set below the water table to target specific depth intervals. The pump was placed near the midpoint of the well screens during purging and sampling. At each well, field parameters including temperature, specific conductivity, pH, dissolved oxygen, and turbidity were measured following removal of three well volumes. Field measurements of water quality parameters for the October 2017 groundwater samples are listed in Table 1.

The purge water from wells which historically contained contaminant concentrations less than the applicable cleanup levels (Wells MW-18, MW-20, MW-31B, and MW-33) was discharged to unpaved portions of the property, as approved by Mr. O'Connell in an August 19, 2013 email. Purge water from wells which historically contained contaminant concentrations in excess of the applicable ADEC cleanup levels (Wells MW-14, MW-15, MW-17, MW-21, MW-23, MW-27, MW-28, MW-29, MW-30, and MW-32) and newly installed Well MW-35 was containerized in a

55-gallon drum and stored onsite. The purge water will be disposed by NRC Alaska LLC. Following disposal, the disposal receipts will be provided to ADEC under separate cover.

Groundwater Flow Data

The October 2017 groundwater depths ranged from 15.08 (Well MW-18) to 26.15 (Well MW-15) feet below the tops of the well casings. The average October 2017 water level was about 0.6 foot shallower than the average water level of the same wells measured in September 2016. The historical groundwater flow direction is to the northwest in the immediate vicinity of HSS No. 602, with a general regional direction to the west.

Product Observations

Free product (0.02 foot) was observed in Monitoring Well MW-34 during the October 2017 monitoring event. Although free product has not been previously documented in this well, previous contaminant concentrations have been greater than the solubility limits, which is indicative of non-aqueous phase liquids (NAPLs) in the groundwater and/or soil.

LABORATORY ANALYSES

The groundwater samples from the October 2017 monitoring event were submitted to SGS North America, Inc. (SGS) of Anchorage, Alaska using chain-of-custody procedures. The samples were analyzed for benzene, toluene, ethylbenzene, and xylenes BTEX by Environmental Protection Agency (EPA) Method 8021B. In addition, the sample collected from Well MW-35 was analyzed for gasoline range organics (GRO) by Alaska Method (AK) 101. The BTEX and GRO results for the October 2017 samples are shown on Figure 1, and historical benzene and total BTEX trends for selected wells are presented in Graphs 1 through 16. Historical BTEX data obtained since 2004 are listed in Table 3.

DISCUSSION OF ANALYTICAL RESULTS

Multiple potential source areas are considered in this evaluation. One or more plume(s) originate from on-Property source area(s), including the former and/or active UST and pump island areas. One or more discrete plume(s) also appear to originate at off-Property locations north of HSS No. 602. Wells are screened within three zones which are potentially hydraulically connected. The “shallow” zone consists of thin, discontinuous sand stringers imbedded in silt-rich soil between about 20 and 30 feet below ground surface (bgs); the “intermediate” zone appears to be located between about 35 and 45 feet bgs; and the “deep” zone is located below 45 feet bgs.

The analytical groundwater sample results are used to evaluate source areas, delineate plume boundaries, track changes in hydrocarbon distribution throughout the plume(s), and to evaluate differences between discrete water-bearing intervals. The following general observations are noted from a comparison of the 2017 monitoring data to the historical trends, based on a qualitative interpretation of the data presented on Graphs 1 through 16 and Table 2.

1. The following observations were noted regarding the extents and trends observed in the on-Property plume:

   - Of the three on-Property wells, Well MW-28 has generally contained the greatest benzene and total BTEX concentrations. Well MW-28 is located at the northwest corner (downgradient) of the former pump islands. As shown on Graph 2, benzene and total BTEX results in samples from Well MW-28 exhibited an increasing trend between 2012 and 2016. The 2017 results are consistent with historical averages.
   - Benzene and BTEX concentrations in samples from Well MW-27 have been variable in recent years. The 2017 results are consistent with historical averages.
   - The lowest benzene and BTEX concentrations in the three on-Property wells have been observed in samples from Well MW-30, which is located approximately 90 feet downgradient (northwest) from source-area Well MW-28. Historical sample results were less than the ADEC cleanup levels from 2008 to 2014 and in September 2016 and October 2017. The benzene concentration from the September 2015 monitoring event was above the ADEC cleanup level, but remained at least an order of magnitude lower than the concentrations in the other two on-Property wells (Wells MW-27 and MW-30), and the off-Property wells (Wells MW-22 and MW-29) located in the vicinity of the former Southeast UST array at the First Student Property. The 2017 results are consistent with the previously 4 years of sample results.

2. The following observations were noted regarding the off-Property “shallow” plume:

   - BTEX concentrations in samples from Wells MW-23 and MW-29 increased from the previous sampling event. The concentration of benzene in Well MW-23 is the highest since 2006.
   - During previous sampling events, Well MW-22 has appeared to exhibit results typical of a source area well due to consistently higher BTEX concentration magnitudes relative to other nearby and downgradient wells. Currently, the well cannot be sampled and appears to be broken below ground surface allowing bentonite to enter the well casing.

- Historical results indicate that the "shallow" off-Property plume's leading edge is in the vicinity of Wells MW-15 and MW-17 and former Well MW-16. Historically, low levels of benzene and total BTEX concentrations have been intermittently detected in Wells MW-15, MW-16, and MW-17. During the 2017 sampling event, benzene and total BTEX were either not detected or were detected at concentrations less than the cleanup levels in Wells MW-15 and MW-17.

- Samples from Wells MW-17, MW-18, and MW-20 did not contain detectable concentrations of BTEX, and bound the plume to the north/northwest.

- Benzene exceeding the ADEC cleanup level was documented in Well MW-14. The leading edge of the benzene plume downgradient of MW-14 is unknown at this time.

3. The following observations were noted regarding the off-Property "intermediate" plume:

   - The greatest BTEX concentration of the on-Property and off-Property wells have been measured consistently in samples from "intermediate" Well MW-31A (which was replaced by Well MW-34 in 2013), which is downgradient of the former Southeast UST array at the First Student Property. Approximately 0.2 foot of free product was measured in Well MW-34 during the 2017 sampling event.

   - Data from Well MW-32 have been generally stable the past three years. Well MW-32 appears to represent the leading edge of the "intermediate" plume.

   - The sample results from newly installed Well MW-35 bound the "intermediate" plume to the northwest.

4. The following observation was noted regarding the "deep" plume:

   - Concentrations in each sample from "deep" Well MW-33, located adjacent to MW-16, have been less than the ADEC cleanup level since 2007, and are typically not detected, including in 2017. Based on these results, the well can be considered a sentry well for the deep water bearing formation.

5. The potentiometric groundwater surface was above the top of the well screen in Wells MW-17, MW-18, MW-23, MW-29, and MW-32 through MW-35. Therefore, the water samples collected from these wells may not be representative of the smear zone, where the highest concentrations of petroleum hydrocarbons would be expected if the potentiometric surface is

equal to the water table (i.e. not a confined or semi-confined aquifer with positive pore pressure), although this is potentially mitigated by purging three well volumes prior to sampling. For Wells MW-32 through MW-35, this is intentional to target specific water bearing intervals.

QUALITY CONTROL

The project laboratory follows on-going quality assurance/quality control procedures to evaluate conformance to applicable ADEC data quality objectives (DQOs). Internal laboratory controls to assess data quality for this project include surrogates, method blanks, matrix spike/matrix spike duplicates (MS/MSD), and laboratory control sample/laboratory control sample duplicates (LCS/LCSD) to assess precision, accuracy, and matrix bias. If a DQO was not met, the project laboratory provides a brief narrative concerning the problem in the case narrative of their laboratory report (see Attachment 1).

A laboratory-prepared trip blank sample accompanied the project sample bottles from the laboratory to the site during sampling activities and back again to SGS. The trip blank contained an estimated (J-flagged) concentration of xylene. The project sample (MW-30) with an estimated (J-flagged) detection of xylene is reported as non-detect at the LOQ and flagged "B" on Figure 1 and Table 2. Sample MW-14 also contained xylene within 10 times the trip blank detection. Therefore, the xylene result is flagged "B" at the detected concentration on Figure 1 and Table 2.

Shannon & Wilson conducted a limited data assessment to review the laboratory's compliance with precision, accuracy, sensitivity, and completeness to the DQOs. Shannon & Wilson reviewed the SGS data deliverables and completed the ADEC's Laboratory Data Review Checklist, which is included in Attachment 1. Non-conformances that would adversely affect the quality or usability of the data were not noted.

SUMMARY AND RECOMMENDATIONS

The 2017 groundwater sample data continue to indicate elevated dissolved-phase hydrocarbon concentrations in both on-Property and off-Property monitoring wells. Concentration gradients and distribution patterns remain consistent with the presence of discrete on-Property and off-Property source areas. The data also indicate different plume characteristics at discrete depth intervals. The plume in the "shallow" zone has historically been defined, with the leading edge in the approximate vicinity of Well MW-15 and former Well MW-16. The leading edge of the

plume of the 'intermediate' zone is located in the vicinity of Well MW-32. With the exception of the October 2007 sample, BTEX concentrations in samples from Well MW-33, which is screened in the "deep" zone, have either been non-detect or less than the ADEC cleanup level.

The following actions are recommended:

- Screen Wells MW-28 and MW-34 for the presence of measurable product, prior to sampling. If product is measured, the well will not be sampled.
- Due to the damage to the well casing, decommission Well MW-22.
- Well MW-26 has not been located and sampled since 2013. Remove the well from the sampling program.

We appreciate this opportunity to be of service and your continued confidence in our firm. Please contact the undersigned at (907) 561-2120 with questions or comments concerning this report.

Sincerely,

SHANNON & WILSON, INC.

Dan P. McMahon
Associate

Matthew S. Hemry, P.E.
Vice President

Enc: Tables 1 and 2; Figure 1; Graphs 1 through 16; and Attachment 1

cc: Mr. Bill O'Connell, ADEC
Mr. Rick Johnson, Forsythe Transportation, Inc.
Mr. Jay Sadler, Airport Equipment Rentals

TABLE 1
OCTOBER 2017 GROUNDWATER SAMPLING LOG

WATER LEVEL MEASUREMENT DATA

Well Number	MW-14	MW-15	MW-17	MW-18	MW-20
Date Water Level Measured	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017
Time Water Level Measured	16:40	14:20	11:35	12:10	14:30
Measured Depth to Water (ft below MP)	22.02	26.15	17.53	15.08	22.36

SAMPLING DATA

Well Number	MW-14	MW-15	MW-17	MW-18	MW-20
Date Sampled	10/13/2017	10/13/2017	10/13/2017	10/12/2017	10/11/2017
Time Sampled	9:15	13:50	13:00	10:00	17:10
Measured Depth to Water (ft below MP)	22.02	26.15	17.53	15.08	22.36
Total Depth of Well (ft below MP)	34.30	34.16	33.39	33.62	31.27
Water Column in Well (ft)	12.28	8.01	15.86	18.54	8.91
Screened interval (ft below GS)*	19-34.5	20-34.8	23.9-33.7	24.7-34.5	20-35
Diameter of Well Casing (in)	2	2	2	2	2
Gallons per Foot	0.16	0.16	0.16	0.16	0.16
Water Column Volume (gallons)	1.96	1.28	2.54	2.97	1.43
Total Volume Pumped/Bailed (gallons)	6.0	4.0	7.7	9.0	4.3
Sampling Method	Bailer	Bailer	Bailer	Bailer	Bailer

WATER QUALITY DATA

Well Number	MW-14	MW-15	MW-17	MW-18	MW-20
Temperature (^{o}C)	6.72	6.62	6.32	6.14	5.70
Specific Conductivity (µS/cm)	329	463	243	224	458
pH (Standard Units)	7.60	7.10	8.12	8.23	4.71
Turbidity (NTU)	286	>1000	735	876	543
Dissolved Oxygen (mg/L)	14.2	8.12	11.3	8.22	6.04
Remarks					

Note: Water quality parameters were measured with a YSI 556 and Hach Tur

KEY	DESCRIPTION
^{o}C	Degrees Celsius
ft	Feet
in	Inches
MP	Measuring Point; Measurements taken from the top of well casing
GS	Ground Surface
µS/cm	Microsiemens per Centimeter
NTU	Nephelometric Turbidity Unit
mg/L	Milligrams per Liter
*	At time of well installation
NS	Not Sampled
-	Not measured or not applicable

TABLE 1
OCTOBER 2017 GROUNDWATER SAMPLING LOG

WATER LEVEL MEASUREMENT DATA

Well Number	MW-21	MW-22	MW-23	MW-26	MW-27	MW-28
Date Water Level Measured	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017
Time Water Level Measured	13:05	13:30	15:28	-	10:30	10:45
Measured Depth to Water (ft below MP)	22.10	18.98	22.92	-	20.75	17.20

SAMPLING DATA

Well Number	MW-21	MW-22	MW-23	MW-26	MW-27	MW-28
Date Sampled	10/12/2017	NS	10/13/2017	NS	10/12/2017	10/12/2017
Time Sampled	17:30	NS	15:00	NS	18:00	14:45
Measured Depth to Water (ft below MP)	22.10	18.98	22.92	-	20.75	17.20
Total Depth of Well (ft below MP)	28.71	27.24	31.95	-	29.24	31.51
Water Column in Well (ft)	6.61	8.26	9.03	-	8.49	14.31
Screened interval (ft below GS)*	19-35	23-33	23-32.8	9.5-29.7	9.5-29.9	12.9-33.1
Diameter of Well Casing (in)	2	2	2	2	2	2
Gallons per Foot	0.16	0.16	0.16	0.16	0.16	0.16
Water Column Volume (gallons)	1.06	1.32	1.44	-	1.36	2.29
Total Volume Pumped/Bailed (gallons)	3.3	NS	4.5	NS	4.2	6.9
Sampling Method	Bailer	NS	Bailer	NS	Bailer	Bailer

WATER QUALITY DATA

Well Number	MW-21	MW-22	MW-23	MW-26	MW-27	MW-28
Temperature (^{o}C)	5.91	-	7.05	-	7.03	7.07
Specific Conductivity (µS/cm)	448	-	449	-	692	4,284
pH (Standard Units)	7.51	-	7.34	-	6.91	6.84
Turbidity (NTU)	330	-	943	-	>1000	623
Dissolved Oxygen (mg/L)	15.3	-	6.59	-	7.45	7.38
Remarks		Bentonite in well		Could not locate		

bidimeter

Note: Water quality parameters were measured with YSI 556 and Hach Turbidimeter

KEY	DESCRIPTION
^{o}C	Degrees Celsius
ft	Feet
in	Inches
MP	Measuring Point; Measurements taken from the top of well casing
GS	Ground Surface
µS/cm	Microsiemens per Centimeter
NTU	Nephelometric Turbidity Unit
mg/L	Milligrams per Liter
*	At time of well installation
NS	Not Sampled
-	Not measured or not applicable

TABLE 1
OCTOBER 2017 GROUNDWATER SAMPLING LOG

WATER LEVEL MEASUREMENT DATA

Well Number	MW-29	MW-30	MW-31B	MW-32	MW-33	MW-34	MW-35
Date Water Level Measured	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017	10/11/2017
Time Water Level Measured	13:20	10:35	10:50	11:20	11:15	14:50	11:50
Measured Depth to Water (ft below MP)	18.90	18.95	23.10	17.92	15.91	23.50	18.68

SAMPLING DATA

Well Number	MW-29	MW-30	MW-31B	MW-32	MW-33	MW-34	MW-35
Date Sampled	10/12/2017	10/12/2017	10/12/2017	10/13/2017	10/12/2017	NS	10/13/2017
Time Sampled	16:10	13:40	10:55	12:10	12:10	NS	11:00
Measured Depth to Water (ft below MP)	18.90	18.95	23.10	17.92	15.91	23.50	18.68
Total Depth of Well (ft below MP)	28.35	27.32	25.25	44.79	67.21	44.35	47.54
Water Column in Well (ft)	9.45	8.37	2.15	26.87	51.30	20.85	28.86
Screened interval (ft below GS)*	20.3-30.3	13.3-28.3	15.8-25.8	35-45	58-68	35-45	38-48
Diameter of Well Casing (in)	2	2	2	2	2	2	2
Gallons per Foot	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Water Column Volume (gallons)	1.51	1.34	0.34	4.30	8.21	3.34	4.62
Total Volume Pumped/Bailed (gallons)	4.6	4.5	2.0	13.2	22	NS	14
Sampling Method	Bailer	Bailer	Bailer	Submersible Pump	Submersible Pump	NS	Bailer

WATER QUALITY DATA

Well Number	MW-29	MW-30	MW-31B	MW-32	MW-33	MW-34	MW-35
Temperature (^{o}C)	7.01	7.05	6.09	5.28	6.01	-	6.59
Specific Conductivity (µS/cm)	501	598	461	328	109	-	475
pH (Standard Units)	7.41	7.32	7.55	7.48	8.13	-	7.35
Turbidity (NTU)	391	>1000	612	51.7	89.7	-	49.4
Dissolved Oxygen (mg/L)	4.49	8.02	9.41	3.55	5.45	-	5.20
Remarks						0.2 foot of product in well	

Note: Water quality parameters were measured with YSI 556 and Hach Turbidimeter

KEY	DESCRIPTION
^{o}C	Degrees Celsius
ft	Feet
in	Inches
MP	Measuring Point; Measurements taken from the top of well casing
GS	Ground Surface
µS/cm	Microsiemens per Centimeter
NTU	Nephelometric Turbidity Unit
mg/L	Milligrams per Liter
*	At time of well installation
NS	Not Sampled
-	Not measured or not applicable
~	Well screen intentionally placed below groundwater interface

TABLE 2 - GROUNDWATER SAMPLING HISTORICAL DATA

			Target Analyte Concentrations (mg/L)			
Well No.	**Sample Date**	**Groundwater Depth^ (feet)**	**Benzene**	**Total BTEX**	**1,2,4-Tri-methylbenzene**	**1,3,5-Tri-methylbenzene**
MWP-3	9/21/2004	23.75	ND	ND	ND	ND
	4/4/2005	18.98	ND	ND	-	-
	Removed from groundwater sampling program October 2005					
	Decommissioned on May 29, 2014					
MW-11	3/23/2004	29.71	ND	ND	-	-
	9/21/2004	29.89	ND	ND	ND	ND
	4/4/2005	26.47	ND	ND	-	-
	Removed from groundwater sampling program October 2005					
	Decommissioned on May 29, 2014					
MW-12	5/5/2004	30.82	**0.280**	0.498	-	-
	9/21/2004	27.40	**0.009**	0.0110	ND	ND
	4/4/2005	-	-	-	-	-
	10/5/2005	24.56	ND	ND	-	-
	4/14/2006	26.87	ND	ND	-	-
	9/15/2006	25.40	ND	ND	-	-
	Removed from groundwater sampling program September 2008					
	Decommissioned on May 29, 2014					
MW-13	9/21/2004	19.57	ND	ND	ND	ND
	4/4/2005	19.25	ND	ND	-	-
	Removed from groundwater sampling program October 2005					
	Decommissioned on May 29, 2014					
MW-14	10/5/2005	22.95	ND	ND	-	-
	4/14/2006	26.16	**0.0167**	0.540	-	-
	9/15/2006	23.50	**0.00825**	0.0268	-	-
	5/3/2007	25.01	**0.0206**	0.1170	-	-
	9/29/2008	22.79	0.000524	0.000524	-	-
	9/24/2009	24.28	**0.0168 J**	0.0346 J	-	-
	9/8/2010	23.34	ND	ND	-	-
	9/21/2011	23.04	ND	ND	-	-
	9/28/2012	18.61	ND	ND	-	-
	10/8/2013	20.30	0.00240	0.0200	-	-
	9/4/2014	21.20	0.000150 J	0.00123 J	-	-
	9/9/2015	24.79	**0.0247 J+**	0.210 J+	-	-
	9/29/2016	22.82	**0.0168 J+**	0.040 J+	-	-
	10/13/2017	22.02	**0.0137 J+**	0.0418 J+, B		
MW-15	4/14/2006	28.72	ND	ND	-	-
	9/15/2006	27.82	**0.0366**	0.0851	-	-
	5/4/2007	24.23	ND	ND	-	-
	10/8/2007	27.85	ND	0.00216	-	-
	4/29/2008	28.02	0.00121	0.00121	-	-
	9/29/2008	26.90	**0.00584**	0.00584	-	-
	9/24/2009	27.92	0.000791	0.000791	-	-
	9/8/2010	27.20	ND	ND	-	-
	9/21/2011	27.56	ND	ND	-	-
	9/28/2012	25.56	0.00213	0.00341 J	-	-
	10/8/2013	25.31	**0.0603**	0.117	-	-
	9/4/2014	25.31	**0.179**	0.228	-	-
	9/9/2015	27.89	**0.0131**	0.0272 J	-	-
	9/29/2016	26.85	0.00052	0.00052	-	-
	10/13/2017	26.15	0.00238	0.00296 J		

Key provided on Page 6.

TABLE 2 - GROUNDWATER SAMPLING HISTORICAL DATA

			Target Analyte Concentrations (mg/L)			
Well No.	**Sample Date**	**Groundwater Depth^ (feet)**	**Benzene**	**Total BTEX**	**1,2,4-Tri-methylbenzene**	**1,3,5-Tri-methylbenzene**
MW-16	4/4/2005	23.89	ND	ND	-	-
	10/4/2005	22.62	ND	ND	-	-
	4/14/2006	24.72	ND	ND	-	-
	9/15/2006	-	Could not locate		-	-
	5/3/2007	28.54	**0.00961**	0.00961	-	-
	10/10/2007	18.02	**0.00499***	0.0226*	-	-
	4/28/2008	24.01	ND	ND	-	-
	9/30/2008	22.81	ND	ND	-	-
	9/24/2009	23.71	ND	ND	-	-
	9/7/2010	22.80	ND	ND	-	-
	9/22/2011	23.32	ND	0.00151	-	-
	9/27/2012	20.81	ND	ND	-	-
	10/8/2013	20.59	**0.0703**	0.236	-	-
	9/4/2014	21.58	**0.00934**	0.0246	-	-
	9/9/2015	23.80	Not Sampled - Damaged			
	9/29/2016	21.82	Not Sampled - Damaged			
	Decommissioned on September 22, 2017					
MW-17	4/4/2005	22.36	**0.00596**	0.00596	-	-
	10/4/2005	20.80	ND	ND	-	-
	4/14/2006	21.19	ND	ND	-	-
	9/18/2006	19.05	ND	ND	-	-
	5/4/2007	28.66	**0.126**	0.204	-	-
	10/10/2007	19.15	0.00257*	0.0117*	-	-
	4/28/2008	20.48	**0.00837**	0.0120	-	-
	9/30/2008	19.45	ND	ND	-	-
	9/24/2009	20.30	ND	0.00261	-	-
	9/7/2010	19.15	ND	ND	-	-
	9/22/2011	19.72	ND	ND	-	-
	9/27/2012	16.99	ND	ND	-	-
	10/8/2013	17.07	0.000200 J	0.000200 J	-	-
	9/4/2014	18.51	0.000160 J	0.000160 J	-	-
	9/10/2015	20.38	**0.00847**	0.00980	-	-
	9/29/2016	18.02	ND	0.000830 J		
	10/13/2017	17.53	ND	ND	-	-
MW-18	4/4/2005	21.77	ND	ND	-	-
	10/4/2005	-	-	-	-	-
	4/14/2006	20.40	ND	ND	-	-
	9/18/2006	16.60	ND	ND	-	-
	5/4/2007	28.58	0.00285	0.00285	-	-
	4/28/2008	18.98	ND	ND	-	-
	9/30/2008	16.97	0.000571	0.000571	-	-
	9/24/2009	18.25	ND	0.00564	-	-
	9/8/2010	16.48	ND	ND	-	-
	9/22/2011	17.29	ND	ND	-	-
	9/27/2012	13.67	ND	ND	-	-
	10/8/2013	13.41	0.000150 J	0.000610 J	-	-
	9/4/2014	15.71	ND	ND	-	-
	9/10/2015	18.98	ND	ND	-	-
	9/29/2016	15.85	ND	ND		
	10/12/2017	15.08	ND	ND		
MW-19	3/23/2004	19.82	ND	ND	-	-
	9/21/2004	18.79	-	-	-	-
	Removed from groundwater sampling program April 2005					

Key provided on Page 6.

TABLE 2 - GROUNDWATER SAMPLING HISTORICAL DATA

			Target Analyte Concentrations (mg/L)			
Well No.	**Sample Date**	**Groundwater Depth^ (feet)**	**Benzene**	**Total BTEX**	**1,2,4-Tri-methylbenzene**	**1,3,5-Tri-methylbenzene**
MW-20	5/3/2007	23.84	ND	ND	-	-
	4/28/2008	23.78	ND	ND	-	-
	9/29/2008	23.56	ND	ND	-	-
	9/24/2009	24.13	ND	ND	-	-
	9/8/2010	23.50	ND	ND	-	-
	9/21/2011	23.70	ND	ND	-	-
	9/28/2012	22.45	ND	ND	-	-
	10/7/2013	22.37	0.000210 J	0.000540 J	-	-
	9/4/2014	23.12	ND	ND	-	-
	9/9/2015	23.97	ND	ND	-	-
	9/29/2016	22.66	ND	0.000330 J		
	10/11/2017	22.36	ND	ND	-	-
MW-21	10/5/2005	21.21	**3.89**	3.89	-	-
	9/15/2006	Could not locate	-	-	-	-
	10/10/2007	18.25	**0.631**	2.99	-	-
	9/29/2008	24.78	**0.125**	0.125	-	-
	9/24/2009	22.71	**0.907**	0.914	-	-
	9/7/2010	22.28	0.00367	0.00367	-	-
	9/21/2011	23.36	**0.0895**	0.0895	-	-
	9/28/2012	19.88	ND	0.000310 J	-	-
	10/9/2013	20.02	0.000320 J	0.00209 J	-	-
	9/4/2014	20.08	**0.379**	0.380 J	-	-
	9/9/2015	22.87	**0.423**	0.423	-	-
	9/29/2016	22.5	**1.14**	1.140		
	10/12/2017	22.10	**0.688**	0.688 J	-	-
MW-22	10/5/2005	18.94**	**6.15**	55.5	-	-
	4/14/2006	22.05**	**5.36**	48.2	-	-
	9/25/2006	20.36	**5.16**	60.6	-	-
	5/3/2007	21.32	**4.83**	69.7	-	-
	10/10/2007	19.54	**14.0**	92.2	-	-
	9/30/2008	22.19	**6.40**	58.4	-	-
	9/24/2009	-	**3.67**	30.9	-	-
	9/7/2010	19.55	**3.18**	27.4	-	-
	9/21/2011	19.67	**1.63**	28.0	-	-
	9/28/2012	16.75	**0.0319**	2.57	-	-
	10/9/2013	16.69	**1.55**	32.4	-	-
	9/3/2014	17.53	Not sampled - Contained 0.01 foot of product			-
	9/9/2015	20.29	**0.680**	28.4	-	-
	9/29/2016	-	Not sampled - Damaged			
	10/11/2017	18.98	Not sampled - Damaged		-	-
MW-23	10/5/2005	23.58	ND	ND	-	-
	4/14/2006	26.22	0.00280	0.0750	-	-
	9/15/2006	23.91	**7.83**	37.6	-	-
	5/3/2007	25.19	**0.311**	0.985	-	-
	10/8/2007	23.99	ND	ND	-	-
	9/29/2008	23.50	ND	ND	-	-
	9/24/2009	24.65	**0.0477**	0.0593	-	-
	9/8/2010	23.74	**0.232 J**	0.400 J	-	-
	9/21/2011	23.36	0.00201	0.0113	-	-
	9/28/2012	19.67	**0.285**	2.60	-	-
	10/8/2013	21.45	**3.38**	27.5	-	-
	9/4/2014	21.69	**0.157**	0.885	-	-
	9/9/2015	24.84	**0.422**	1.76	-	-
	9/29/2016	23.62	**0.0233**	0.07		
	10/13/2017	22.92	**4.09**	24.6	-	-

Key provided on Page 6.

TABLE 2 - GROUNDWATER SAMPLING HISTORICAL DATA

			Target Analyte Concentrations (mg/L)			
Well No.	**Sample Date**	**Groundwater Depth^ (feet)**	**Benzene**	**Total BTEX**	**1,2,4-Tri-methylbenzene**	**1,3,5-Tri-methylbenzene**
MW-26	9/21/2004	23.49	**0.374**	30.6	**2.71**	**0.679**
	4/4/2005	23.26	**0.195**	21.1	-	-
	10/5/2005	-	-	-	-	-
	4/14/2006	24.79	**0.249**	17.81	-	-
	9/25/2006	22.35	**0.0695**	10.91	-	-
	5/3/2007	24.25	**0.172**	11.79	-	-
	9/29/2008	21.11	**0.00761**	0.425	-	-
	9/24/2009	22.71	**0.0497 J**	4.84 J	-	-
	9/8/2010	22.19	**0.0333**	2.39	-	-
	9/22/2011	21.73	0.00260	0.157	-	-
	9/27/2012	18.28	ND	0.000370 J	-	-
	10/9/2013	19.03	**0.0134**	7.11	-	-
	9/2/2014	Not sampled - Could not locate				
	9/9/2015	Not sampled - Could not locate				
	9/29/2016	Not sampled - Could not locate				
	10/11/2017	Not sampled - Could not locate				
MW-27	4/4/2005	21.12	**0.0665**	0.0665	-	-
	10/5/2005	19.56	**1.04**	1.23	-	-
	4/14/2006	22.84	**2.94**	3.94	-	-
	9/15/2006	20.70	**3.05**	5.94	-	-
	5/3/2007	22.95	**4.60**	7.64	-	-
	10/8/2007	19.82	**0.136**	0.153	-	-
	9/29/2008	20.59	**0.342**	0.422	-	-
	9/23/2009	21.56	**2.22**	7.12	-	-
	9/8/2010	20.04	**0.0151**	0.0224	-	-
	9/22/2011	20.64	**2.01**	3.50	-	-
	9/28/2012	17.19	**0.0149**	0.0205 J	-	-
	10/8/2013	17.12	**0.453**	0.667	-	-
	9/5/2014	17.75	**0.304**	0.437 J	-	-
	9/10/2015	21.25	**1.43**	2.90	-	-
	9/30/2016	20.92	**0.50**	0.85		
	10/12/2017	20.75	**1.66**	3.22		
MW-28	1/5/2005	15.09	**23.6**	59.6	-	-
	4/4/2005	17.71	**4.81**	10.6	-	-
	10/5/2005	14.71	**15.4**	44.1	-	-
	4/14/2006	18.93	**12.6**	28.2	-	-
	9/15/2006	15.79	**14.0**	47.21	-	-
	5/3/2007	28.36	**14.8**	33.72	-	-
	10/8/2007	15.59	**9.28**	29.76	-	-
	9/29/2008	15.12	**0.756**	3.19	-	-
	9/23/2009	18.50	**4.92 J**	22.4 J	-	-
	5/5/2010*	19.61	**0.0274**	0.0678	-	-
	5/6/2010*	19.41	**1.59**	5.24	-	-
	7/6/2010*	17.20	**5.56**	32.2	-	-
	7/8/2010*	17.95	**2.60**	9.80	-	-
	9/8/2010	15.24	**0.644**	7.09	-	-
	9/22/2011	16.44	**4.65**	33.0	-	-
	9/28/2012	12.18	0.00348	0.154	-	-
	10/8/2013	12.69	**0.121**	1.57	-	-
	9/5/2014	14.18	**0.612**	8.93	-	-
	9/10/2015	18.30	**2.96**	40.4	-	-
	9/30/2016	17.69	**3.78**	49.6		
	10/12/2017	17.20	**3.38**	41.4		

Key provided on Page 6.

TABLE 2 - GROUNDWATER SAMPLING HISTORICAL DATA

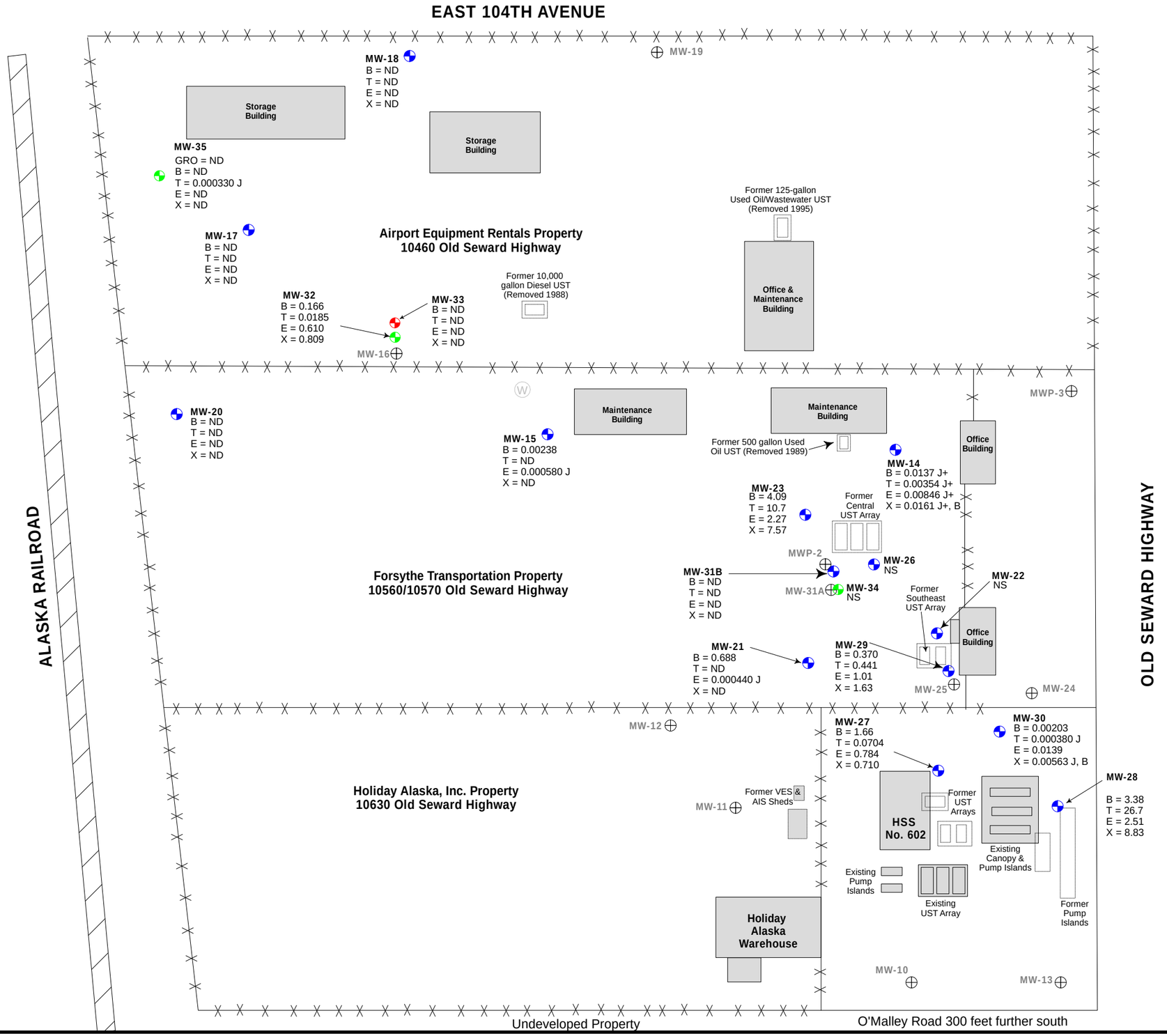
			Target Analyte Concentrations (mg/L)			
Well No.	**Sample Date**	**Groundwater Depth^ (feet)**	**Benzene**	**Total BTEX**	**1,2,4-Tri-methylbenzene**	**1,3,5-Tri-methylbenzene**
MW-29	4/4/2005	19.92	**1.31**	9.54	-	-
	10/5/2005	19.02	**0.775**	3.73	-	-
	4/14/2006	22.03	**1.42**	10.9	-	-
	9/15/2006	16.70	**1.07**	6.98	-	-
	5/3/2007	22.11	**1.13**	7.53	-	-
	10/8/2007	19.98	**2.85**	17.8	-	-
	9/30/2008	20.75	**0.797**	14.8	-	-
	9/24/2009	20.10	**0.0425**	0.199	-	-
	9/7/2010	19.03	**0.0295**	0.125	-	-
	9/21/2011	19.48	**0.0259**	0.285	-	-
	9/28/2012	16.31	**0.223**	1.12 J	-	-
	10/8/2013	15.78	**0.852**	7.33	-	-
	9/3/2014	17.35	**0.574**	4.23	-	-
	9/9/2015	20.03	**0.671**	4.35	-	-
	9/29/2016	19.29	**0.0561**	0.46		
	10/12/2017	18.90	**0.370**	3.45	-	-
MW-30	4/4/2005	19.51	**0.0111**	0.0466	-	-
	10/5/2005	17.56	0.00221	0.00654	-	-
	4/14/2006	21.34	0.000563	0.000563	-	-
	9/15/2006	19.60	**0.0162**	0.118	-	-
	5/3/2007	21.41	**0.0496**	0.0496	-	-
	10/8/2007	17.91	**0.00839**	0.0402	-	-
	9/29/2008	18.46	0.000996	0.000996	-	-
	9/23/2009	19.64	0.00104 J	0.00104 J	-	-
	9/8/2010	18.13	ND	ND	-	-
	9/22/2011	18.57	0.000550	0.00213	-	-
	9/28/2012	14.96	ND	ND	-	-
	10/8/2013	14.93	0.00114	0.0185	-	-
	9/4/2014	15.89	0.000340 J	0.000940 J	-	-
	9/9/2015	19.64	**0.0110**	0.0313	-	-
	9/30/2016	19.00	**0.000280 J**	0.00108 J		
	10/12/2017	18.95	**0.00203**	0.0219 J, B	-	-
MW-31A	4/14/2006	26.21	**30.3**	79.7	-	-
	9/15/2006	Could not locate	-	-	-	-
	10/10/2007	24.10	**22.1**	63.4	-	-
	9/30/2008	24.35	**17.7**	34.7	-	-
	9/24/2009	24.91	**14.7**	34.2	-	-
	9/8/2010	24.17	**30.0**	85.2	-	-
	9/21/2011	24.11	Obstructed	-	-	-
	9/28/2012	-	Obstructed	-	-	-
	Decommissioned on 8/23/2013 and replaced with Well MW-34					
MW-31B	4/14/2006	25.20	**0.0058**	0.0210	-	-
	9/15/2006	Could not locate	-	-	-	-
	10/30/2007	22.75	ND	ND	-	-
	9/30/2008	22.99	ND	ND	-	-
	9/24/2009	23.68	ND	ND	-	-
	9/8/2010	23.35	ND	ND	-	-
	9/21/2011	23.20	0.000570	0.00220	-	-
	9/28/2012	20.92	ND	ND	-	-
	10/9/2013	21.42	0.000320 J	0.000710 J	-	-
	9/3/2014	21.18	0.00104	0.00144 J	-	-
	9/9/2015	24.01	0.000190 J	0.00214 J	-	-
	9/29/2016	23.56	0.000230 J	0.000650 J		
	10/12/2017	23.10	ND	ND	-	-

Key Provided on Page 6

TABLE 2 - GROUNDWATER SAMPLING HISTORICAL DATA

			Target Analyte Concentrations (mg/L)			
Well No.	**Sample Date**	**Groundwater Depth^ (feet)**	**Benzene**	**Total BTEX**	**1,2,4-Tri-methylbenzene**	**1,3,5-Tri-methylbenzene**
MW-32	2/10/2005	21.47	**0.510**	2.96	-	-
	4/4/2005	21.70	**0.333**	1.70	-	-
	10/4/2005	19.22	**0.383**	1.54	-	-
	4/14/2006	21.41	**0.194**	0.756	-	-
	9/15/2006	Could not locate	-	-	-	-
	5/4/2007	20.98	ND	ND	-	-
	10/10/2007	19.88	**0.783**	3.89	-	-
	4/28/2008	20.63	ND	ND	-	-
	9/30/2008	17.85	ND	ND	-	-
	9/24/2009	20.60	ND	ND	-	-
	9/7/2010	19.44	0.000730	0.000730	-	-
	9/22/2011	19.98	0.00296	0.00792	-	-
	9/28/2012	17.26	**0.00760**	0.0219 J	-	-
	10/9/2013	17.36	**0.154**	1.37	-	-
	9/3/2014	18.68	**0.279**	2.72	-	-
	9/10/2015	20.69	**0.295**	2.27	-	-
	9/29/2016	18.57	**0.177**	1.87		
	10/13/2017	17.92	**0.166**	1.60	-	-
MW-33	2/10/2005	20.15	0.00385	0.00858	-	-
	4/4/2005	18.67	ND	ND	-	-
	10/4/2005	17.68	ND	ND	-	-
	4/14/2006	18.75	0.00153	0.00832	-	-
	9/18/2006	22.73	ND	ND	-	-
	5/4/2007	18.39	ND	ND	-	-
	10/10/2007	23.73	**1.40**	6.98	-	-
	4/28/2008	17.85	ND	ND	-	-
	9/30/2008	17.16	ND	ND	-	-
	9/24/2009	18.20	ND	0.00282	-	-
	9/7/2010	16.82	ND	ND	-	-
	9/22/2011	17.25	ND	ND	-	-
	9/28/2012	14.63	ND	ND	-	-
	10/9/2013	14.92	0.000160 J	0.000160 J	-	-
	9/3/2014	16.40	ND	ND	-	-
	9/11/2015	18.80	0.000420 J	0.00386 J	-	-
	9/29/2016	17.19	ND	ND		
	10/12/2017	15.91	ND	ND		
MW-34	Replacement of Well MW-31A					
	10/9/2013	21.63	**16.1**	37.9	-	-
	9/3/2014	21.77	**18.4**	42.9	-	-
	9/10/2015	24.53	**19.1**	43.2	-	-
	9/29/2016	23.53	**18.3**	43.1	-	-
	10/11/2017	23.50	Not Sampled - Contained 0.2 foot of product			
MW-35	10/13/2017	18.68	ND	0.000330 J		

KEY	**DESCRIPTION**
-	Sample was either not collected, not analyzed for this parameter, or information was not available
^	Depth of static groundwater level below the measuring point or top of casing
ND	Not detected
mg/L	Milligrams per Liter
0.510	Analyte concentration exceeds current cleanup criterion (0.0046 mg/L benzene, 0.015 mg/L 1,2,4- trimethylbenzene or 0.120mg/L 1,3,5-trimethylbenzene) by 18 AAC 75.345 (October 2017)
J	Concentration is estimated
J+	Concentration is potentially biased high due to surrogate recovery failure
B	Concentration is potentially affected by trip blank detection



LEGEND

MW-18 — Approximate location of Monitoring Well MW-18.

Blue: "Shallow Well" - screened at depths of up to 35 feet

Green: "Intermediate Well" - screened at depths between 35 and 45 feet

Red: "Deep Well" - screened at depths between 50 and 70 feet

Gray: screen spans "shallow", "intermediate", and/or "deep" depths

MWP-2 — Approximate location of former Monitoring Well MWP-2.

B = 18.3
T = 18.9
E = 1.7
X = 4.21 — BTEX concentrations in milligrams per liter (mg/L), October 2017 groundwater sampling event analytical results.

GRO = 4.15 — GRO concentrations in milligrams per liter (mg/L), October 2017 groundwater sampling event analytical results.

ND — Analyte not detected at a concentration greater than the laboratory reporting limit.

NS — Not Sampled

J — Estimated concentration less than the limit of quantitation. See the SGS laboratory report for more details.

J+ — Concentration possibly biased high due to surrogate recovery. See Attachment 1 for more details.

B — Concentration possibly affected by trip blank contamination. See Attachment 1 for more details.

(W) — Approximate location of former water well Decommissioned December 2002.

Monitoring Well	Installation Date	Approximate Screened Interval (feet bgs)*
MW-14	11/22/1999	19-34.5
MW-15	11/22/1999	20-34.8
MW-17	7/12/2000	23.9-33.7
MW-18	7/12/2000	24.7-34.5
MW-20	7/13/2000	20-35
MW-21	7/13/2000	19-35
MW-22	7/14/2000	23-33
MW-23	7/14/2000	23-32.8
MW-26	3/26/2001	9.5-29.7
MW-27	3/27/2001	9.5-29.9
MW-28	3/27/2001	12.9-33.1
MW-29	11/19/2002	20.3-30.3
MW-30	11/19/2002	13.3-28.3
MW-31B	11/19/2002	15.8-25.8
MW-32	2/3/2005	35-45
MW-33	2/3/2005	58-68
MW-34	8/23/2013	35-45
MW-35	9/22/2017	38-48

* At time of well installation

N

0 100 200
APPROXIMATE SCALE IN FEET

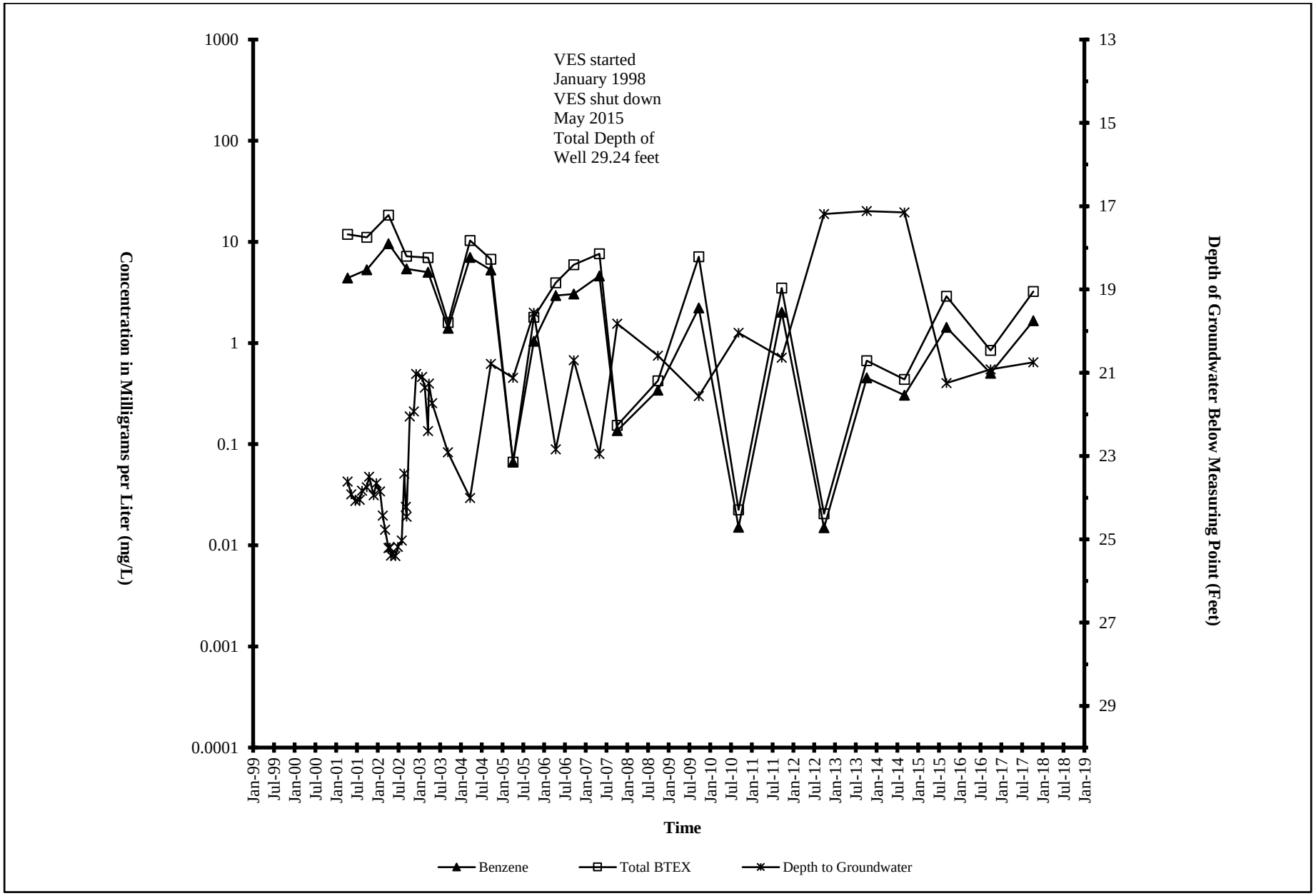
10630 Old Seward Highway
Anchorage, Alaska

SITE PLAN AND OCTOBER 2017 RESULTS

December 2017 32-1-17717-025

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 1


VES started
January 1998
VES shut down
May 2015
Total Depth of
Well 29.24 feet
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
13
15
17
19
21
23
25
27
29
Jan-99
Jul-99
Jan-00
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Jan-01
Jul-01
Jan-02
Jul-02
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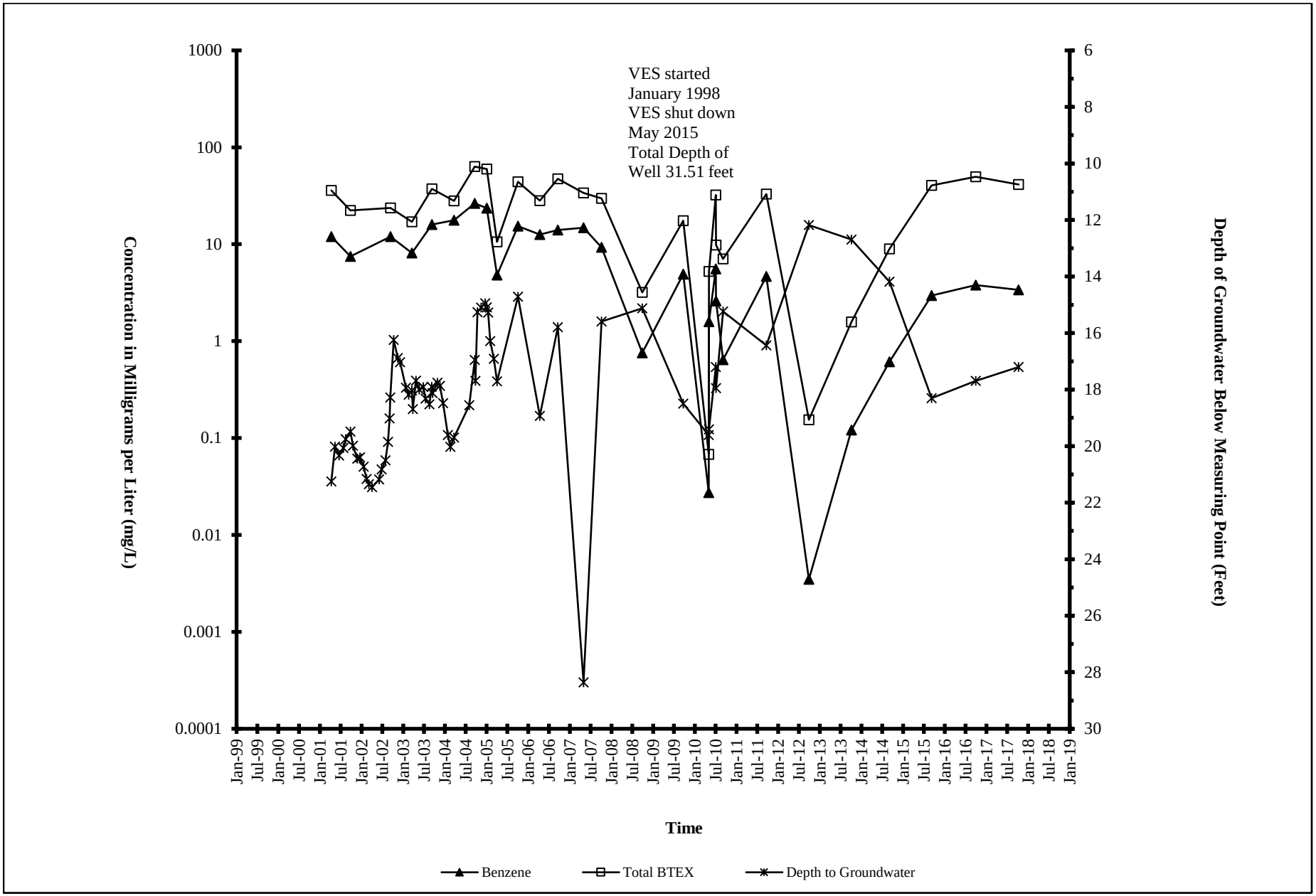
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater


VES started
January 1998
VES shut down
May 2015
Total Depth of
Well 31.51 feet
Concentration in Milligrams per Liter (mg/L)
Depth of Groundwater Below Measuring Point (Feet)
1000
100
10
1
0.1
0.01
0.001
0.0001
6
8
10
12
14
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26
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Jul-14
Jan-15
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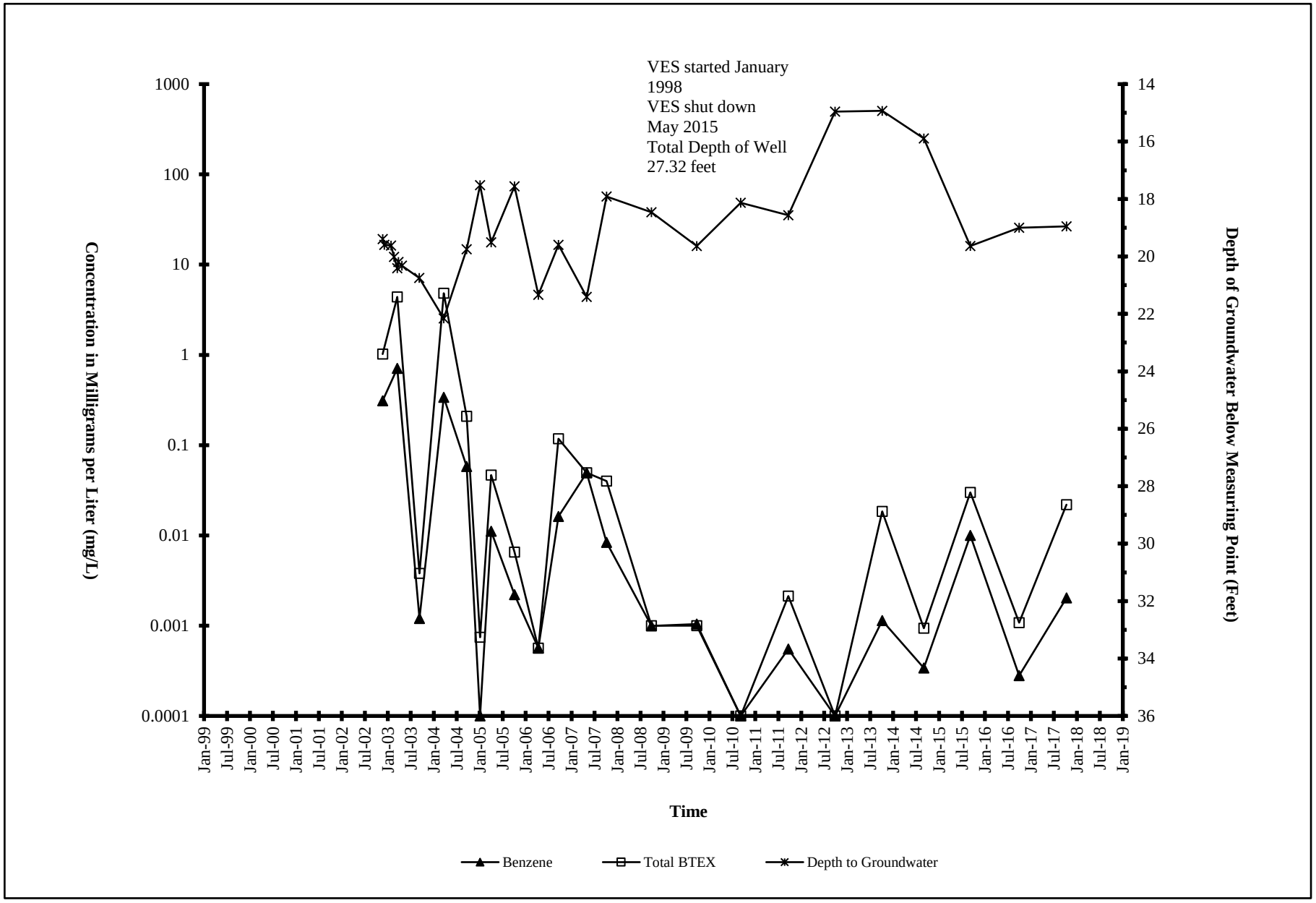
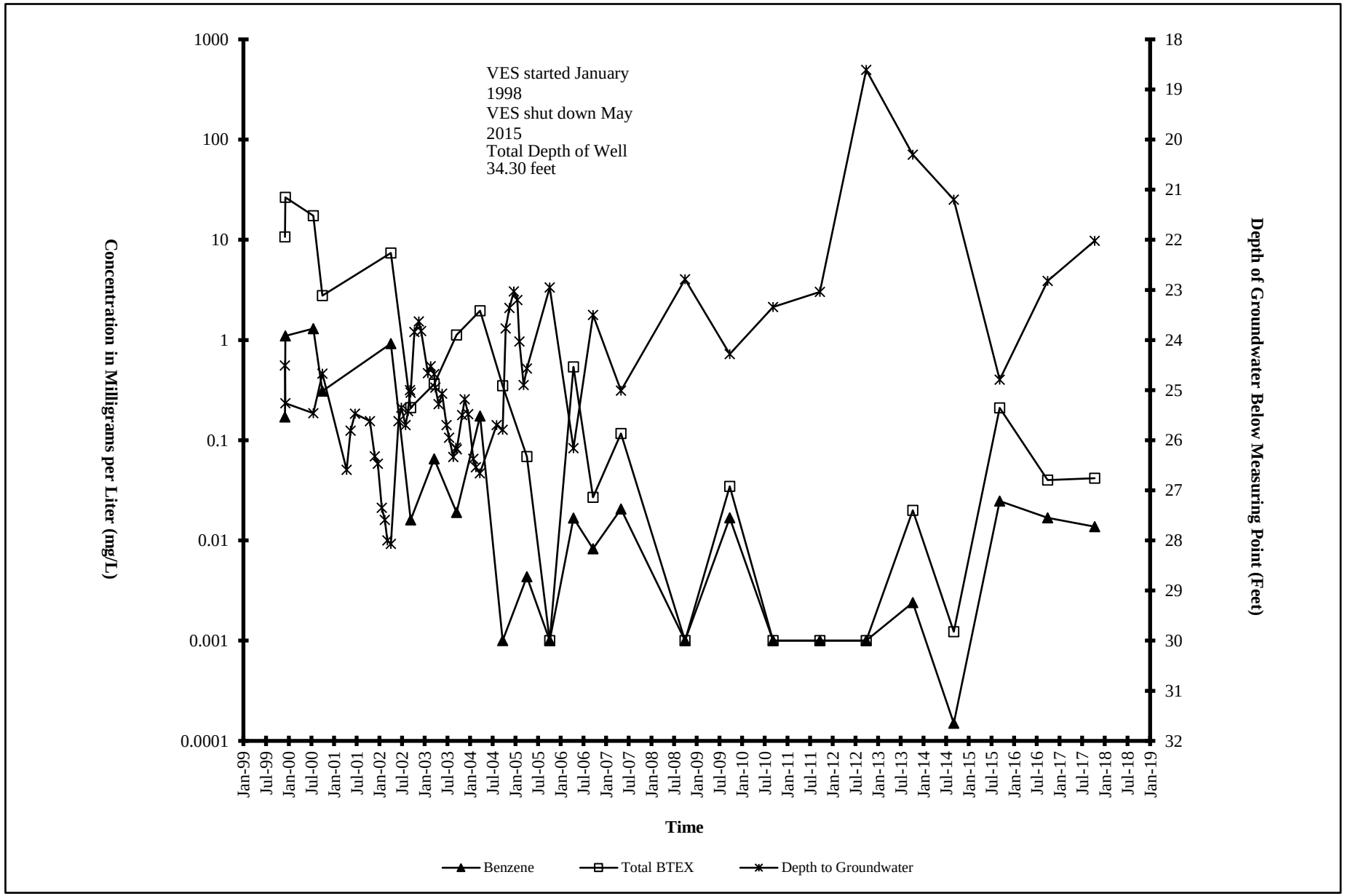
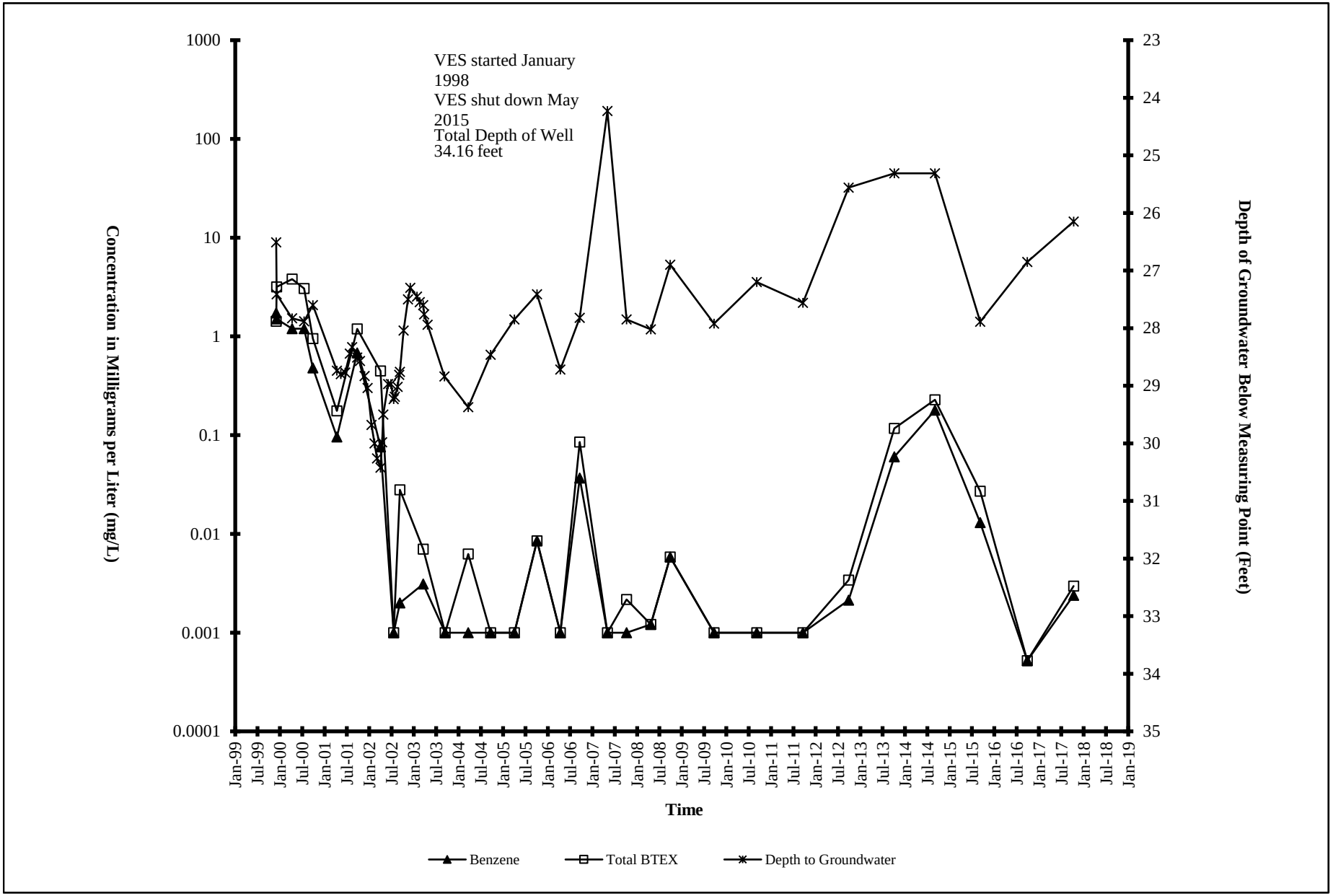
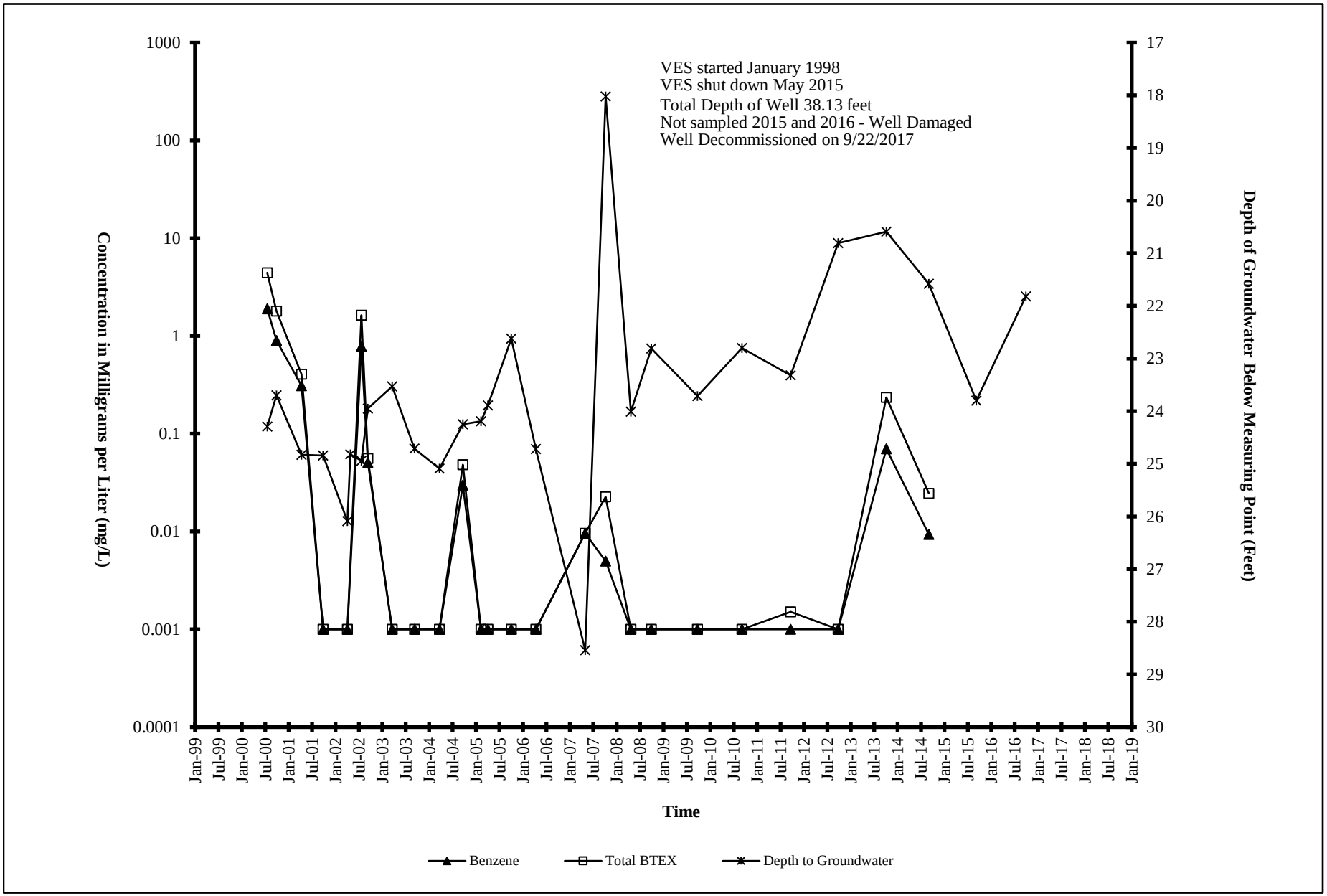
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

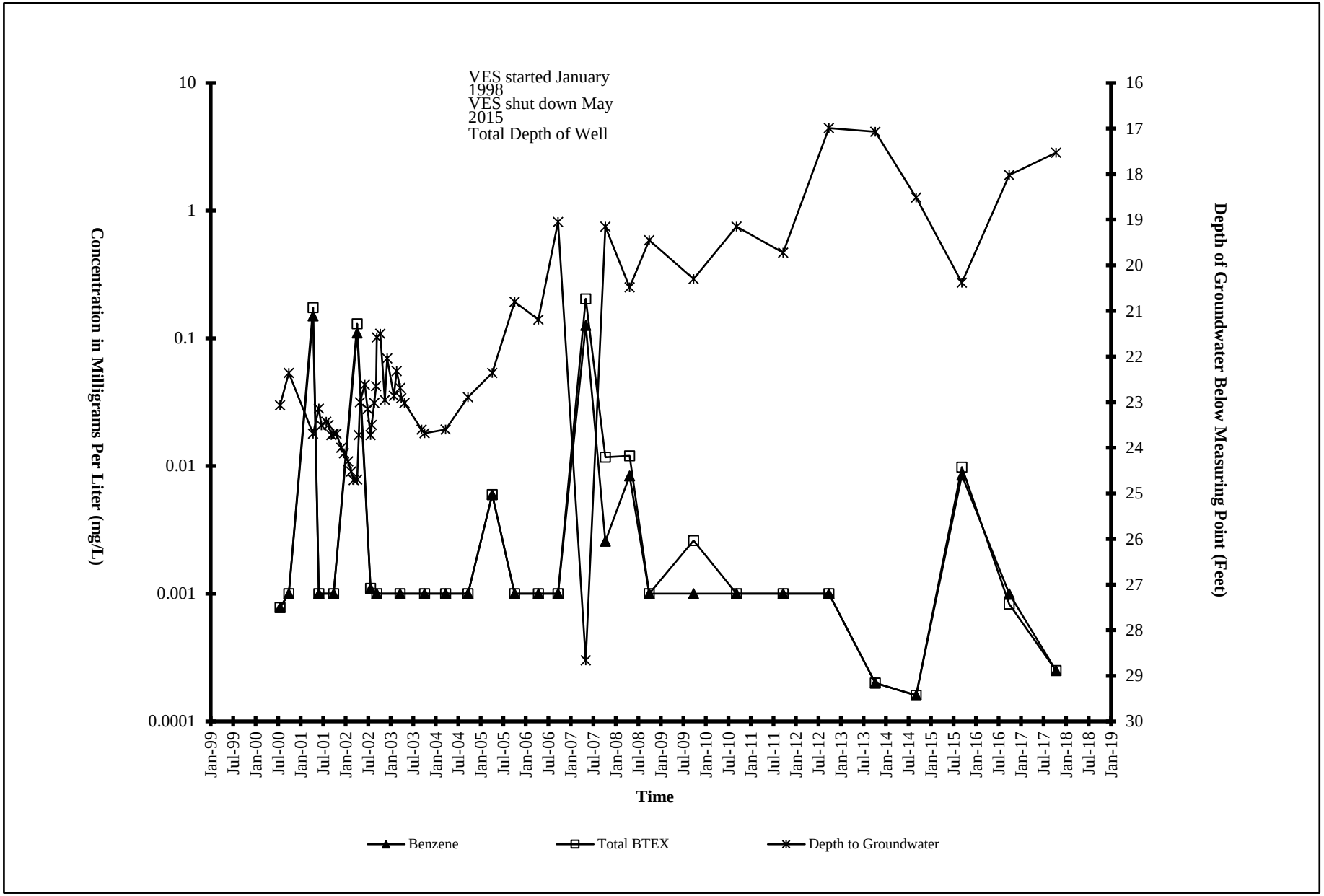

VES started January 1998
VES shut down May 2015
Total Depth of Well 27.32 feet
Concentration in Milligrams per Liter (mg/L)
Depth of Groundwater Below Measuring Point (Feet)
1000
100
10
1
0.1
0.01
0.001
0.0001
14
16
18
20
22
24
26
28
30
32
34
36
Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18 Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

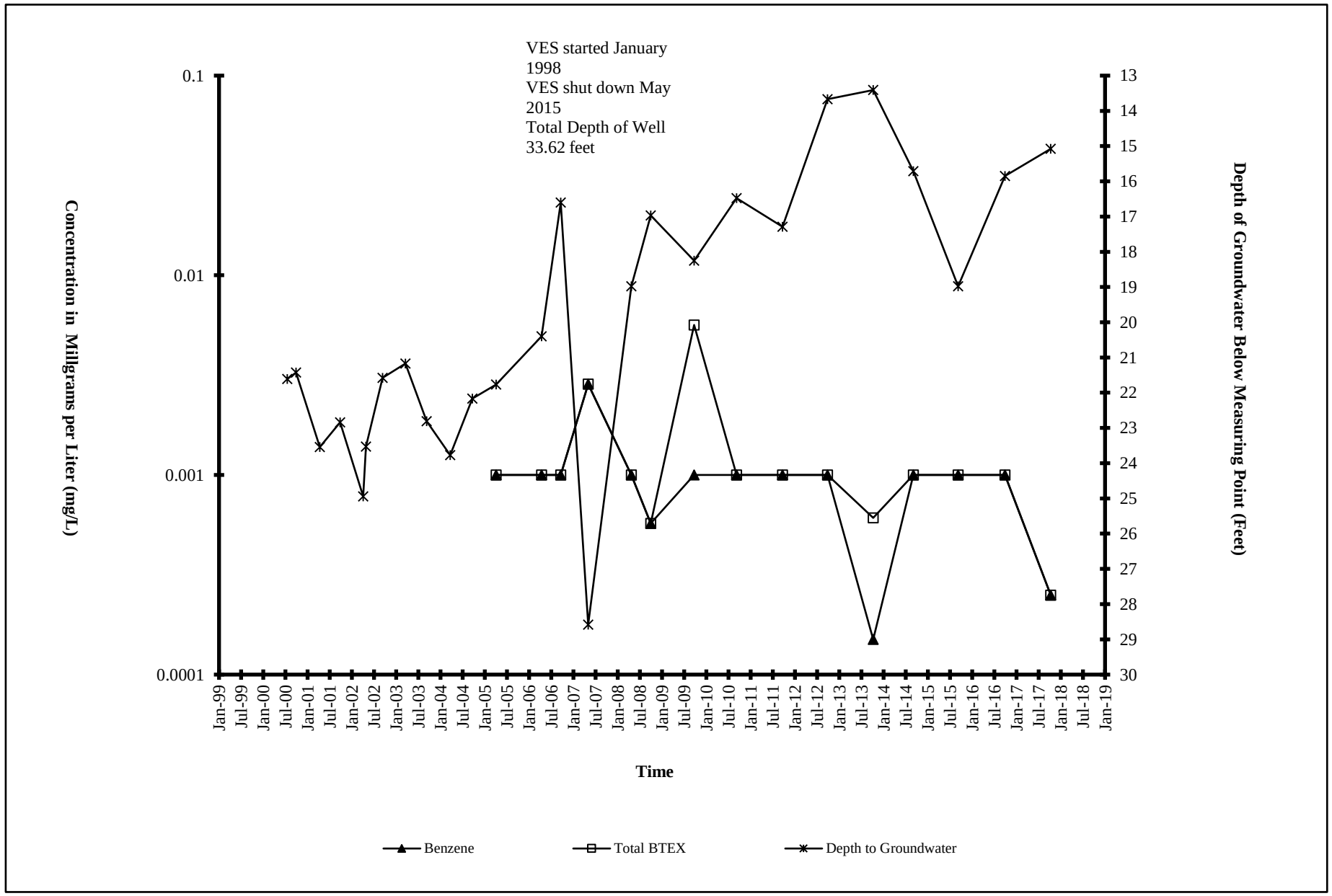
GRAPH 4 - MONITORING WELL MW-14 TRENDS

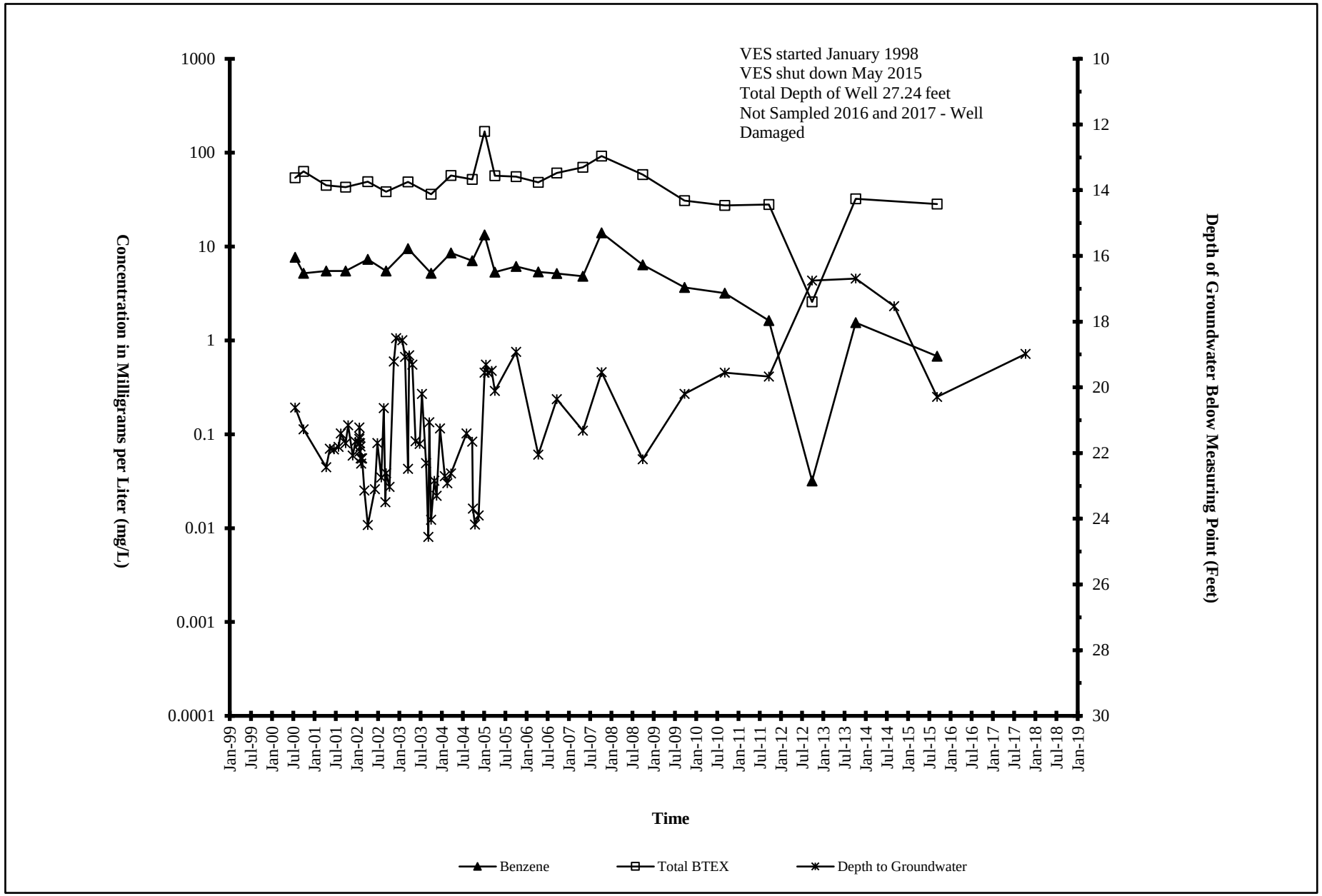


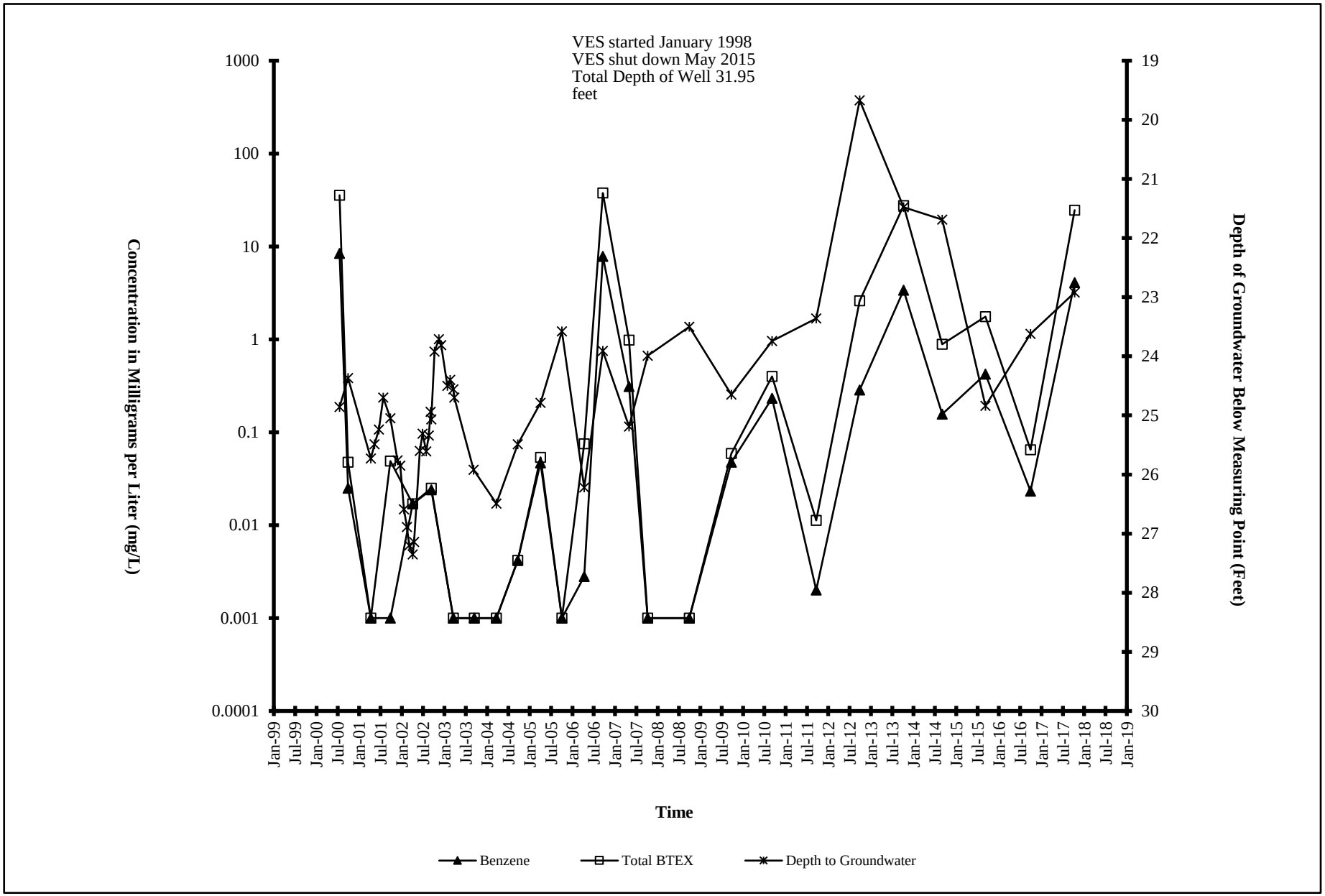

VES started January 1998
VES shut down May 2015
Total Depth of Well 34.16 feet
Concentration in Milligrams per Liter (mg/L)
Depth of Groundwater Below Measuring Point (Feet)
1000
100
10
1
0.1
0.01
0.001
0.0001
23
24
25
26
27
28
29
30
31
32
33
34
35
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

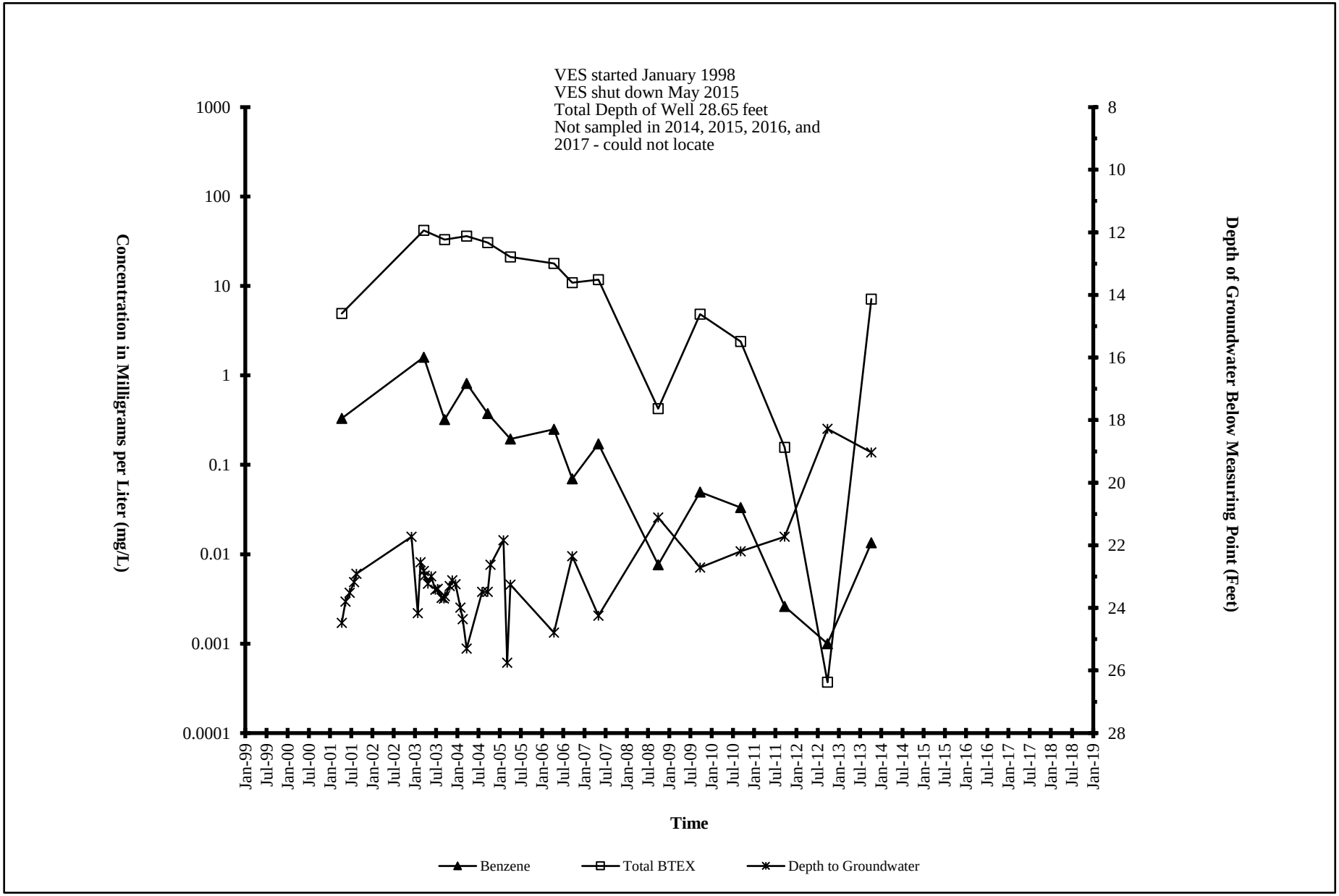

VES started January 1998
VES shut down May 2015
Total Depth of Well 38.13 feet
Not sampled 2015 and 2016 - Well Damaged
Well Decommissioned on 9/22/2017
Concentration in Milligrams per Liter (mg/L)
Depth of Groundwater Below Measuring Point (Feet)
1000
100
10
1
0.1
0.01
0.001
0.0001
17
18
19
20
21
22
23
24
25
26
27
28
29
30
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

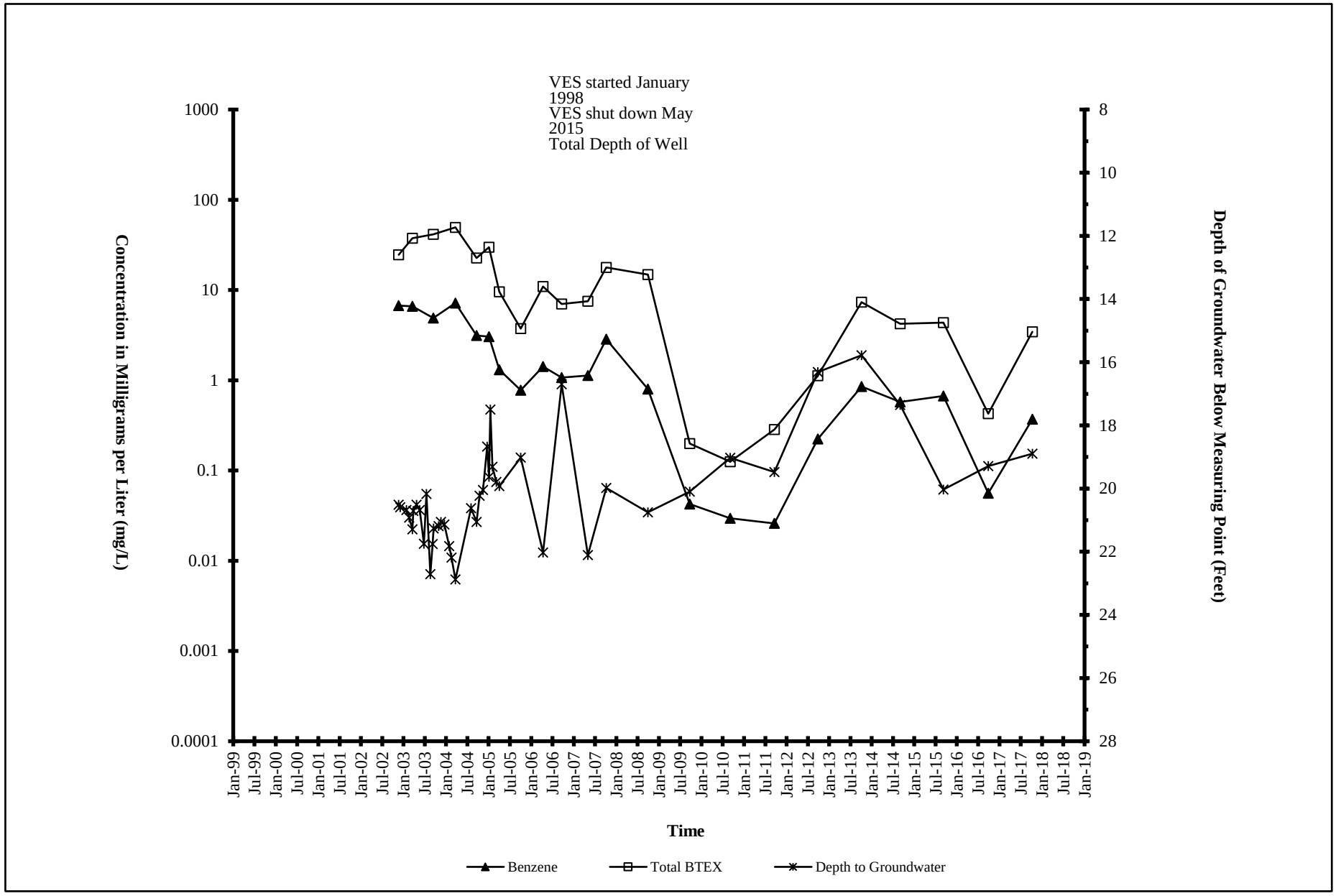

VES started January 1998
VES shut down May 2015
Total Depth of Well
Concentration in Milligrams Per Liter (mg/L)
Depth of Groundwater Below Measuring Point (Feet)
10
1
0.1
0.01
0.001
0.0001
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

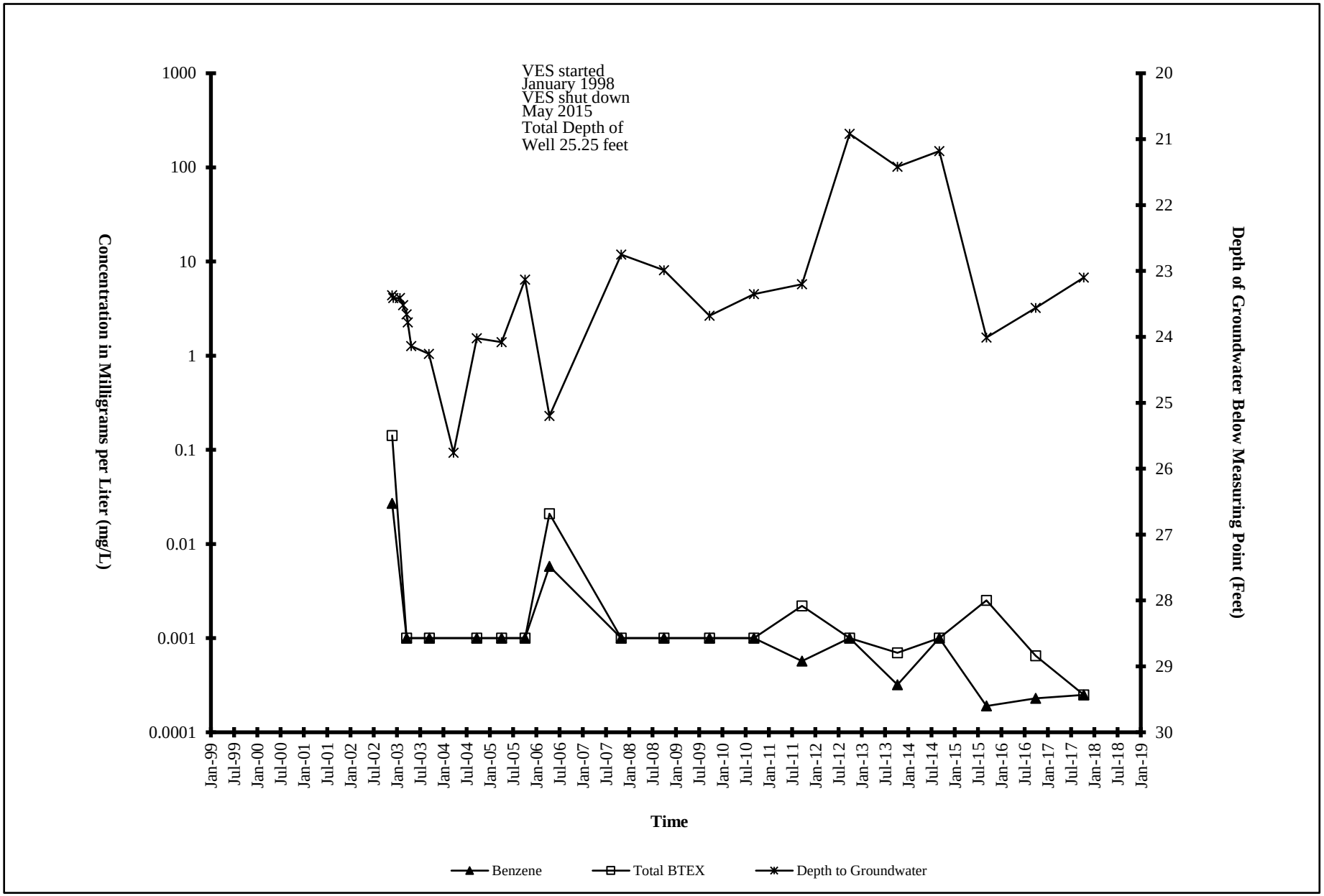

VES started January 1998
VES shut down May 2015
Total Depth of Well 33.62 feet
Concentration in Millgrams per Liter (mg/L)
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

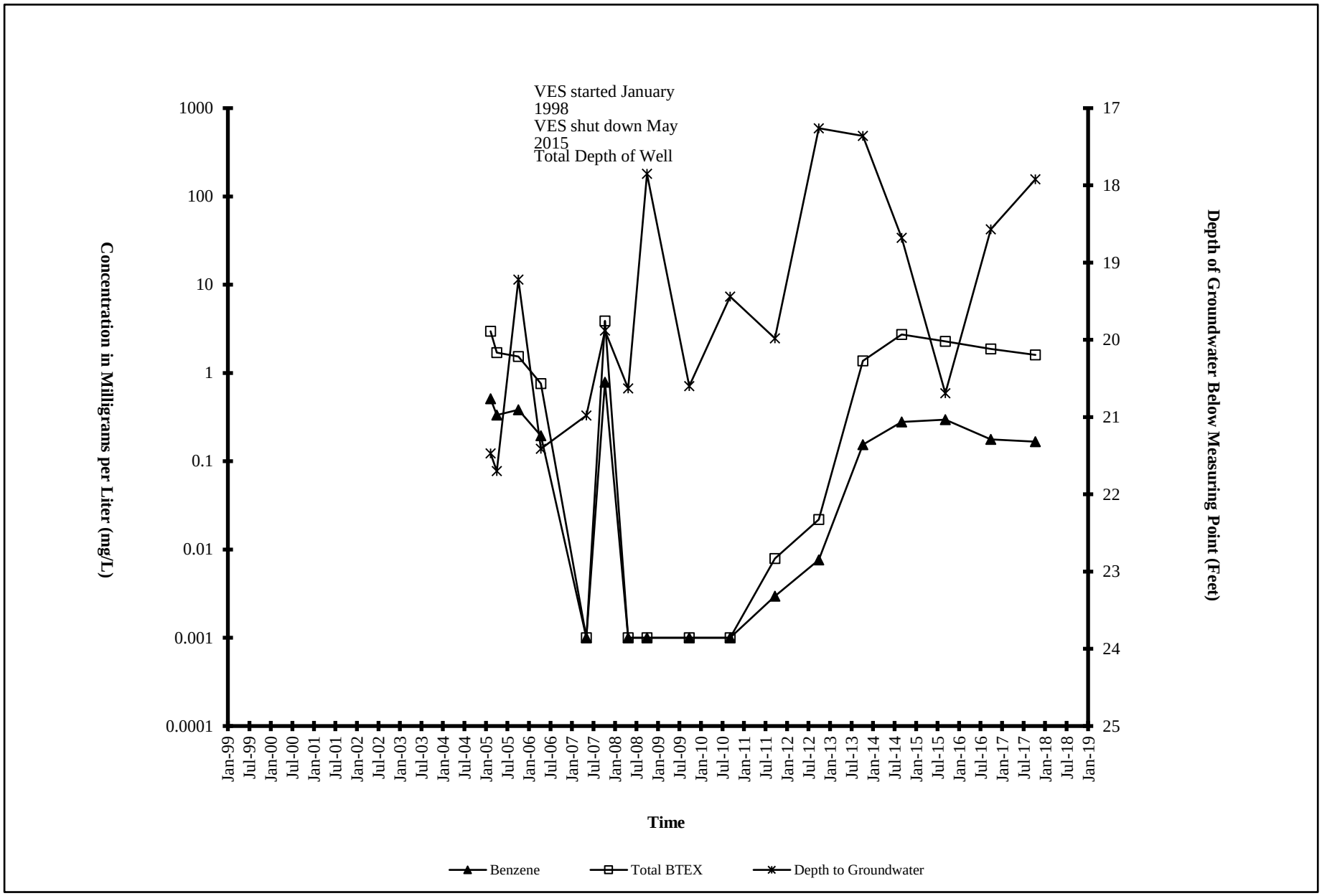

VES started January 1998
VES shut down May 2015
Total Depth of Well 27.24 feet
Not Sampled 2016 and 2017 - Well Damaged
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
10
12
14
16
18
20
22
24
26
28
30
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

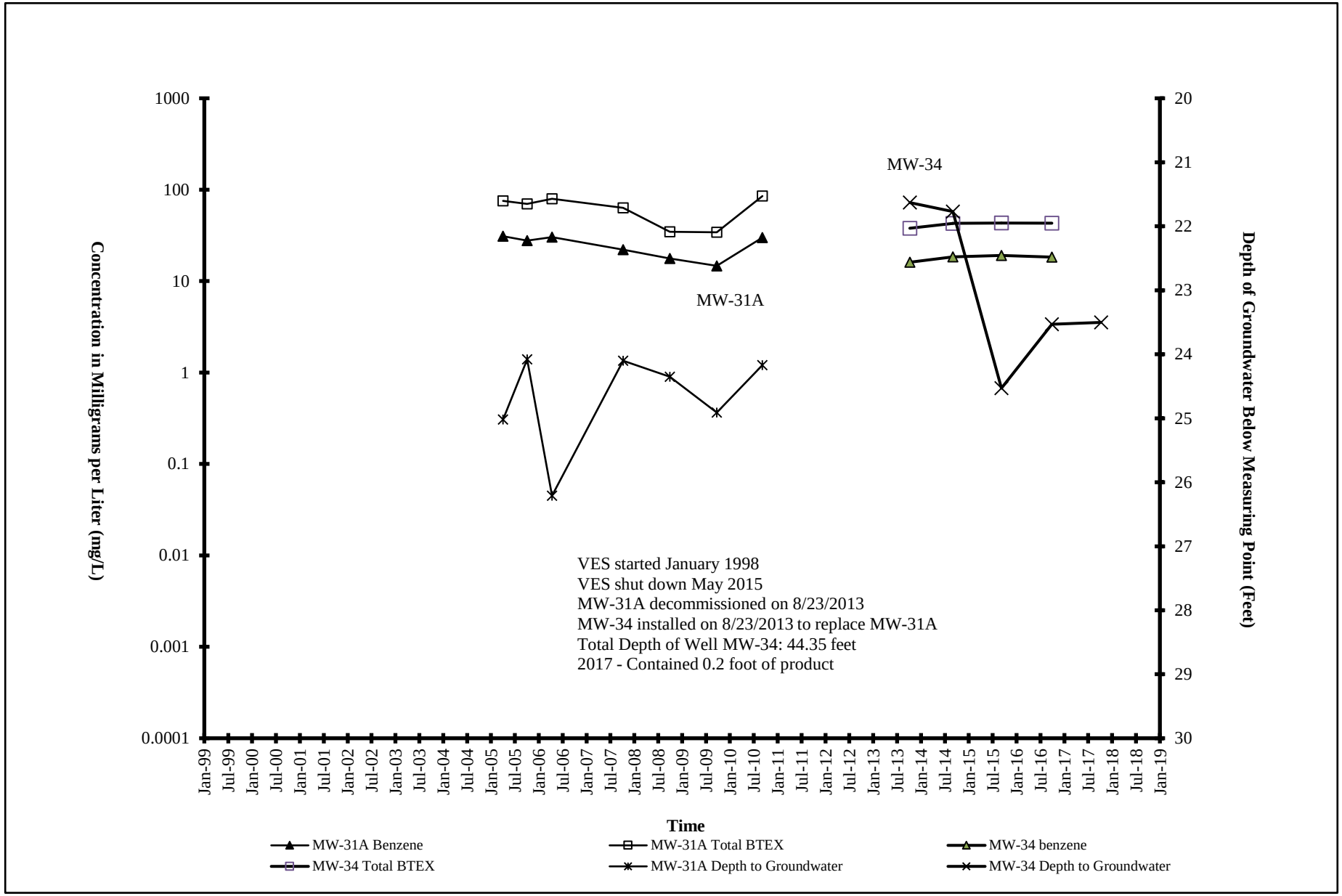

VES started January 1998
VES shut down May 2015
Total Depth of Well 31.95 feet
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
19
20
21
22
23
24
25
26
27
28
29
30
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

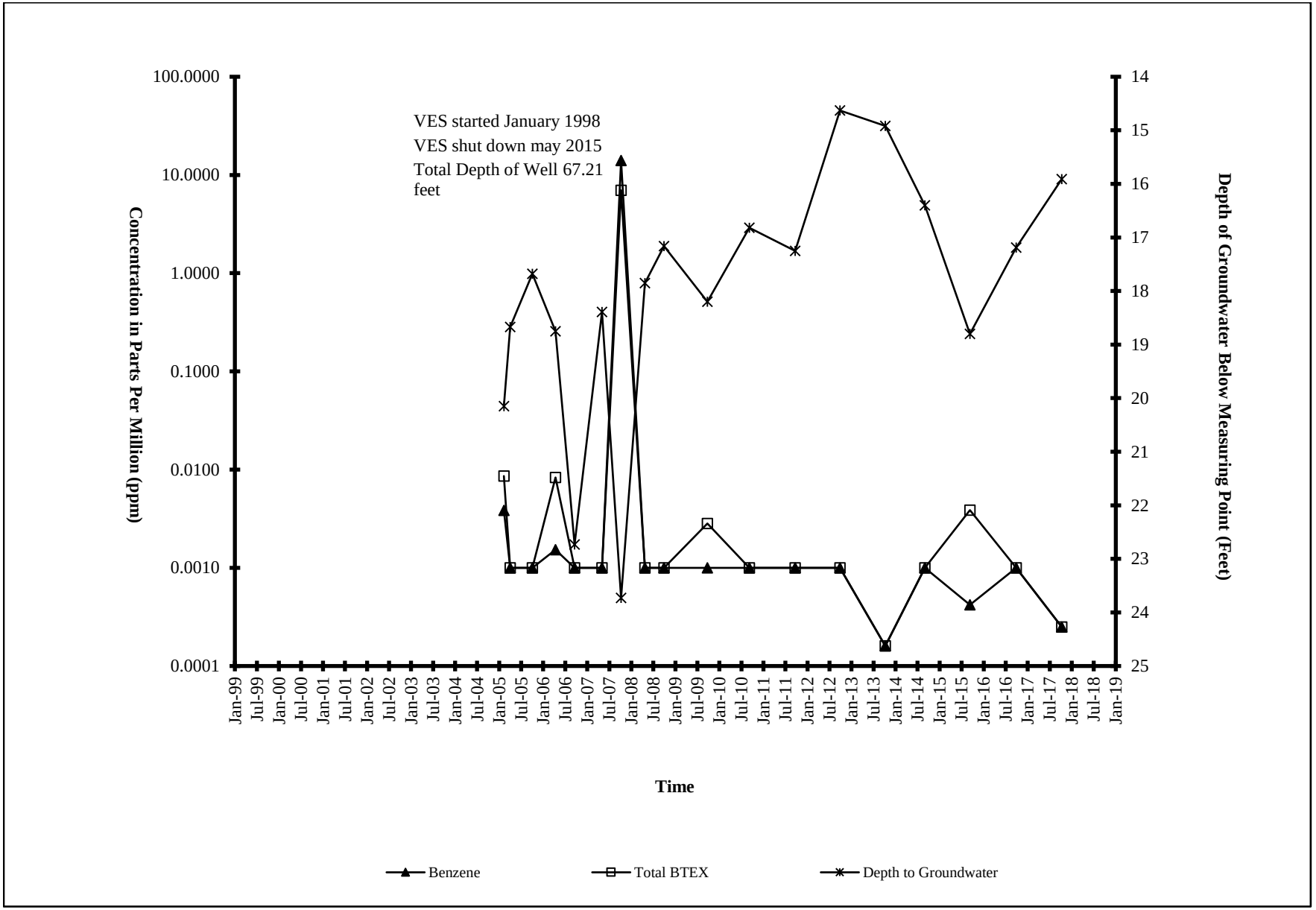

VES started January 1998
VES shut down May 2015
Total Depth of Well 28.65 feet
Not sampled in 2014, 2015, 2016, and 2017 - could not locate
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
8
10
12
14
16
18
20
22
24
26
28
Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18 Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater


VES started January 1998
VES shut down May 2015
Total Depth of Well
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
8
10
12
14
16
18
20
22
24
26
28
Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18 Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater


VES started
January 1998
VES shut down
May 2015
Total Depth of
Well 25.25 feet
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
20
21
22
23
24
25
26
27
28
29
30
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater


VES started January 1998
VES shut down May 2015
Total Depth of Well
Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
17
18
19
20
21
22
23
24
25
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater


Concentration in Milligrams per Liter (mg/L)
1000
100
10
1
0.1
0.01
0.001
0.0001
Depth of Groundwater Below Measuring Point (Feet)
20
21
22
23
24
25
26
27
28
29
30
MW-34
MW-31A
VES started January 1998
VES shut down May 2015
MW-31A decommissioned on 8/23/2013
MW-34 installed on 8/23/2013 to replace MW-31A
Total Depth of Well MW-34: 44.35 feet
2017 - Contained 0.2 foot of product
Jan-99 Jul-99 Jan-00 Jul-00 Jan-01 Jul-01 Jan-02 Jul-02 Jan-03 Jul-03 Jan-04 Jul-04 Jan-05 Jul-05 Jan-06 Jul-06 Jan-07 Jul-07 Jan-08 Jul-08 Jan-09 Jul-09 Jan-10 Jul-10 Jan-11 Jul-11 Jan-12 Jul-12 Jan-13 Jul-13 Jan-14 Jul-14 Jan-15 Jul-15 Jan-16 Jul-16 Jan-17 Jul-17 Jan-18 Jul-18 Jan-19
Time
MW-31A Benzene
MW-31A Total BTEX
MW-34 benzene
MW-34 Total BTEX
MW-31A Depth to Groundwater
MW-34 Depth to Groundwater


VES started January 1998
VES shut down may 2015
Total Depth of Well 67.21 feet
Concentration in Parts Per Million (ppm)
100.0000
10.0000
1.0000
0.1000
0.0100
0.0010
0.0001
Depth of Groundwater Below Measuring Point (Feet)
14
15
16
17
18
19
20
21
22
23
24
25
Jan-99
Jul-99
Jan-00
Jul-00
Jan-01
Jul-01
Jan-02
Jul-02
Jan-03
Jul-03
Jan-04
Jul-04
Jan-05
Jul-05
Jan-06
Jul-06
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15
Jan-16
Jul-16
Jan-17
Jul-17
Jan-18
Jul-18
Jan-19
Time
Benzene
Total BTEX
Depth to Groundwater

ATTACHMENT 1

RESULTS OF ANALYTICAL TESTING

BY SGS NORTH AMERICA, INC

OF ANCHORAGE ALASKA

AND

ADEC LABORATORY DATA REVIEW CHECKLIST

Laboratory Report of Analysis

To: Holiday Alaska, Inc.
5430 Fairbanks St Ste 3
Anchorage, AK 99518
(907)561-2120

Report Number: **1177344**

Client Project: **32-1-17717 Holiday 602**

Dear Dan McMahon,

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 Victoria 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.

Victoria Pennick Date
Project Manager
Victoria.Pennick@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: **Holiday Alaska, Inc.**
SGS Project: **1177344**
Project Name/Site: **32-1-17717 Holiday 602**
Project Contact: **Dan McMahon**

Refer to sample receipt form for information on sample condition.

17717-MW14 (1177344001) PS

8021B - Surrogate recovery for 1,4-difluorobenzene (127 %) does not meet QC criteria due to matrix interference.

*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. 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 (Provisionally Certified as of 10/12/2017) & Microbiology (Provisionally Certified as of 9/21/2017)** & UST-005 (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). 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	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
17717-MW14	1177344001	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW15	1177344002	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW18	1177344003	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW20	1177344004	10/11/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW21	1177344005	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW23	1177344006	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW27	1177344007	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW28	1177344008	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW29	1177344009	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW30	1177344010	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW31B	1177344011	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW32	1177344012	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW33	1177344013	10/12/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW35	1177344014	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-TB	1177344015	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)
17717-MW17	1177344016	10/13/2017	10/13/2017	Water (Surface, Eff., Ground)

Method	Method Description
AK101	AK101/8021 Combo.
SW8021B	AK101/8021 Combo.
SW8021B	BTEX 8021

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Detectable Results Summary

Client Sample ID: **17717-MW14**
Lab Sample ID: 1177344001
Volatile Fuels

Parameter	Result	Units
Benzene	13.7	ug/L
Ethylbenzene	8.46	ug/L
o-Xylene	2.14	ug/L
P & M -Xylene	14.0	ug/L
Toluene	3.54	ug/L

Client Sample ID: **17717-MW15**
Lab Sample ID: 1177344002
Volatile Fuels

Parameter	Result	Units
Benzene	2.38	ug/L
Ethylbenzene	0.580J	ug/L

Client Sample ID: **17717-MW21**
Lab Sample ID: 1177344005
Volatile Fuels

Parameter	Result	Units
Benzene	688	ug/L
Ethylbenzene	0.440J	ug/L

Client Sample ID: **17717-MW23**
Lab Sample ID: 1177344006
Volatile Fuels

Parameter	Result	Units
Benzene	4090	ug/L
Ethylbenzene	2270	ug/L
o-Xylene	2340	ug/L
P & M -Xylene	5230	ug/L
Toluene	10700	ug/L

Client Sample ID: **17717-MW27**
Lab Sample ID: 1177344007
Volatile Fuels

Parameter	Result	Units
Benzene	1660	ug/L
Ethylbenzene	784	ug/L
o-Xylene	19.8	ug/L
P & M -Xylene	690	ug/L
Toluene	70.4	ug/L

Client Sample ID: **17717-MW28**
Lab Sample ID: 1177344008
Volatile Fuels

Parameter	Result	Units
Benzene	3380	ug/L
Ethylbenzene	2510	ug/L
o-Xylene	3520	ug/L
P & M -Xylene	5310	ug/L
Toluene	26700	ug/L

Client Sample ID: **17717-MW29**
Lab Sample ID: 1177344009
Volatile Fuels

Parameter	Result	Units
Benzene	370	ug/L
Ethylbenzene	1010	ug/L
o-Xylene	359	ug/L
P & M -Xylene	1270	ug/L
Toluene	441	ug/L

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Detectable Results Summary

Client Sample ID: **17717-MW30**
Lab Sample ID: 1177344010
Volatile Fuels

Parameter	Result	Units
Benzene	2.03	ug/L
Ethylbenzene	13.9	ug/L
o-Xylene	0.560J	ug/L
P & M -Xylene	5.63	ug/L
Toluene	0.380J	ug/L

Client Sample ID: **17717-MW32**
Lab Sample ID: 1177344012
Volatile Fuels

Parameter	Result	Units
Benzene	166	ug/L
Ethylbenzene	610	ug/L
o-Xylene	130	ug/L
P & M -Xylene	679	ug/L
Toluene	18.5	ug/L

Client Sample ID: **17717-MW35**
Lab Sample ID: 1177344014
Volatile Fuels

Parameter	Result	Units
Toluene	0.330J	ug/L

Client Sample ID: **17717-TB**
Lab Sample ID: 1177344015
Volatile Fuels

Parameter	Result	Units
o-Xylene	0.350J	ug/L

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Results of **17717-MW14**

Client Sample ID: **17717-MW14**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344001
Lab Project ID: 1177344

Collection Date: 10/13/17 09:15
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	13.7		0.500	0.150	ug/L	1		10/17/17 06:25
Ethylbenzene	8.46		1.00	0.310	ug/L	1		10/17/17 06:25
o-Xylene	2.14		1.00	0.310	ug/L	1		10/17/17 06:25
P & M -Xylene	14.0		2.00	0.620	ug/L	1		10/17/17 06:25
Toluene	3.54		1.00	0.310	ug/L	1		10/17/17 06:25
Surrogates								
1,4-Difluorobenzene (surr)	127	*	77-115		%	1		10/17/17 06:25

Batch Information

Analytical Batch: VFC13947
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/17/17 06:25
Container ID: 1177344001-A

Prep Batch: VXX31532
Prep Method: SW5030B
Prep Date/Time: 10/16/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW15**

Client Sample ID: **17717-MW15**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344002
Lab Project ID: 1177344

Collection Date: 10/13/17 13:50
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.38		0.500	0.150	ug/L	1		10/17/17 06:44
Ethylbenzene	0.580	J	1.00	0.310	ug/L	1		10/17/17 06:44
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/17/17 06:44
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/17/17 06:44
Toluene	0.500	U	1.00	0.310	ug/L	1		10/17/17 06:44
Surrogates								
1,4-Difluorobenzene (surr)	92.7		77-115		%	1		10/17/17 06:44

Batch Information

Analytical Batch: VFC13947
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/17/17 06:44
Container ID: 1177344002-A

Prep Batch: VXX31532
Prep Method: SW5030B
Prep Date/Time: 10/16/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW18**

Client Sample ID: **17717-MW18**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344003
Lab Project ID: 1177344

Collection Date: 10/12/17 10:00
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/18/17 01:15
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:15
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:15
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 01:15
Toluene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:15
Surrogates								
1,4-Difluorobenzene (surr)	96.1		77-115		%	1		10/18/17 01:15

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 01:15
Container ID: 1177344003-A

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW20**

Client Sample ID: **17717-MW20**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344004
Lab Project ID: 1177344

Collection Date: 10/11/17 17:10
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/18/17 01:34
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:34
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:34
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 01:34
Toluene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:34
Surrogates								
1,4-Difluorobenzene (surr)	93.3		77-115		%	1		10/18/17 01:34

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 01:34
Container ID: 1177344004-A

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW21**

Client Sample ID: **17717-MW21**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344005
Lab Project ID: 1177344

Collection Date: 10/12/17 17:30
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	688		2.50	0.750	ug/L	5		10/18/17 21:41
Ethylbenzene	0.440	J	1.00	0.310	ug/L	1		10/18/17 01:53
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:53
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 01:53
Toluene	0.500	U	1.00	0.310	ug/L	1		10/18/17 01:53
Surrogates								
1,4-Difluorobenzene (surr)	110		77-115		%	1		10/18/17 01:53

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 01:53
Container ID: 1177344005-A

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 21:41
Container ID: 1177344005-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17717-MW23**

Client Sample ID: **17717-MW23**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344006
Lab Project ID: 1177344

Collection Date: 10/13/17 15:00
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	4090		25.0	7.50	ug/L	50		10/18/17 22:00
Ethylbenzene	2270		50.0	15.5	ug/L	50		10/18/17 22:00
o-Xylene	2340		50.0	15.5	ug/L	50		10/18/17 22:00
P & M -Xylene	5230		100	31.0	ug/L	50		10/18/17 22:00
Toluene	10700		100	31.0	ug/L	100		10/21/17 12:09
Surrogates								
1,4-Difluorobenzene (surr)	104		77-115		%	50		10/18/17 22:00

Batch Information

Analytical Batch: VFC13958
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/21/17 12:09
Container ID: 1177344006-C

Prep Batch: VXX31568
Prep Method: SW5030B
Prep Date/Time: 10/21/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 22:00
Container ID: 1177344006-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/25/2017 8:44:14AM

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Results of **17717-MW27**

Client Sample ID: **17717-MW27**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344007
Lab Project ID: 1177344

Collection Date: 10/12/17 18:00
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1660		5.00	1.50	ug/L	10		10/18/17 22:19
Ethylbenzene	784		10.0	3.10	ug/L	10		10/18/17 22:19
o-Xylene	19.8		10.0	3.10	ug/L	10		10/18/17 22:19
P & M -Xylene	690		20.0	6.20	ug/L	10		10/18/17 22:19
Toluene	70.4		10.0	3.10	ug/L	10		10/18/17 22:19
Surrogates								
1,4-Difluorobenzene (surr)	100		77-115		%	10		10/18/17 22:19

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 22:19
Container ID: 1177344007-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/25/2017 8:44:14AM

J flagging is activated

Results of **17717-MW28**

Client Sample ID: **17717-MW28**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344008
Lab Project ID: 1177344

Collection Date: 10/12/17 14:45
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3380		50.0	15.0	ug/L	100		10/18/17 22:37
Ethylbenzene	2510		100	31.0	ug/L	100		10/18/17 22:37
o-Xylene	3520		100	31.0	ug/L	100		10/18/17 22:37
P & M -Xylene	5310		200	62.0	ug/L	100		10/18/17 22:37
Toluene	26700		200	62.0	ug/L	200		10/23/17 23:25
Surrogates								
1,4-Difluorobenzene (surr)	111		77-115		%	100		10/18/17 22:37

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 22:37
Container ID: 1177344008-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VFC13960
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/23/17 23:25
Container ID: 1177344008-C

Prep Batch: VXX31580
Prep Method: SW5030B
Prep Date/Time: 10/23/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17717-MW29**

Client Sample ID: **17717-MW29**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344009
Lab Project ID: 1177344

Collection Date: 10/12/17 16:10
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	370		2.50	0.750	ug/L	5		10/18/17 22:56
Ethylbenzene	1010		5.00	1.55	ug/L	5		10/18/17 22:56
o-Xylene	359		5.00	1.55	ug/L	5		10/18/17 22:56
P & M -Xylene	1270		10.0	3.10	ug/L	5		10/18/17 22:56
Toluene	441		5.00	1.55	ug/L	5		10/18/17 22:56
Surrogates								
1,4-Difluorobenzene (surr)	100		77-115		%	5		10/18/17 22:56

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 22:56
Container ID: 1177344009-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW30**

Client Sample ID: **17717-MW30**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344010
Lab Project ID: 1177344

Collection Date: 10/12/17 13:40
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	2.03		0.500	0.150	ug/L	1		10/18/17 23:15
Ethylbenzene	13.9		1.00	0.310	ug/L	1		10/18/17 23:15
o-Xylene	0.560 J		1.00	0.310	ug/L	1		10/18/17 23:15
P & M -Xylene	5.63		2.00	0.620	ug/L	1		10/18/17 23:15
Toluene	0.380 J		1.00	0.310	ug/L	1		10/18/17 23:15
Surrogates								
1,4-Difluorobenzene (surr)	96.5		77-115		%	1		10/18/17 23:15

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 23:15
Container ID: 1177344010-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/25/2017 8:44:14AM

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Results of **17717-MW31B**

Client Sample ID: **17717-MW31B**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344011
Lab Project ID: 1177344

Collection Date: 10/12/17 10:55
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/18/17 23:33
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/18/17 23:33
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/18/17 23:33
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 23:33
Toluene	0.500	U	1.00	0.310	ug/L	1		10/18/17 23:33
Surrogates								
1,4-Difluorobenzene (surr)	93.9		77-115		%	1		10/18/17 23:33

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 23:33
Container ID: 1177344011-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW32**

Client Sample ID: **17717-MW32**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344012
Lab Project ID: 1177344

Collection Date: 10/13/17 12:10
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	166		0.500	0.150	ug/L	1		10/18/17 04:04
Ethylbenzene	610		5.00	1.55	ug/L	5		10/18/17 23:52
o-Xylene	130		5.00	1.55	ug/L	5		10/18/17 23:52
P & M -Xylene	679		10.0	3.10	ug/L	5		10/18/17 23:52
Toluene	18.5		1.00	0.310	ug/L	1		10/18/17 04:04
Surrogates								
1,4-Difluorobenzene (surr)	110		77-115		%	1		10/18/17 04:04

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 04:04
Container ID: 1177344012-A

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 23:52
Container ID: 1177344012-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/25/2017 8:44:14AM

J flagging is activated

Results of **17717-MW33**

Client Sample ID: **17717-MW33**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344013
Lab Project ID: 1177344

Collection Date: 10/12/17 12:10
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/19/17 00:11
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/19/17 00:11
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/19/17 00:11
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/19/17 00:11
Toluene	0.500	U	1.00	0.310	ug/L	1		10/19/17 00:11
Surrogates								
1,4-Difluorobenzene (surr)	93.5		77-115		%	1		10/19/17 00:11

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/19/17 00:11
Container ID: 1177344013-B

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **17717-MW35**

Client Sample ID: **17717-MW35**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344014
Lab Project ID: 1177344

Collection Date: 10/13/17 11:00
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		10/18/17 04:41
Surrogates								
4-Bromofluorobenzene (surr)	88.9		50-150		%	1		10/18/17 04:41

Batch Information

Analytical Batch: VFC13948
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 10/18/17 04:41
Container ID: 1177344014-D

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/18/17 04:41
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/18/17 04:41
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/18/17 04:41
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 04:41
Toluene	0.330	J	1.00	0.310	ug/L	1		10/18/17 04:41
Surrogates								
1,4-Difluorobenzene (surr)	92.6		77-115		%	1		10/18/17 04:41

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 04:41
Container ID: 1177344014-D

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17717-TB**

Client Sample ID: **17717-TB**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344015
Lab Project ID: 1177344

Collection Date: 10/13/17 16:00
Received Date: 10/13/17 17:05
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/18/17 00:01
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/18/17 00:01
o-Xylene	0.350	J	1.00	0.310	ug/L	1		10/18/17 00:01
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 00:01
Toluene	0.500	U	1.00	0.310	ug/L	1		10/18/17 00:01
Surrogates								
1,4-Difluorobenzene (surr)	88.9		77-115		%	1		10/18/17 00:01

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 00:01
Container ID: 1177344015-A

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **17717-MW17**

Client Sample ID: **17717-MW17**
Client Project ID: **32-1-17717 Holiday 602**
Lab Sample ID: 1177344016
Lab Project ID: 1177344

Collection Date: 10/13/17 13:00
Received Date: 10/13/17 18:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		10/18/17 05:00
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/18/17 05:00
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/18/17 05:00
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/18/17 05:00
Toluene	0.500	U	1.00	0.310	ug/L	1		10/18/17 05:00
Surrogates								
1,4-Difluorobenzene (surr)	91		77-115		%	1		10/18/17 05:00

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 10/18/17 05:00
Container ID: 1177344016-A

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/17 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/25/2017 8:44:14AM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1770440 [VXX/31532]
Blank Lab ID: 1420720

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1177344001, 1177344002

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
Surrogates				
1,4-Difluorobenzene (surr)	90.5	77-115		%

Batch Information

Analytical Batch: VFC13947
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/16/2017 11:54:00PM

Prep Batch: VXX31532
Prep Method: SW5030B
Prep Date/Time: 10/16/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1177344 [VXX31532]
Blank Spike Lab ID: 1420721
Date Analyzed: 10/16/2017 20:10

Spike Duplicate ID: LCSD for HBN 1177344 [VXX31532]
Spike Duplicate Lab ID: 1420722
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1177344001, 1177344002

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	104	104	100	104	104	(80-120)	0.13	(< 20)
Ethylbenzene	100	106	106	100	105	105	(75-125)	0.75	(< 20)
o-Xylene	100	103	103	100	103	103	(80-120)	0.43	(< 20)
P & M -Xylene	200	209	105	200	209	105	(75-130)	0.01	(< 20)
Toluene	100	106	106	100	106	106	(75-120)	0.23	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	102	102	50	100	100	(77-115)	1.20	

Batch Information

Analytical Batch: **VFC13947**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX31532**
Prep Method: **SW5030B**
Prep Date/Time: **10/16/2017 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1770462 [VXX/31533]
Blank Lab ID: 1420845

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1177344003, 1177344004, 1177344005, 1177344012, 1177344014, 1177344015, 1177344016

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	86.1	50-150		%

Batch Information

Analytical Batch: VFC13948
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 11:05:00PM

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1177344 [VXX31533]
Blank Spike Lab ID: 1420848
Date Analyzed: 10/17/2017 23:23

Spike Duplicate ID: LCSD for HBN 1177344 [VXX31533]
Spike Duplicate Lab ID: 1420849
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1177344003, 1177344004, 1177344005, 1177344012, 1177344014, 1177344015, 1177344016

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.837	84	1.00	0.816	82	(60-120)	2.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	93.5	94	0.0500	93.3	93	(50-150)	0.21	

Batch Information

Analytical Batch: **VFC13948**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX31533**
Prep Method: **SW5030B**
Prep Date/Time: **10/17/2017 08:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1770462 [VXX/31533]
Blank Lab ID: 1420845

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1177344003, 1177344004, 1177344005, 1177344012, 1177344014, 1177344015, 1177344016

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
Surrogates				
1,4-Difluorobenzene (surr)	94.2	77-115		%

Batch Information

Analytical Batch: VFC13948
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/17/2017 11:05:00PM

Prep Batch: VXX31533
Prep Method: SW5030B
Prep Date/Time: 10/17/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1177344 [VXX31533]
Blank Spike Lab ID: 1420846
Date Analyzed: 10/17/2017 23:42

Spike Duplicate ID: LCSD for HBN 1177344 [VXX31533]
Spike Duplicate Lab ID: 1420847
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1177344003, 1177344004, 1177344005, 1177344012, 1177344014, 1177344015, 1177344016

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	101	101	100	103	103	(80-120)	2.40	(< 20)
Ethylbenzene	100	103	103	100	105	105	(75-125)	1.90	(< 20)
o-Xylene	100	101	101	100	103	103	(80-120)	1.90	(< 20)
P & M -Xylene	200	205	102	200	208	104	(75-130)	1.60	(< 20)
Toluene	100	103	103	100	105	105	(75-120)	2.40	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	101	101	50	98.9	99	(77-115)	2.00	

Batch Information

Analytical Batch: **VFC13948**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX31533**
Prep Method: **SW5030B**
Prep Date/Time: **10/17/2017 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1770540 [VXX/31549]
Blank Lab ID: 1421148

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1177344005, 1177344006, 1177344007, 1177344008, 1177344009, 1177344010, 1177344011, 1177344012, 1177344013

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
Surrogates				
1,4-Difluorobenzene (surr)	93.9	77-115		%

Batch Information

Analytical Batch: VFC13952
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/18/2017 9:04:00PM

Prep Batch: VXX31549
Prep Method: SW5030B
Prep Date/Time: 10/18/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1177344 [VXX31549]
Blank Spike Lab ID: 1421149
Date Analyzed: 10/18/2017 17:56

Spike Duplicate ID: LCSD for HBN 1177344 [VXX31549]
Spike Duplicate Lab ID: 1421150
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1177344005, 1177344006, 1177344007, 1177344008, 1177344009, 1177344010, 1177344011, 1177344012, 1177344013

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	106	106	100	108	108	(80-120)	2.00	(< 20)
Ethylbenzene	100	109	109	100	108	108	(75-125)	0.57	(< 20)
o-Xylene	100	107	107	100	106	106	(80-120)	1.20	(< 20)
P & M -Xylene	200	217	108	200	214	107	(75-130)	1.10	(< 20)
Toluene	100	108	108	100	108	108	(75-120)	0.43	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	101	101	50	102	102	(77-115)	0.97	

Batch Information

Analytical Batch: **VFC13952**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX31549**
Prep Method: **SW5030B**
Prep Date/Time: **10/18/2017 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1770662 [VXX/31568]
Blank Lab ID: 1421603

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1177344006

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Toluene	0.500U	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	90.1	77-115		%

Batch Information

Analytical Batch: VFC13958
Analytical Method: SW8021B
Instrument: Agilent 7890 PID/FID
Analyst: ST
Analytical Date/Time: 10/21/2017 10:15:00AM

Prep Batch: VXX31568
Prep Method: SW5030B
Prep Date/Time: 10/21/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1177344 [VXX31568]
Blank Spike Lab ID: 1421604
Date Analyzed: 10/21/2017 10:53

Spike Duplicate ID: LCSD for HBN 1177344 [VXX31568]
Spike Duplicate Lab ID: 1421605
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1177344006

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Toluene	100	92.0	92	100	93.9	94	(75-120)	2.10	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	99.4	99	50	102	102	(77-115)	2.40	

Batch Information

Analytical Batch: **VFC13958**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ST**

Prep Batch: **VXX31568**
Prep Method: **SW5030B**
Prep Date/Time: **10/21/2017 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1770791 [VXX/31580]
Blank Lab ID: 1421902

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1177344008

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
Toluene	0.500U	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	91.7	77-115		%

Batch Information

Analytical Batch: VFC13960
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: ST
Analytical Date/Time: 10/23/2017 10:10:00PM

Prep Batch: VXX31580
Prep Method: SW5030B
Prep Date/Time: 10/23/2017 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1177344 [VXX31580]
Blank Spike Lab ID: 1421903
Date Analyzed: 10/23/2017 18:45

Spike Duplicate ID: LCSD for HBN 1177344 [VXX31580]
Spike Duplicate Lab ID: 1421904
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1177344008

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Toluene	100	105	105	100	106	106	(75-120)	0.72	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	98.7	99	50	100	100	(77-115)	1.50	

Batch Information

Analytical Batch: **VFC13960**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **ST**

Prep Batch: **VXX31580**
Prep Method: **SW5030B**
Prep Date/Time: **10/23/2017 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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1177344

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Geotechnical and Environmental Consultants

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(303) 825-3800

Analysis Parameters/Sample Container Description (include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	~~BTEX~~ EPA 8021	~~GRO~~ AK101					Total Number of Containers	Remarks/Matrix
17717-MW14	① A-C	09:15	10/13/17		X	X						3	Groundwater
-MW15	② A-C	13:50	10/13/17		X	X						3	↓
-MW17	~~③ A-C~~	13:00	10/13/17		X	X						3	
-MW18	~~④~~ A-C ③	10:00	10/12/17		X	X						3	
-MW20	~~⑤~~ A-C ④	17:10	10/11/17		X	X						3	
-MW21	~~⑥~~ A-C ⑤	17:30	10/12/17		X	X						3	
-MW23	~~⑦~~ A-C ⑥	15:00	10/13/17		X	X						3	
-MW27	~~⑧~~ A-C ⑦	18:00	10/12/17		X	X						3	
-MW28	~~⑨~~ A-C ⑧	14:45	10/12/17		X	X						3	
-MW29	~~⑩~~ A-C ⑨	16:10	10/12/17		X	X						3	↓

Project Information	
Project Number:	32-1-17717
Project Name:	Holiday 602
Contact:	ADV, JJK
Ongoing Project?	Yes ☒ No ☐
Sampler:	JJK

AKC 10/13/17

Sample Receipt	
Total Number of Containers	
COC Seals/Intact? Y/N/NA	(NA) Hand
Received Good Cond./Cold	3.0
Delivery Method: (attach shipping bill, if any)	DAR

	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Signature:	[signature] Time: 17:05	Time:	Time:
Printed Name:	Jake Kesler Date: 10/13/17	Date:	Date:
Company:	Shannon + Wilson		

	Received By: 1.	Received By: 2.	Received By: 3.
Signature:	Time:	Time:	Annie Collie Time: 1705
Printed Name:	Date:	Date:	Annie Collie Date: 10/13/17
Company:			SGS

Instructions

Requested Turnaround Time: STANDARD

Special Instructions: Invoice Holiday

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

No. 35306

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Geotechnical and Environmental Consultants

CHAIN-OF-CUSTO

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Laboratory SGS
Attn: Teri

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	BTEX EPA 8021	GRO AK101					Total Number of Containers	Remarks/Matrix
17717-MW30	(11) A-C (10)	13:40	10/12/17		X	X						3	Groundwater
-MW31B	(12) A-C (11)	10:55	10/12/17		X	X						3	
-MW32	~~(13)~~ A-C (12)	12:10	10/13/17		X	X						3	
-MW33	~~(14)~~ A-C (13)	12:10	10/12/17		X	X						3	
-MW35	~~(15)~~ A-C (14) A-F	11:00	10/13/17		X	X	X					6	
-TB ARC 10/13/17	~~(16)~~ A-C (15)	16:00	10/13/17		X	X						1 box	lab supplied trip blank

Project Information	
Project Number:	32-1-17717
Project Name:	Holiday 602
Contact:	ADV, JJK
Ongoing Project?	Yes ☒ No ☐
Sampler:	JJK

Sample Receipt	
Total Number of Containers	
COC Seals/Intact? Y/N/NA	Hard
Received Good Cond./Cold	3.0
Delivery Method:	DAR
(attach shipping bill, if any)	

Instructions	
Requested Turnaround Time:	STANDARD
Special Instructions:	Invoice Holiday

Relinquished By: 1.		Relinquished By: 2.		Relinquished By: 3.	
Signature:	Time: 17:05	Signature:	Time:	Signature:	Time:
Printed Name: Jake Kesler	Date: 10/13/17	Printed Name:	Date:	Printed Name:	Date:
Company: Shannon+Wilson		Company:		Company:	

Received By: 1.		Received By: 2.		Received By: 3.	
Signature:	Time:	Signature:	Time:	Signature: Annie Collie	Time: 1705
Printed Name:	Date:	Printed Name:	Date:	Printed Name: Annie Collie	Date: 10/13/17
Company:		Company:		Company: SGS	

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

F-19-91/UR

No. 35308

e-Sample Receipt Form

SGS Workorder #: **1177344**

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	Hand Delivered
COC accompanied samples?	Yes	
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 @ 3.0 °C Therm. ID: D42
		Cooler ID: @ °C Therm. ID:
		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	
If samples received without a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "**COOLER TEMP**" will be noted to the right. In cases where neither a temp blank nor cooler temp can be obtained, note "ambient" or "chilled".		
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)?	No	Sample "11717-MW-17" was not in original cooler and was hand delivered at 10/13/17 18:00
**Note: If times differ <1hr, record details & login per COC.		
Were analyses requested unambiguous? (i.e., method is specified for analyses with >1 option for analysis)	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
1177344001-A	HCL to pH < 2	OK	1177344014-D	HCL to pH < 2	OK
1177344001-B	HCL to pH < 2	OK	1177344014-E	HCL to pH < 2	OK
1177344001-C	HCL to pH < 2	OK	1177344014-F	HCL to pH < 2	OK
1177344002-A	HCL to pH < 2	OK	1177344015-A	HCL to pH < 2	OK
1177344002-B	HCL to pH < 2	OK	1177344015-B	HCL to pH < 2	OK
1177344002-C	HCL to pH < 2	OK	1177344015-C	HCL to pH < 2	OK
1177344003-A	HCL to pH < 2	OK	1177344016-A	HCL to pH < 2	OK
1177344003-B	HCL to pH < 2	OK	1177344016-B	HCL to pH < 2	OK
1177344003-C	HCL to pH < 2	OK			
1177344004-A	HCL to pH < 2	OK			
1177344004-B	HCL to pH < 2	OK			
1177344004-C	HCL to pH < 2	OK			
1177344005-A	HCL to pH < 2	OK			
1177344005-B	HCL to pH < 2	OK			
1177344005-C	HCL to pH < 2	OK			
1177344006-A	HCL to pH < 2	OK			
1177344006-B	HCL to pH < 2	OK			
1177344006-C	HCL to pH < 2	OK			
1177344007-A	HCL to pH < 2	OK			
1177344007-B	HCL to pH < 2	OK			
1177344007-C	HCL to pH < 2	OK			
1177344008-A	HCL to pH < 2	OK			
1177344008-B	HCL to pH < 2	OK			
1177344008-C	HCL to pH < 2	OK			
1177344009-A	HCL to pH < 2	OK			
1177344009-B	HCL to pH < 2	OK			
1177344009-C	HCL to pH < 2	OK			
1177344010-A	HCL to pH < 2	OK			
1177344010-B	HCL to pH < 2	OK			
1177344010-C	HCL to pH < 2	OK			
1177344011-A	HCL to pH < 2	OK			
1177344011-B	HCL to pH < 2	OK			
1177344011-C	HCL to pH < 2	OK			
1177344012-A	HCL to pH < 2	OK			
1177344012-B	HCL to pH < 2	OK			
1177344012-C	HCL to pH < 2	OK			
1177344013-A	HCL to pH < 2	OK			
1177344013-B	HCL to pH < 2	OK			
1177344013-C	HCL to pH < 2	OK			
1177344014-A	HCL to pH < 2	OK			
1177344014-B	HCL to pH < 2	OK			
1177344014-C	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

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.
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.

LABORATORY DATA REVIEW CHECKLIST

CS Report Name: Holiday Station Store No. 602
10630 Old Seward Highway
Anchorage, Alaska
Date: November 2017
Laboratory Report Date: October 25, 2017

Consultant Firm: Shannon & Wilson, Inc.

Completed by: Jake Kesler
Title: Environmental Scientist
Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1177344
ADEC File Number: *2100.26.018*

(**NOTE**: ***NA*** = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes / No / NA** (please explain)
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 / NA (please explain)

Comments: *Samples were not transferred.*

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?
Yes / No / NA (please explain)
Comments**:**

b. Correct analyses requested? **Yes / No / NA** (please explain)
Comments**:**

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (6° to 0° C)?
Yes / No / NA (please explain)

Comments: *The temperature blank was 3.0° C.*

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)? **Yes / No / NA** (please explain)
Comments:

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)? **Yes / No / NA** (please explain)

Comments:

d. If there were any discrepancies, were they documented? – For example, incorrect sample containers/preservation, sample temperature outside acceptance range, insufficient or missing samples, etc.? **Yes / No / NA** (please explain)

Comments: *Sample MW-17 was not in original cooler and was hand delivered on 10/13/17.*

e. Data quality or usability affected? **Yes / No / NA**

Comments: *Sample MW-17 was accidently left at our office and delivered to the laboratory within 1 hour of the other project samples. Therefore, it is our opinion that this delivery mistake does not affect data quality or usability.*

4. Case Narrative

a. Present and understandable? **Yes / No / NA** (please explain)
Comments:

b. Discrepancies, errors or QC failures identified by the lab? **Yes / No / NA** (please explain)

- Comments: *Sample MW-14 surrogate recovery for 1,4-difluorobenzene (127%) does not meet QC criteria due to matrix interference.*

c. Were corrective actions documented? **Yes / No / NA** (please explain)

Comments: *Corrective actions were not noted.*

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

Comments: *The case narrative does not discuss data quality/usability.*

5. Sample Results

a. Correct analyses performed/reported as requested on COC? **Yes / No / NA** (please explain)
Comments:

b. All applicable holding times met? **Yes / No / NA** (please explain)
Comments:

c. All soils reported on a dry weight basis? **Yes / No / NA** (please explain)

Comments: *No soil samples submitted as part of this project.*

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes / No / NA** (please explain)
Comments:

e. Data quality or usability affected? **NA** Please explain.
Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis, and 20 samples?
Yes / No / NA (please explain)
Comments:

ii. All method blank results less than LOQ? **Yes / No / NA** (please explain)
Comments:

iii. If above LOQ, what samples are affected? ***NA***
Comments:

iv. Do the affected sample(s) have data flags? **Yes/ No / NA** (please explain)
Comments:

If so, are the data flags clearly defined? **Yes / No / NA**
Comments:

v. Data quality or usability affected? Please explain. **NA**
Comments:

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 / NA**
(please explain)
Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes / No / NA** (please explain)
Comments: *No metal/inorganic samples analyzed.*

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA** (please explain)
Comments:

iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%, VOCs 20%; all other analyses see the laboratory QC pages) **Yes / No / NA** (please explain)
Comments:

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

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined? **Yes / No / NA** (please explain)
Comments:

vii. Data quality or usability affected? Please explain. ***NA***
Comments:

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses, field, QC and laboratory samples? **Yes / No / NA** (please explain)
Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes / No / NA** (please explain)

Comments: *The 1,4-difluorobenzene (BTEX surrogate) recovery for sample MW-14 was 127%.*

iii. Do the sample results with failed surrogate recoveries have data flags? **Yes / No / NA** (please explain)

Comments: *Data flags applied by Shannon & Wilson are presented on Table 2 and Figure 1.*

iv. If so, are the data flags clearly defined? **Yes / No / NA** (please explain)

Comments: *The BTEX result for Sample MW-14 are flagged "J+" in the report tables and Figure 1 to indicate potential high bias.*

v. Data quality or usability affected? Please explain. **Yes / No / NA**

Comments: *Although the BTEX results are potentially biased high, the results are consistent with recent results and are considered usable for the purpose of the project.*

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.)

i. One trip blank reported per matrix, analysis, and cooler? (If not, enter explanation below.) **Yes / No / NA** (please explain)
Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? **(**If not, a comment stating why must be entered below.) **Yes / No / NA** (please explain)

Comments: *Only one cooler was used to transport the VOA samples and trip blank.*

iii. All results less than LOQ? **Yes / No / NA** (please explain)

Comments: *Although less than the LOQ an estimate concentration of o-xylenes (0.0185 mg/L) was detected in the trip blank.*

iv. If above LOQ, what samples are affected?

Comments**:** *If both the sample and method blank concentrations are reported at levels less than the LOQ, the sample concentrations are reported as non-detect at the LOQ and "B" flagged. If the reported sample concentration is greater than the LOQ and less than 10x the method blank concentrations, the sample concentration is "B" flagged at the detected sample concentration.*

v. Data quality or usability affected? Please explain.

Comments: *Each of the affected results are less than the applicable cleanup levels therefore, the results are considered useable for the purpose of this report.*

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes / No / NA (please explain)

Comments: *Field duplicates are not collected as part of this ongoing project.*

ii. Submitted blind to the lab? **Yes / No / NA** (please explain)
Comments:

iii. Precision – All relative percent differences (RPDs) less than specified DQOs? (Recommended: 30% for water, 50% for soil) **Yes / No / NA** (please explain)
Comments:

iv. Data quality or usability affected? Please explain. **NA**
Comments:

f. Decontamination or Equipment Blank (if not applicable)
Yes / No / NA (please explain)

Comments: *Equipment blanks are not collected as part of this ongoing project.*

i. All results less than LOQ? **Yes / No / NA** (please explain)
Comments:

ii. If above LOQ, what samples are affected? ***NA***
Comments:

iii. Data quality or usability affected? Please explain. ***NA***
Comments:

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

a. Defined and appropriate? **Yes / No / NA** (please explain)

Comments: L*aboratory-specific qualifiers are defined on page 3 of the laboratory report.*