2017 Annual Groundwater Monitoring Report

A 7 Bettis Pipeline Release
Unit Letter L, Section 14, Township 21 South, Range 37 East
Lea County, New Mexico
NMOCD Nos. 1RP 2186 and 1RP 1540

Prepared for: ETC Field Services LLC

GHD | 6121 Indian School Road Suite 200 Albuquerque New Mexico USA

082150 | 2017 | Report No 3 | March 16 2018

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1. Introduction

1.1 Introduction

This report presents the results of groundwater monitoring during 2017 at the ETC Field Services LLC (ETC) A 7 Bettis Pipeline Release site (Site). The Site is located about two and a half miles north of Eunice, New Mexico on NM Highway 18 and approximately one mile east of NM Highway 18 off of Jones City Road. The Site is regulated by the New Mexico Oil Conservation Division (NMOCD). Fieldwork was conducted by APEX Companies, LLC (APEX) during July and October of 2014 and January and April of 2015. Fieldwork has been performed by GHD Services, Inc. (GHD) since December 2015.

1.2 Background

The A 7 Bettis is a 10 inch (in.) diameter low pressure natural gas pipeline located in Unit letter L, Section 14, Township 21 South, Range 37 East in Lea County, New Mexico. The property at the pipeline release location is owned by Mr. Charlie Bettis of Eunice, New Mexico. Site coordinates are 32.475367° N, 103.142150° W and are shown on Figure 1, Site Location Map.

Southern Union Gas Services, Ltd. discovered and verbally notified NMOCD that a section of 10 in. low pressure natural gas pipeline had failed on August 22, 2007. The failure resulted in the release of a mixture of crude oil, produced water, and natural gas. A recent rain shower had contributed an unknown amount of stormwater to the release volume. The “Release Notification and Corrective Action” (Form C 141) indicated a release of approximately 200 barrels of fluid, of which 130 bbls of fluid were recovered via vacuum truck. An estimated 81 million cubic feet (MCF) of natural gas was also released into the atmosphere as a result of the release.

NMOCD Form C 141 (1RP 1540) was submitted and approved by the NMOCD Hobbs District Office on August 31, 2007. On March 24, 2009, the initial Form C 141 was resubmitted and again approved by the NMOCD Hobbs District Office and assigned the NMOCD reference #1RP 2186.

Horizontal delineation of the impacted area was conducted with the collection and analysis of 10 surface soil samples on February 26, 2009. Between March 12, 2009 and July 10, 2009 approximately 2550 cubic yards of impacted soil was excavated, stockpiled onsite, and properly disposed. The dimensions of the excavation were approximately 45 feet (ft) wide, 60 ft long, and up to 44 ft in depth. Additional impacted soil remained in place that could not be removed due to safety considerations (Table 1).

The NMOCD requested a minimum of five soil borings advanced around the perimeter of the excavation in October 2010. Five borings (SB-1 through SB-5) were advanced during October 2012 to assess the lateral and vertical extent of the soil impacts. Soil borings SB-1, SB-4, and SB-5 were converted into 2 inch (2”) monitoring wells MW-1, MW-2, and MW-3, respectively, to assess impacts to groundwater.

Initial laboratory results indicated that with the exception of MW-1, the concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) were below the laboratory method detection limits. TDS

concentrations ranged from 777 mg/L to 2,620 mg/L in the samples collected from MW-3 and MW-1, respectively. Chloride concentrations ranged from 103 mg/L to 1,060 mg/L for the samples collected from MW-3 and MW-1, respectively.

The excavation was partially backfilled and compacted with clean imported soil to 15 ft below ground surface (bgs) on November 7, 2012. A 20 millimeter polyethylene liner was installed over the backfilled soil to minimize the vertical migration of contaminants left in situ. The remainder of the excavation was backfilled, compacted and brought back to grade.

Basin Environmental Services Technologies, LLC (Basin) installed monitoring wells MW-4, MW-5, MW-6, and MW-7 on August 28, 2013 to delineate groundwater impacts (see Figure 2). Select soil samples were submitted for laboratory analysis of total petroleum hydrocarbons (TPH) and chlorides. The bottom sample collected from each borehole was submitted for laboratory analysis of BTEX in conjunction with TPH and chlorides. All of the samples submitted for laboratory analysis were below the NMOCD Recommended Remedial Action Limits (RRAL) for the Site.

Monitoring wells MW-8 and MW-9 appear to have been installed sometime during late 2014 or early 2015, presumably by Apex. Apex collected groundwater samples from Site wells on July 30, 2014, October 31, 2014, January 21, 2015, and April 21, 2015.

GHD assumed consulting responsibilities for the Site in August 2015. GHD installed monitoring wells MW-10 and MW-11 on December 14 and 15th, 2015 and conducted a groundwater monitoring event on December 21, 2015.

Since that time, semi-annual groundwater monitoring has been performed at the site. In 2017, GHD performed semi-annual groundwater monitoring on May 9 and November 15, 2017. This report details the groundwater monitoring activities conducted at the Site during 2017.

2. Groundwater Monitoring Summary, Methodology, and Analytical Results

2.1 Groundwater Monitoring Summary

On the above referenced dates, groundwater elevation measurements were recorded from Site monitoring wells. Groundwater elevations for the Site are presented in Table 1.

Groundwater flow direction is towards the southeast and is consistent with historical Site data. The groundwater gradient was calculated for each monitoring period. The groundwater gradient was 0.0022 ft/ft (May) and 0.0024 ft/ft (November). Groundwater elevation potentiometric surface maps for each monitoring period are included as Figure 3 and Figure 4.

2.2 Groundwater Monitoring Methodology

Monitoring wells MW-1, MW-2, and MWs 6 through 11 were sampled during both 2017 groundwater monitoring events. Monitor wells MW-3, MW-4, and MW-5 were sampled only in November. During the groundwater monitoring events conducted by GHD, monitoring wells were purged of at least three casing volumes of water using a dedicated, polyethylene, disposable bailer prior to sampling.

Groundwater quality parameters including pH, temperature, oxidation reduction potential, total dissolved solids, and conductivity were collected using a decontaminated and calibrated multi parameter groundwater quality meter and were recorded on GHD groundwater sampling field forms. A summary of groundwater parameters is included as Table 2.

In order to enhance aerobic biodegradation of hydrocarbons in the groundwater, GHD installed O-Sox™ in monitoring wells MW-1, MW-6, MW-7, MW-8, and MW-9 on July 19, 2016. O-Sox™ are replaceable socks that can be placed in wells to deliver EHC-O, a proprietary compound that contains a long term source of dissolved oxygen and nutrients, into the groundwater. During the May groundwater sampling event it was discovered that the material in the O-Sox™ had become lodged in between the holder and the monitor well. This made it difficult to remove the O-Sox™ and there was a concern that they may become permanently lodged in the wells. As a result, the use of O-Sox™ was discontinued at the site.

Groundwater samples were placed in laboratory prepared bottles, packed on ice, and delivered under chain of custody to Hall Environmental Analysis Laboratory located in Albuquerque, New Mexico. The samples were analyzed for BTEX by EPA Method 8260 and Chlorides by EPA Method 300.0.

Groundwater collected from monitoring wells MW-2, MW-3, MW-4, and MW-5 have been below NMWQCC standards since sampling began. The 2017 laboratory analytical results indicated that groundwater samples collected from monitoring wells MW-1, MW-6, MW-8, MW-9, MW-10, and MW-11 contained benzene and/or chloride concentrations above the NMWQCC Groundwater Quality Standards.

Groundwater collected from MW-1, MW-6, and MW-10 has consistently exceeded the NMWQCC standard for chlorides. During the most recent sampling event (November 2017) the concentration of chloride in Site wells ranged from 35 in MW-9 and MW-11 to 1,200 mg/L in MW-6. The NMWQCC standard for chloride is 250 mg/L. A concentration map depicting chloride concentrations for 2017 is included as Figure 5.

Groundwater collected from MW-1, MW-6, MW-8, and MW-9 has consistently exceeded the NMWQCC standard for benzene. During the most recent sampling event (November 2017), groundwater collected from Site wells contained concentrations of benzene from below laboratory detection limits to 0.029 mg/L in MW-9. The NMWQCC standard for benzene in groundwater is 0.01 mg/L. A concentration map depicting benzene concentrations for 2017 is included as Figure 6.

A summary of the historical groundwater laboratory analytical results is presented in Table 3. Corresponding laboratory analytical reports from 2017 monitoring are included as Appendix A.

3. Conclusions and Recommendations

3.1 Conclusions

Based on the above information, GHD makes the following conclusions:

- Groundwater samples collected from monitoring wells MW-2, MW-3, MW-4, and MW-5 have been below NMWQCC standards since sampling began.
- Groundwater collected from MW-1, MW-6, and MW-10 exceed the NMWQCC standard for chlorides. The two furthest wells located southeast of the release point (MW-9 and MW-11) had chloride concentrations below the NMWQCC regulatory limits. This data indicates that the chloride plume may be sufficiently delineated towards the southeast.
- Groundwater collected from MW-10 has exceeded the NMWQCC standard for chloride since the initial sampling performed in December 2015. This well is located to the west and cross-gradient of the apparent chloride plume which may indicate a secondary release to the northwest of the site.
- Groundwater collected from MW-1, MW-6, MW-8, MW-9 and MW-11 exceeded the NMWQCC standard for benzene in at least one 2017 sampling event.
- O-Sox™ were installed in MW-1, MW-6, MW-7, MW-8, and MW-9 on July 19, 2016, and were replaced on December 9, 2016. However, due to the possibility that the O-Sox™ may become lodged in the well, they were not replaced in 2017.

3.2 Recommendations

Due to the above conclusions, GHD recommends:

- Continue sampling monitoring wells MW-1, MW-2, MW-6, MW-7, MW-8, MW-9, MW-10, and MW-11 on a semi-annual basis.
- Monitoring wells MW-3, MW-4, and MW-5 will be sampled on an annual basis and will coincide with the second semi-annual event. These wells have never exceeded the NMWQCC standard for target constituents.
- Recommend that the NMOCD contact pipeline companies that operate the pipelines to the northwest of the Site to inquire if any have had a release.

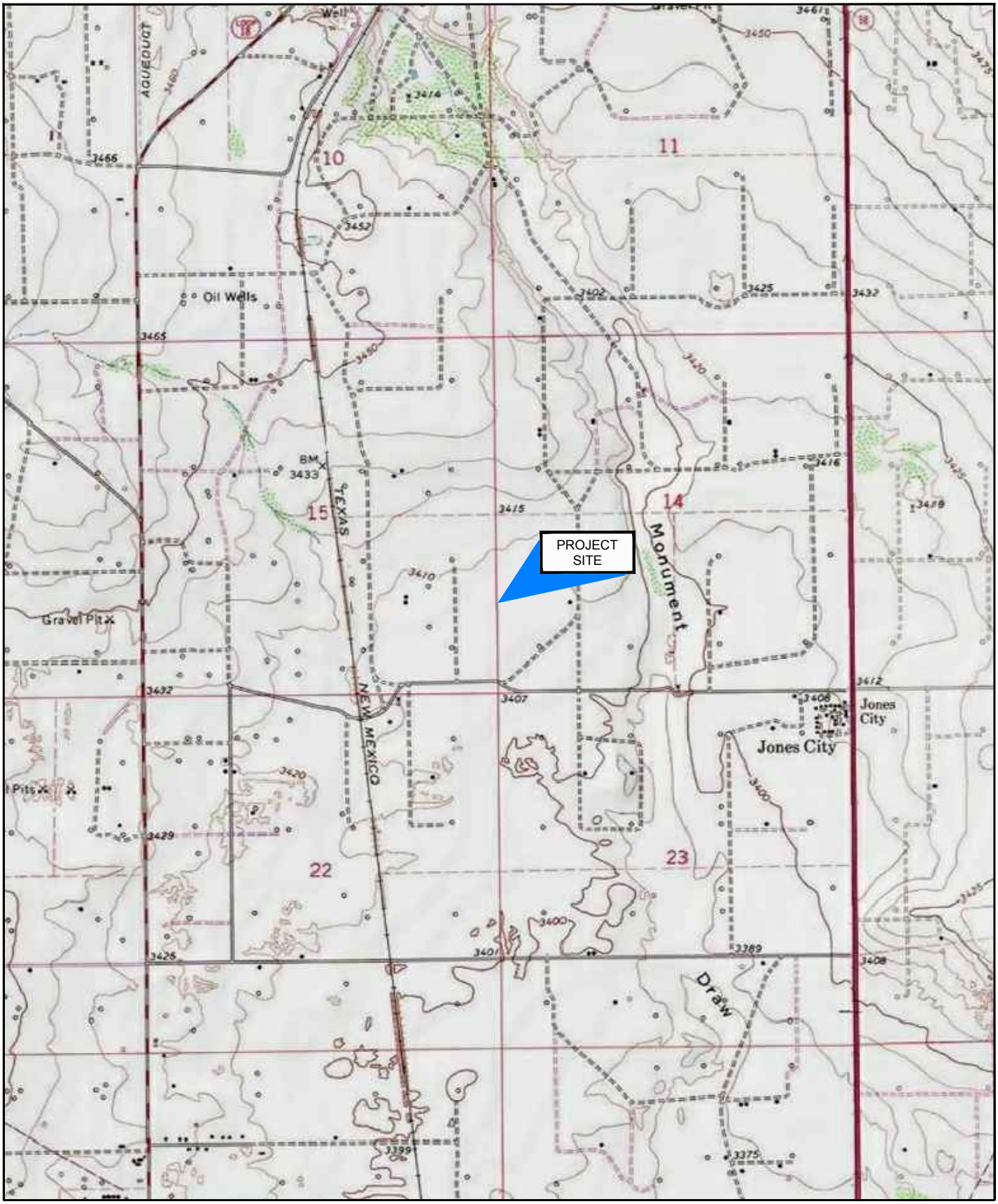
All of Which is Respectfully Submitted,

GHD

Michael Gant
Project Scientist

Bernard Bockisch
Albuquerque Operations Manager

Figures



Source: USGS 7.5 Minute Quad "Eunice and Eunice NE, New Mexico"

Lat/Long: 32.47536° North, 103.14215° West

0 1000 2000ft

Coordinate System:
NAD 83 (2011) State Plane-
New Mexico East (US Feet)

ETC FIELD SERVICES LLC
LEA COUNTY, NEW MEXICO
A-7 BETTIS PIPELINE

082150-2017

Feb 28, 2018

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\08----\082---\082150-Energy Transfer- A-7 Bettis\082150-2017\082150-2017(003)GN-DL001.dwg

Source: NAIP Imagery, New Mexico 2014

Lat/Long: 32.47536° North, 103.14215° West

0 20 60ft

Coordinate System:
NAD 83 (2011) State Plane-
New Mexico East (US Feet)

ETC FIELD SERVICES LLC
LEA COUNTY, NEW MEXICO
A-7 BETTIS PIPELINE

SITE PLAN

082150-2017
Feb 28, 2018

FIGURE 2

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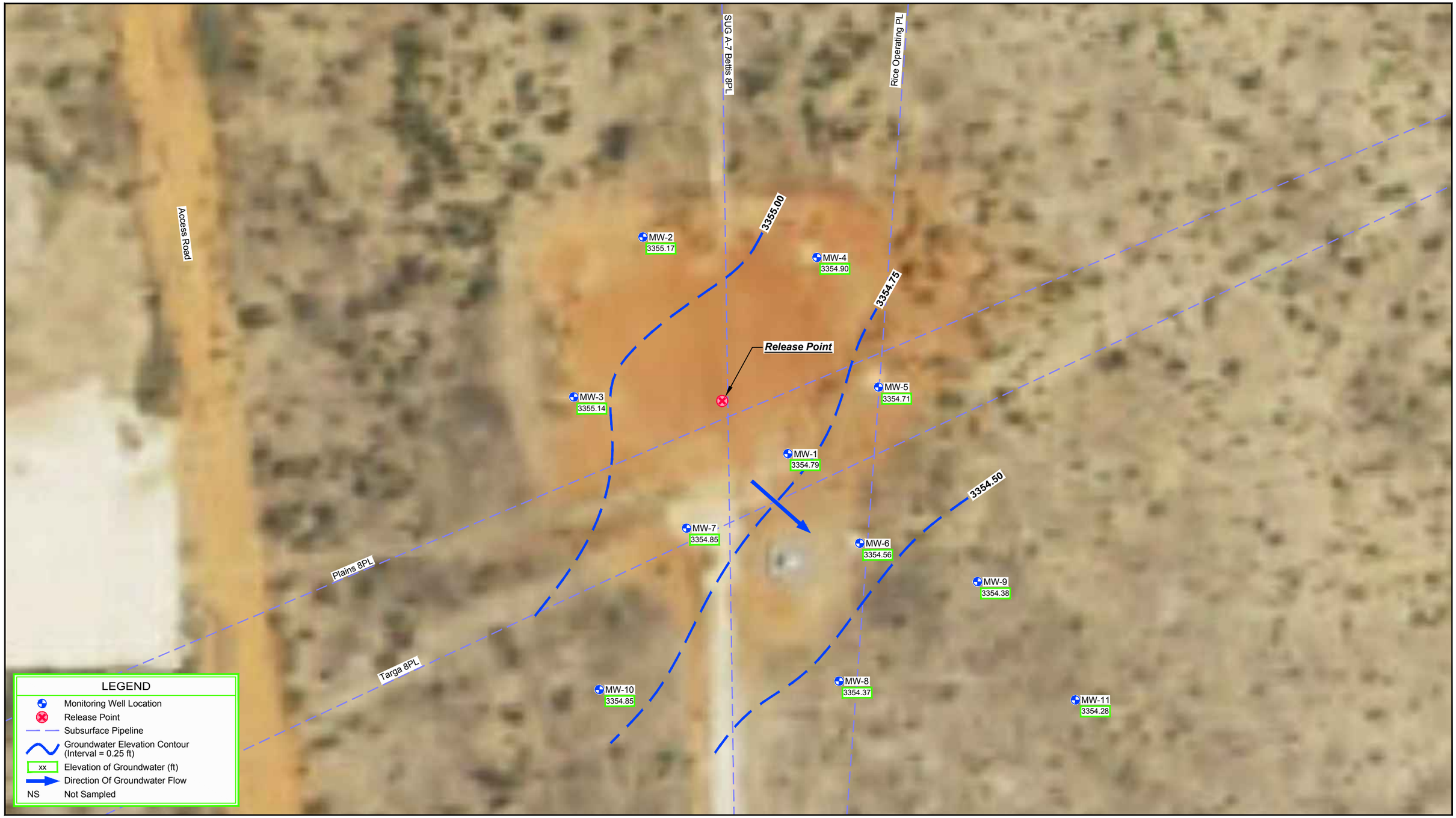

Source: NAIP Imagery, New Mexico 2014

Lat/Long: 32.47536° North, 103.14215° West

0 20 60ft

Coordinate System:
NAD 83 (2011) State Plane-
New Mexico East (US Feet)

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LEA COUNTY, NEW MEXICO
A-7 BETTIS PIPELINE

082150-2017
Feb 28, 2018

GROUNDWATER GRADIENT MAP - MAY 2017

FIGURE 3

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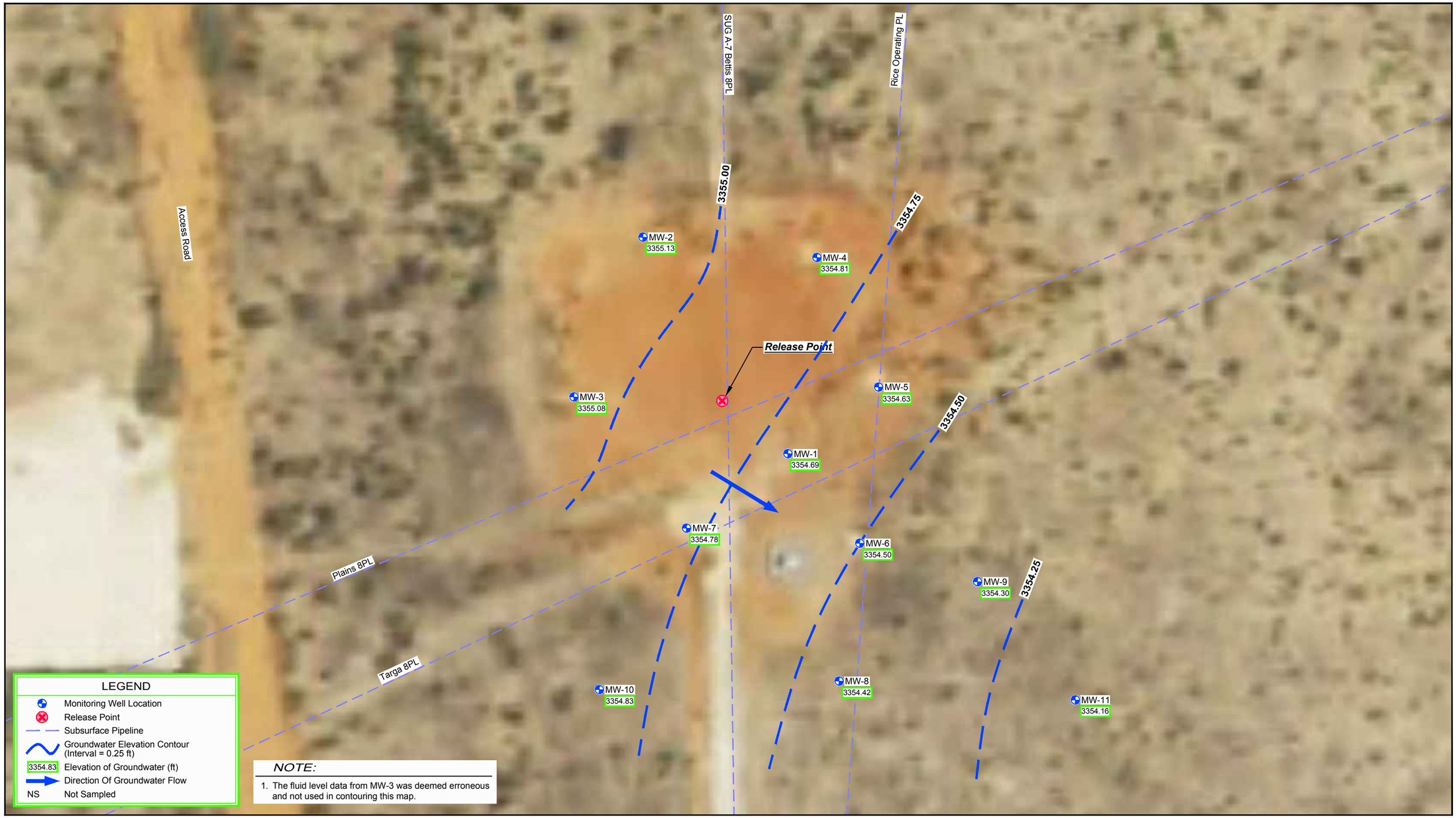

Source: NAIP Imagery, New Mexico 2014

Lat/Long: 32.47536° North, 103.14215° West

0 20 60ft

Coordinate System:
NAD 83 (2011) State Plane-
New Mexico East (US Feet)

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LEA COUNTY, NEW MEXICO
A-7 BETTIS PIPELINE

082150-2017

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GROUNDWATER GRADIENT MAP - NOVEMBER 2017

FIGURE 4

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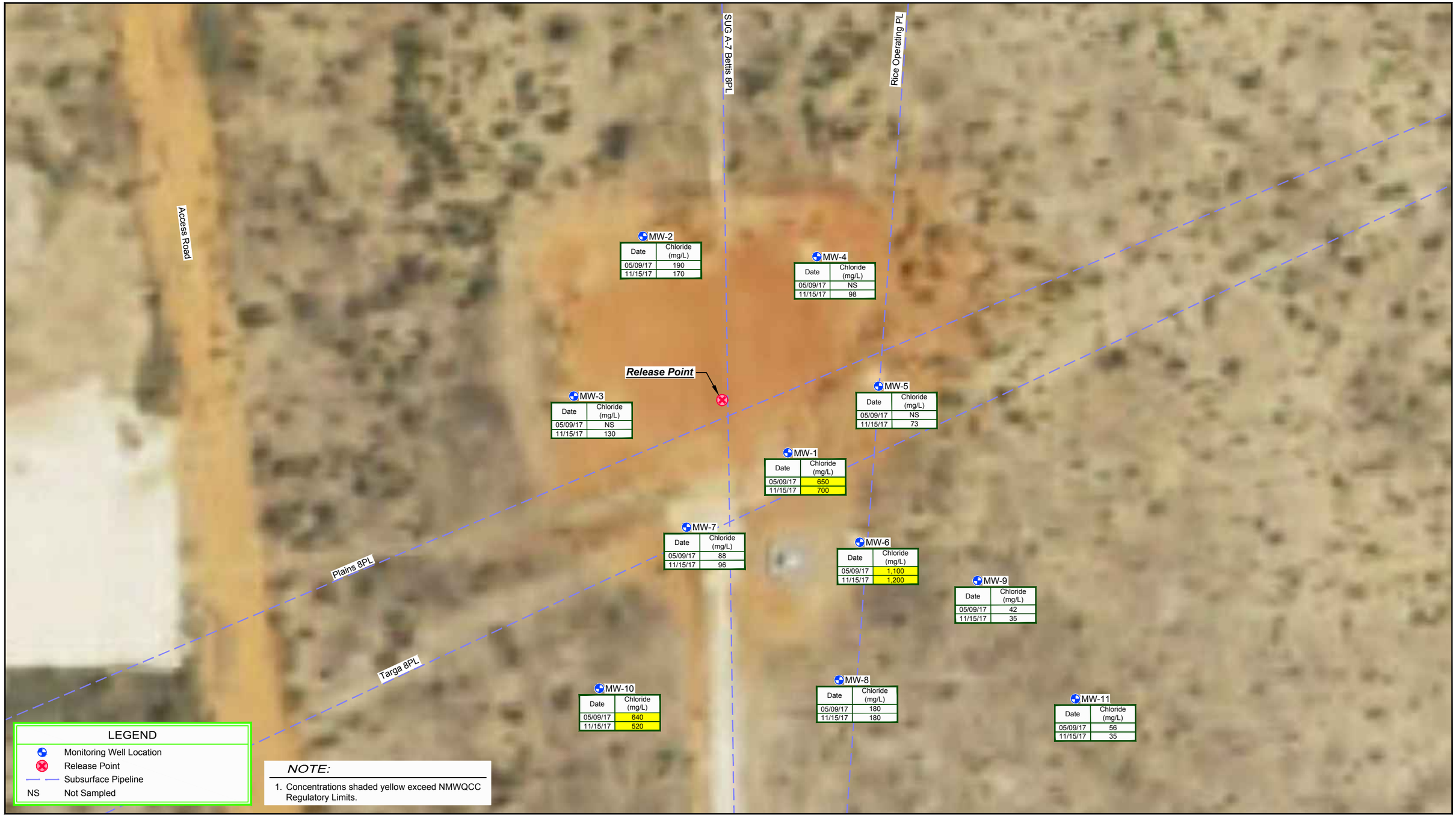

Source: NAIP Imagery, New Mexico 2014

Lat/Long: 32.47536° North, 103.14215° West

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Coordinate System:
NAD 83 (2011) State Plane-
New Mexico East (US Feet)

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A-7 BETTIS PIPELINE

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CHLORIDE IN GROUNDWATER MAP - 2017

FIGURE 5

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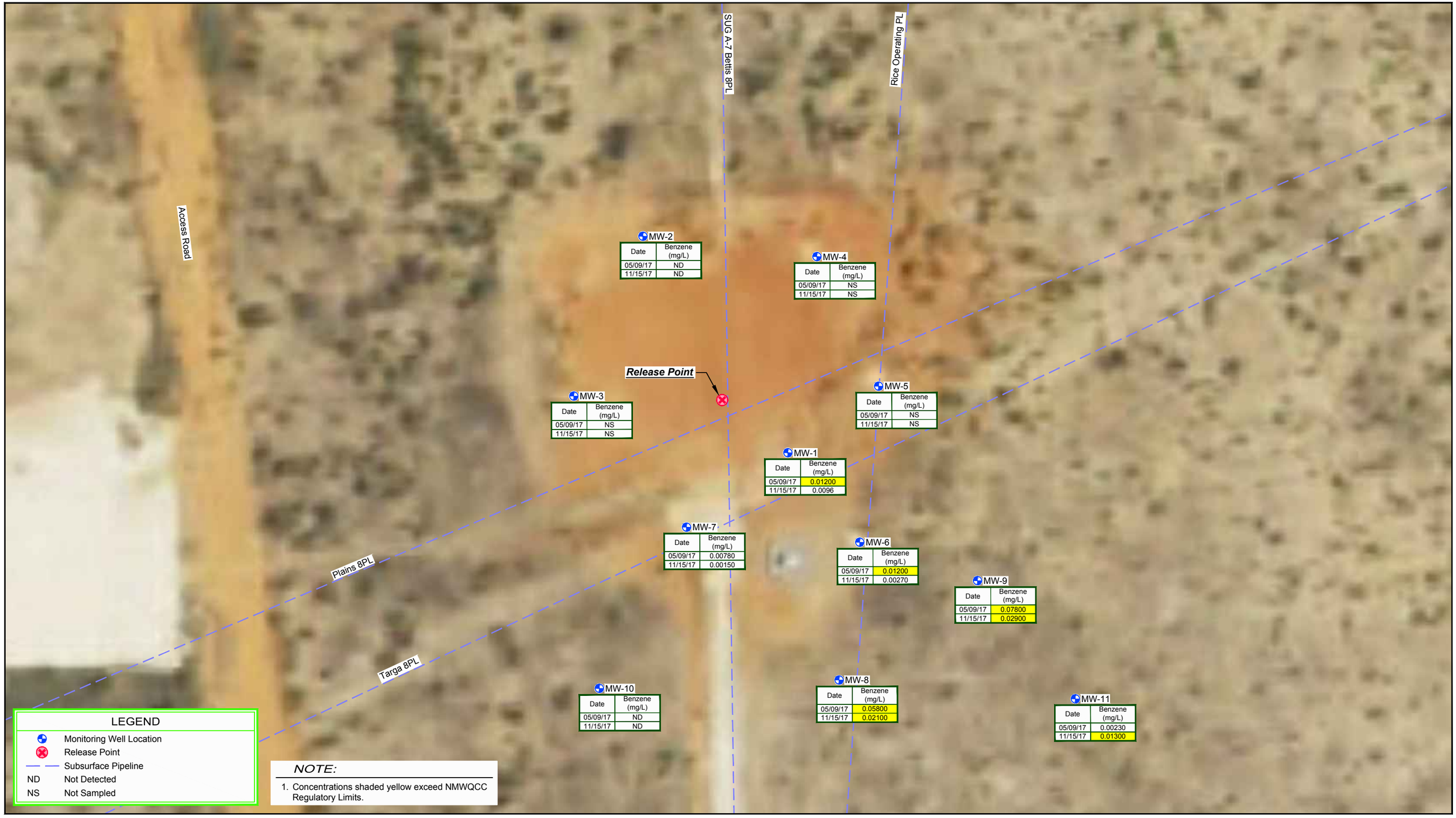

Source: NAIP Imagery, New Mexico 2014

Lat/Long: 32.47536° North, 103.14215° West

0 20 60ft

Coordinate System:
NAD 83 (2011) State Plane-
New Mexico East (US Feet)

ETC FIELD SERVICES LLC
LEA COUNTY, NEW MEXICO
A-7 BETTIS PIPELINE

082150-2017

Feb 28, 2018

BENZENE IN GROUNDWATER MAP - 2017

FIGURE 6

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Tables

Table 1

Monitor Well Specifications And Groundwater Elevation
ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico

Well Number	Casing Well Elevation	Total Depth	Date Measured	Depth to LNAPL	Depth to Water	LNAPL Thickness	Corrected Groundwater Elevation
MW-1	3,413.64	74.28	2/7/2013	-	59.82	-	3,353.82
			5/10/2013	-	59.36	-	3,354.28
			9/3/2013	-	59.91	-	3,353.73
			7/30/2014	-	59.19	-	3,354.45
			10/31/2014	-	59.13	-	3,354.51
			1/21/2015	-	58.99	-	3,354.65
			4/21/2015	-	58.96	-	3,354.68
			12/21/2015	-	59.04	-	3,354.60
			6/1/2016	-	58.95	-	3,354.69
			12/8/2016	-	58.93	-	3,354.71
			5/9/2017	-	58.85	-	3,354.79
			11/15/2017	-	58.95	-	3,354.69
MW-2	3,412.88	74.18	2/7/2013	-	59.10	-	3,353.78
			5/10/2013	-	58.20	-	3,354.68
			9/3/2013	-	58.21	-	3,354.67
			7/30/2014	-	58.02	-	3,354.86
			10/31/2014	-	57.91	-	3,354.97
			1/21/2015	-	57.75	-	3,355.13
			4/21/2015	-	57.76	-	3,355.12
			12/21/2015	-	57.84	-	3,355.04
			6/1/2016	-	57.79	-	3,355.09
			12/8/2016	-	57.78	-	3,355.10
			5/9/2017	-	57.71	-	3,355.17
			11/15/2017	-	57.75	-	3,355.13
MW-3	3,412.96	74.04	2/7/2013	-	58.49	-	3,354.47
			5/10/2013	-	58.35	-	3,354.61
			9/3/2013	-	58.32	-	3,354.64
			7/30/2014	-	58.26	-	3,354.70
			10/31/2014	-	58.19	-	3,354.77
			1/21/2015	-	58.01	-	3,354.95
			4/21/2015	-	58.96	-	3,354.00
			12/21/2015	-	58.04	-	3,354.92
			6/1/2016	-	57.93	-	3,355.03
			12/8/2016	-	58.94	-	3,354.02
			5/9/2017	-	57.82	-	3,355.14
			11/15/2017	-	57.88	-	3,355.08
MW-4	3,413.15	72.65	9/3/2013	-	59.18	-	3,353.97
			7/30/2014	-	58.62	-	3,354.53
			10/31/2014	-	58.47	-	3,354.68
			1/21/2015	-	58.33	-	3,354.82
			4/21/2015	-	58.31	-	3,354.84
			12/21/2015	-	58.36	-	3,354.79
			6/1/2016	-	58.32	-	3,354.83
			12/8/2016	-	58.31	-	3,354.84
			5/9/2017	-	58.25	-	3,354.90
			11/15/2017	-	58.34	-	3,354.81

Table 1

Monitor Well Specifications And Groundwater Elevation
ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico

Well Number	Casing Well Elevation	Total Depth	Date Measured	Depth to LNAPL	Depth to Water	LNAPL Thickness	Corrected Groundwater Elevation
MW-5	3,413.53	73.32	9/3/2013	-	59.23	-	3,354.30
			7/30/2014	-	59.14	-	3,354.39
			10/31/2014	-	59.12	-	3,354.41
			1/21/2015	-	58.93	-	3,354.60
			4/21/2015	-	58.97	-	3,354.56
			6/1/2016	-	58.90	-	3,354.63
			12/8/2016	-	58.87	-	3,354.66
			5/9/2017	-	58.82	-	3,354.71
			11/15/2017	-	58.90	-	3,354.63
MW-6	3,413.30	69.21	9/3/2013*	-	59.10	-	3,354.20
			7/30/2014	-	59.03	-	3,354.27
			10/31/2014	-	59.06	-	3,354.24
			1/21/2015	-	58.94	-	3,354.36
			4/21/2015	-	58.95	-	3,354.35
			12/21/2015	-	58.89	-	3,354.41
			6/1/2016	-	58.81	-	3,354.49
			12/8/2016	-	58.80	-	3,354.50
			5/9/2017	-	58.74	-	3,354.56
			11/15/2017	-	58.80	-	3,354.50
MW-7	3,413.01	72.14	9/3/2013	-	58.62	-	3,354.39
			7/30/2014	-	58.53	-	3,354.48
			10/31/2014	-	58.57	-	3,354.44
			1/21/2015	-	58.44	-	3,354.57
			4/21/2015	-	58.35	-	3,354.66
			12/21/2015	-	58.36	-	3,354.65
			6/1/2016	-	58.27	-	3,354.74
			12/8/2016	-	58.27	-	3,354.74
			5/9/2017	-	58.16	-	3,354.85
			11/15/2017	-	58.23	-	3,354.78
MW-8	3,412.02	71.66	1/21/2015	-	57.84	-	3,354.18
			4/21/2015	-	57.75	-	3,354.27
			12/21/2015	-	57.75	-	3,354.27
			6/1/2016	-	57.65	-	3,354.37
			12/8/2016	-	57.62	-	3,354.40
			5/9/2017	-	57.65	-	3,354.37
			11/15/2017	-	57.60	-	3,354.42
MW-9	3,412.38	71.34	1/21/2015	-	58.21	-	3,354.17
			4/21/2015	-	58.10	-	3,354.28
			12/21/2015	-	58.10	-	3,354.28
			6/1/2016	-	58.02	-	3,354.36
			12/8/2016	-	58.00	-	3,354.38
			5/9/2017	-	58.00	-	3,354.38
			11/15/2017	-	58.08	-	3,354.30

Table 1

Monitor Well Specifications And Groundwater Elevation
ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico

Well Number	Casing Well Elevation	Total Depth	Date Measured	Depth to LNAPL	Depth to Water	LNAPL Thickness	Corrected Groundwater Elevation
MW-10	3411.86	70.32	12/21/2015	-	57.24	-	3354.62
			6/1/2016	-	57.15	-	3354.71
			12/8/2016	-	57.10	-	3354.76
			5/9/2017	-	57.01	-	3354.85
			11/15/2017	-	57.03	-	3354.83
MW-11	3412.14	70.32	12/21/2015	-	58.01	-	3354.13
			6/1/2016	-	57.92	-	3354.22
			12/8/2016	-	57.92	-	3354.22
			5/9/2017	-	57.86	-	3354.28
			11/15/2017	-	57.98	-	3354.16

Notes:

Corrected groundwater elevation reported in feet above mean sea level
LNAPL = Light non-aqueous phase liquid

Table 2

Field Parameter Summary
ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico

Sample ID	Date	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Conductivity (mS/cm)
MW-1	7/30/2014	27	6.71	4.1	-128.5	4435
	10/30/2014	No Parameters Collected				
	1/21/2015	8.2	7.76	28.9	-31.6	2884
	4/21/2015	21	6.66	3.6	3.2	3785
	12/21/2015	19.89	6.89	3.56	-90.7	3846
	6/1/2016	20.4	6.76	1.71	-123.9	2940
	12/9/2016	19	6.37	5.22	-113.7	2559
	5/9/2017	19.39	6.93	2.05	-146.8	3018
	11/15/2017	18	7.17	2.16	-45.3	4070
MW-2	7/31/2014	24.4	7.05	21.5	215	1509
	10/30/2014	No Parameters Collected				
	1/21/2015	12.9	7.4	23.1	242.3	1654
	4/21/2015	19.3	6.94	4.1	322.2	1648
	12/21/2015	19.59	7.31	3.06	-41.4	1956
	6/1/2016	20.1	6.93	1.93	37.4	1650
	12/9/2016	18.61	6.97	1.76	-112.7	1640
	5/9/2017	19.06	6.37	2.72	-58.5	1676
	11/15/2017	17.54	7.39	2.99	107.6	1978
MW-3	7/31/2014	21	7.13	16.1	571	1173
	10/30/2014	No Parameters Collected				
	1/21/2015	9.7	7.71	52.3	408.7	1425
	4/21/2015	18.7	7.12	38.1	256.1	1353
	12/21/2015	19.7	7.36	3.11	-55.3	1468
	11/15/2017	17.81	7.55	2.44	117.7	1599
MW-4	7/30/2014	23.6	6.95	34.6	568.3	1239
	10/30/2014	No Parameters Collected				
	1/21/2015	15	7.31	26.6	525.3	1393
	4/21/2015	19.5	6.97	18	463.2	1420
	12/21/2015	19.71	7	3.01	-47.3	1620
	11/15/2017	17.74	7.25	2.56	124.5	1581
MW-5	7/30/2014	22.7	6.86	10.1	55.7	1213
	10/30/2014	No Parameters Collected				
	1/21/2015	15.4	7.31	22.8	510.3	1188
	4/21/2015	19.9	6.79	6.3	283.2	1323
	11/15/2017	17.86	7.11	1.29	-50.3	1551
MW-6	7/30/2014	24.6	6.67	2.7	-145.4	4320
	10/30/2014	No Parameters Collected				
	1/21/2015	7.3	8.11	50.3	108.9	3479
	4/21/2015	20.8	6.6	2.3	-30.9	4923
	12/21/2015	19.56	6.99	3.14	-106.2	6450
	6/2/2016	20	6.39	1.25	-93.8	5290
	12/9/2016	18.9	6.99	1.88	-170	4387
	5/9/2017	19.08	7.92	4.5	-73.8	4289
	11/15/2017	17.72	7.38	1.01	-73.1	4347

Table 2

Field Parameter Summary
ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico

Sample ID	Date	Temperature (°C)	pH	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Conductivity (mS/cm)
MW-7	7/30/2014	24.1	7.01	6.5	-106.7	1412
	10/30/2014	No Parameters Collected				
	1/21/2015	7.2	7.91	43.8	110.7	2717
	4/21/2015	21.1	6.95	10	269.6	1938
	12/21/2015	19.61	7.07	2.57	-108.4	1919
	6/2/2016	20.2	7.08	1.47	-115.7	1580
	12/9/2016	19.02	7.17	3.11	74.8	1499
	5/9/2017	19.27	6.91	2.24	-146.9	1400
	11/15/2017	17.64	7.49	1.67	-29	1759
MW-8	1/21/2015	8.2	8.14	40.2	316.8	1202.43
	4/21/2015	20.1	6.93	10.6	517.3	1942
	12/21/2015	19.14	7.09	3.68	-55.7	2144
	6/2/2016	19.8	7.08	1.43	129.5	1820
	12/9/2016	18.54	7.22	8.28	463.9	1889
	5/9/2017	18.65	6.92	6.38	335.3	1938
	11/15/2017	17.53	7.5	1.89	20	2348
MW-9	1/21/2015	6	8.33	60.9	201.7	1180
	4/21/2015	19.8	6.89	6.5	275.9	1298
	12/21/2015	19.31	7.09	3.04	-50.1	1395
	6/2/2016	19.9	6.93	1.23	-115	1180
	12/9/2016	18.72	7.15	7.87	-122.3	1145
	5/9/2017	18.88	6.68	3.76	-139.2	1138
	11/15/2017	17.68	7.16	1.41	-77.6	1464
MW-10	12/21/2015	19.2	7.49	7.07	-9.4	3616
	6/2/2016	20.1	7.23	3.74	97.2	3250
	12/9/2016	18.64	7.23	3.76	419.5	3183
	5/9/2017	18.74	5.98	2.97	-16.7	3535
	11/15/2017	17.49	7.3	2.06	73.5	4692
MW-11	12/21/2015	18.44	7.41	6.97	43.2	1285
	6/2/2016	19.8	7.36	6.51	385.7	1120
	12/9/2016	18.56	7.34	6.85	436.6	1086
	5/9/2017	18.82	7.09	4.94	-60.8	1121
	11/15/2017	17.34	7.42	3.89	7.5	1385

Notes:

°C = degress celcius
mg/L = milligrams per liter
mV = millivolts
mS/cm = microsiemens per centimeter

Table 3

ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico
Groundwater Analytical Results Summary

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)
MW-1	2/7/2013*	**0.51600**	<0.00100	0.06880	0.02910	**1,200**
	5/10/2013*	**0.55100**	0.09150	0.14600	0.11400	**901**
	9/3/2013*	**0.01940**	<0.00100	0.01720	0.03660	**561**
	2/28/2014*	**0.39500**	<0.00200	0.08500	0.03500	**1,220**
	7/30/2014	<0.00100	<0.00200	<0.00100	0.01780	**1,190**
	10/31/2014	**0.28400**	<0.00100	0.06710	<0.00100	**871**
	1/21/2015	**0.13700**	<0.0500	0.11100	<0.05000	**618**
	4/21/2015	**0.10400**	<0.00100	0.03240	<0.00100	**845**
	12/21/2015	**0.02600**	<0.00100	0.01100	0.00210	**890**
	6/1/2016	**0.02100**	<0.00100	0.00730	<0.00150	**850**
	12/9/2016	0.00300	<0.00100	0.00200	<0.00150	**600**
	5/9/2017	**0.01200**	<0.00100	0.00480	<0.00150	**650**
	11/15/2017	0.00960	<0.00100	0.00280	<0.00150	**700**
MW-2	2/7/2013*	<0.00100	<0.00200	<0.00100	<0.00200	142
	5/10/2013*	<0.00100	<0.00200	<0.00100	<0.00200	138
	9/3/2013*	<0.00100	<0.00100	<0.00100	<0.00200	139
	2/28/2014*	<0.00100	<0.00200	<0.00100	<0.00100	134
	7/31/2014	<0.00100	<0.00200	<0.00100	<0.00100	144
	10/31/2014	<0.00100	<0.00100	<0.00100	<0.00100	168
	1/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	167
	4/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	159
	12/21/2015	<0.00100	<0.00100	<0.00100	<0.00150	170
	6/1/2016	<0.00100	<0.00100	<0.00100	<0.00150	180
	12/9/2016	<0.00100	<0.00100	<0.00100	<0.00150	190
	5/9/2017	<0.00100	<0.00100	<0.00100	<0.00150	190
	11/15/2017	<0.00100	<0.00100	<0.00100	<0.00150	170
MW-3	2/7/2013*	<0.00100	<0.00200	<0.00100	<0.00200	102
	5/10/2013*	<0.00100	<0.00200	<0.00100	<0.00200	91.3
	9/3/2013*	<0.00100	<0.00100	<0.00100	<0.00200	75.9
	2/28/2014*	<0.00100	<0.00200	<0.00100	<0.00100	95.4
	7/31/2014	<0.00100	<0.00200	<0.00100	<0.00100	89.9
	10/31/2014	0.00460	<0.00100	<0.00100	<0.00100	114
	1/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	111
	4/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	114
	12/21/2015	<0.00100	<0.00100	<0.00100	<0.00150	110
	6/1/2016	Not Sampled				
	12/9/2016	Not Sampled				
	5/9/2017	Not Sampled				
	11/15/2017	<0.00100	<0.00100	<0.00100	<0.00150	130

Table 3

ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico
Groundwater Analytical Results Summary

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)
MW-4	9/3/2013*	<0.00100	<0.00100	<0.00100	<0.00100	86.9
	2/28/2014*	<0.00100	<0.00200	<0.00100	<0.00100	89.7
	7/30/2014	<0.00100	<0.00200	<0.00100	<0.00100	98.8
	10/31/2014	<0.00100	<0.00100	<0.00100	<0.00100	106
	1/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	131
	4/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	120
	12/21/2015	<0.00100	<0.00100	<0.00100	<0.00150	120
	6/1/2016	Not Sampled				
	12/9/2016	Not Sampled				
	5/9/2017	Not Sampled				
	11/15/2017	<0.00100	<0.00100	<0.00100	<0.00150	98
MW-5	9/3/2013*	0.00200	<0.00100	<0.00100	<0.00100	85.7
	2/28/2014*	<0.00100	<0.00200	<0.00100	<0.00100	87.1
	7/30/2014	<0.00100	<0.00200	<0.00100	0.00410	73.4
	10/31/2014	0.00440	<0.00100	<0.00100	0.01450	77.1
	1/21/2015	<0.00100	<0.00100	<0.00100	0.00280	69.9
	4/21/2015	<0.00100	<0.00100	<0.00100	0.00970	73.3
	12/21/2015	Not Sampled				
	6/1/2016	Not Sampled				
	12/9/2016	Not Sampled				
	5/9/2017	Not Sampled				
	11/15/2017	<0.00100	<0.00100	<0.00100	<0.00150	73
MW-6	9/3/2013*	**0.46900**	<0.00100	0.00613	0.03420	**906**
	2/28/2014*	**0.85100**	<0.00100	0.01850	0.05900	**1,290**
	7/30/2014	<0.00100	<0.00200	0.00965	0.01030	**1,010**
	10/31/2014	**0.64700**	<0.0500	<0.0500	0.36800	**1,420**
	1/21/2015	**0.44000**	<0.0500	<0.0500	<0.0500	**429**
	4/21/2015	**0.79000**	<0.0500	<0.0500	<0.0500	**1,190**
	12/21/2015	**0.20000**	<0.00100	0.00220	0.00340	**1,700**
	6/2/2016	**0.09900**	<0.00100	0.00260	0.00390	**1,500**
	12/9/2016	**0.01600**	<0.00100	0.00130	0.00150	**1,400**
	5/9/2017	**0.01200**	<0.00100	0.00140	0.00160	**1,100**
	11/15/2017	0.00270	<0.00100	<0.00100	<0.00150	**1,200**
MW-7	9/3/2013*	**0.08420**	<0.00100	<0.00100	<0.00200	91.0
	2/28/2014*	**0.06060**	<0.00200	0.00149	<0.00100	88.3
	7/30/2014	<0.00100	<0.00200	<0.00100	<0.00100	70.6
	10/31/2014	**0.03510**	<0.00100	0.00290	0.00660	72.2
	1/21/2015	**0.01690**	<0.00100	<0.00100	<0.00100	46.6
	4/21/2015	**0.01230**	<0.00100	<0.00100	<0.00100	<25.0
	12/21/2015	0.00820	<0.00100	<0.00100	<0.00150	110
	6/2/2016	**0.01100**	<0.00100	<0.00100	<0.00150	99
	6/2/2016 (DUP)	**0.01200**	<0.00100	<0.00100	<0.00150	100
	12/9/2016	0.00310	<0.00100	<0.00100	<0.00150	94
	12/9/2016 (DUP)	0.00310	<0.00100	<0.00100	<0.00150	-
	5/9/2017	0.00780	<0.00100	<0.00100	<0.00150	88
	11/15/2017	0.00150	<0.00100	<0.00100	<0.00150	96

Table 3

ETC Field Services LLC - A-7 Bettis Pipeline Release
Section 14, Township 21 South, Range 37 East
Lea County, New Mexico
Groundwater Analytical Results Summary

Sample ID	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)
MW-8	1/21/2015	<0.00100	<0.00100	<0.00100	0.00120	**362**
	4/21/2015	<0.00100	<0.00100	<0.00100	<0.00100	184
	12/22/2015	**0.02200**	<0.00100	0.00250	<0.00150	190
	6/2/2016	**0.05100**	<0.00100	0.00600	<0.00150	170
	12/9/2016	**0.01100**	<0.00100	0.00320	<0.00150	190
	5/9/2017	**0.05800**	<0.00100	0.00550	<0.00150	180
	11/15/2017	**0.02100**	<0.00100	0.00290	<0.00150	180
MW-9	1/21/2015	**0.02400**	<0.00100	<0.00100	0.01510	53.9
	4/21/2015	**0.03050**	<0.00100	<0.00100	0.03400	53.4
	12/22/2015	**0.01900**	<0.00100	<0.00100	0.01800	57
	6/2/2016	**0.05100**	<0.00100	<0.00100	0.02500	43
	12/9/2016	**0.03200**	<0.00100	<0.00100	0.01400	43
	5/9/2017	**0.07800**	<0.00100	<0.00100	0.04000	42
	11/15/2017	**0.02900**	<0.00100	<0.00100	0.01600	35
MW-10	12/21/2015	<0.00100	<0.00100	<0.00100	<0.00150	**570**
	6/2/2016	<0.00100	<0.00100	<0.00100	<0.00150	**500**
	12/9/2016	<0.00100	<0.00100	<0.00100	<0.00150	**580**
	5/9/2017	<0.00100	<0.00100	<0.00100	<0.00150	**640**
	11/15/2017	<0.00100	<0.00100	<0.00100	<0.00150	**520**
MW-11	12/21/2015	0.00130	<0.00100	<0.00100	<0.00150	55
	6/2/2016	<0.00100	<0.00100	<0.00100	<0.00150	46
	12/9/2016	<0.00100	<0.00100	<0.00100	<0.00150	44
	5/9/2017	0.00230	<0.00100	<0.00100	<0.00150	56
	11/15/2017	**0.01300**	<0.00100	<0.00100	0.00180	35
NMWQCC Groundwater Quality Standards		***0.01***	***0.75***	***0.75***	***0.62***	***250***

Notes:

Concentrations in **bold** exceed the applicable NMWQCC Regulatory Limit
NMWQCC = New Mexico Water Quality Controll Comission
mg/L- milligrams per Liter
*Samples collected by Basin Environmental Services, LLC

Appendices

Appendix A
Groundwater Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

May 15, 2017

Bernie Bockish

GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: A 7 Bettis OrderNo.: 1705643

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 10 sample(s) on 5/11/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-MG-MW-1
Project: A 7 Bettis
Collection Date: 5/9/2017 3:39:00 PM
Lab ID: 1705643-001
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	650	50	*	mg/L	100	5/12/2017 9:16:45 PM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	12	1.0		µg/L	1	5/12/2017 11:17:27 AM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 11:17:27 AM	R42764
Ethylbenzene	4.8	1.0		µg/L	1	5/12/2017 11:17:27 AM	R42764
1,2,4-Trimethylbenzene	5.7	1.0		µg/L	1	5/12/2017 11:17:27 AM	R42764
1,3,5-Trimethylbenzene	3.7	1.0		µg/L	1	5/12/2017 11:17:27 AM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 11:17:27 AM	R42764
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	5/12/2017 11:17:27 AM	R42764
Surr: 4-Bromofluorobenzene	93.3	70-130		%Rec	1	5/12/2017 11:17:27 AM	R42764
Surr: Dibromofluoromethane	99.4	70-130		%Rec	1	5/12/2017 11:17:27 AM	R42764
Surr: Toluene-d8	106	70-130		%Rec	1	5/12/2017 11:17:27 AM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-MG-MW-2
Project: A 7 Bettis
Collection Date: 5/9/2017 1:35:00 PM
Lab ID: 1705643-002
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	190	5.0		mg/L	10	5/12/2017 9:29:09 PM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	5/12/2017 12:44:47 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 12:44:47 PM	R42764
Ethylbenzene	ND	1.0		µg/L	1	5/12/2017 12:44:47 PM	R42764
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 12:44:47 PM	R42764
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 12:44:47 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 12:44:47 PM	R42764
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	5/12/2017 12:44:47 PM	R42764
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	5/12/2017 12:44:47 PM	R42764
Surr: Dibromofluoromethane	104	70-130		%Rec	1	5/12/2017 12:44:47 PM	R42764
Surr: Toluene-d8	107	70-130		%Rec	1	5/12/2017 12:44:47 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-CN-MW-6
Project: A 7 Bettis
Collection Date: 5/9/2017 3:30:00 PM
Lab ID: 1705643-003
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1100	50	*	mg/L	100	5/12/2017 10:31:11 PM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	12	1.0		µg/L	1	5/12/2017 1:14:01 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 1:14:01 PM	R42764
Ethylbenzene	1.4	1.0		µg/L	1	5/12/2017 1:14:01 PM	R42764
1,2,4-Trimethylbenzene	5.3	1.0		µg/L	1	5/12/2017 1:14:01 PM	R42764
1,3,5-Trimethylbenzene	1.9	1.0		µg/L	1	5/12/2017 1:14:01 PM	R42764
Xylenes, Total	1.6	1.5		µg/L	1	5/12/2017 1:14:01 PM	R42764
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	5/12/2017 1:14:01 PM	R42764
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	5/12/2017 1:14:01 PM	R42764
Surr: Dibromofluoromethane	104	70-130		%Rec	1	5/12/2017 1:14:01 PM	R42764
Surr: Toluene-d8	102	70-130		%Rec	1	5/12/2017 1:14:01 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-MG-MW-7
Project: A 7 Bettis
Collection Date: 5/9/2017 2:10:00 PM
Lab ID: 1705643-004
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	88	5.0		mg/L	10	5/12/2017 10:43:36 PM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	7.8	1.0		µg/L	1	5/12/2017 1:42:52 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 1:42:52 PM	R42764
Ethylbenzene	ND	1.0		µg/L	1	5/12/2017 1:42:52 PM	R42764
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 1:42:52 PM	R42764
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 1:42:52 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 1:42:52 PM	R42764
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	5/12/2017 1:42:52 PM	R42764
Surr: 4-Bromofluorobenzene	111	70-130		%Rec	1	5/12/2017 1:42:52 PM	R42764
Surr: Dibromofluoromethane	99.2	70-130		%Rec	1	5/12/2017 1:42:52 PM	R42764
Surr: Toluene-d8	103	70-130		%Rec	1	5/12/2017 1:42:52 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-CN-MW-8
Project: A 7 Bettis
Collection Date: 5/9/2017 2:50:00 PM
Lab ID: 1705643-005
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	180	50		mg/L	100	5/12/2017 11:20:50 PM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	58	1.0		µg/L	1	5/12/2017 2:11:46 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 2:11:46 PM	R42764
Ethylbenzene	5.5	1.0		µg/L	1	5/12/2017 2:11:46 PM	R42764
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 2:11:46 PM	R42764
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 2:11:46 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 2:11:46 PM	R42764
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	5/12/2017 2:11:46 PM	R42764
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	5/12/2017 2:11:46 PM	R42764
Surr: Dibromofluoromethane	102	70-130		%Rec	1	5/12/2017 2:11:46 PM	R42764
Surr: Toluene-d8	101	70-130		%Rec	1	5/12/2017 2:11:46 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-CM-MW-9
Project: A 7 Bettis
Collection Date: 5/9/2017 2:35:00 PM
Lab ID: 1705643-006
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	42	5.0		mg/L	10	5/12/2017 11:33:16 PM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	78	1.0		µg/L	1	5/12/2017 2:40:51 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 2:40:51 PM	R42764
Ethylbenzene	ND	1.0		µg/L	1	5/12/2017 2:40:51 PM	R42764
1,2,4-Trimethylbenzene	82	1.0		µg/L	1	5/12/2017 2:40:51 PM	R42764
1,3,5-Trimethylbenzene	26	1.0		µg/L	1	5/12/2017 2:40:51 PM	R42764
Xylenes, Total	40	1.5		µg/L	1	5/12/2017 2:40:51 PM	R42764
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	5/12/2017 2:40:51 PM	R42764
Surr: 4-Bromofluorobenzene	82.9	70-130		%Rec	1	5/12/2017 2:40:51 PM	R42764
Surr: Dibromofluoromethane	106	70-130		%Rec	1	5/12/2017 2:40:51 PM	R42764
Surr: Toluene-d8	106	70-130		%Rec	1	5/12/2017 2:40:51 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-CN-MW-10
Project: A 7 Bettis
Collection Date: 5/9/2017 1:25:00 PM
Lab ID: 1705643-007
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	640	50	*	mg/L	100	5/13/2017 12:10:29 AM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	5/12/2017 3:10:24 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 3:10:24 PM	R42764
Ethylbenzene	ND	1.0		µg/L	1	5/12/2017 3:10:24 PM	R42764
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 3:10:24 PM	R42764
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 3:10:24 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 3:10:24 PM	R42764
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	5/12/2017 3:10:24 PM	R42764
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	5/12/2017 3:10:24 PM	R42764
Surr: Dibromofluoromethane	104	70-130		%Rec	1	5/12/2017 3:10:24 PM	R42764
Surr: Toluene-d8	106	70-130		%Rec	1	5/12/2017 3:10:24 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-MG-MW-11
Project: A 7 Bettis
Collection Date: 5/9/2017 2:41:00 PM
Lab ID: 1705643-008
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	56	5.0		mg/L	10	5/13/2017 12:47:44 AM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	2.3	1.0		µg/L	1	5/12/2017 3:39:43 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 3:39:43 PM	R42764
Ethylbenzene	ND	1.0		µg/L	1	5/12/2017 3:39:43 PM	R42764
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 3:39:43 PM	R42764
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 3:39:43 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 3:39:43 PM	R42764
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	5/12/2017 3:39:43 PM	R42764
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	5/12/2017 3:39:43 PM	R42764
Surr: Dibromofluoromethane	104	70-130		%Rec	1	5/12/2017 3:39:43 PM	R42764
Surr: Toluene-d8	104	70-130		%Rec	1	5/12/2017 3:39:43 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: 082150-050917-MG-MW-DUP
Project: A 7 Bettis
Collection Date: 5/9/2017
Lab ID: 1705643-009
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	740	50	*	mg/L	100	5/13/2017 1:24:57 AM	R42767
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	14	1.0		µg/L	1	5/12/2017 4:09:11 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 4:09:11 PM	R42764
Ethylbenzene	4.2	1.0		µg/L	1	5/12/2017 4:09:11 PM	R42764
1,2,4-Trimethylbenzene	5.3	1.0		µg/L	1	5/12/2017 4:09:11 PM	R42764
1,3,5-Trimethylbenzene	3.6	1.0		µg/L	1	5/12/2017 4:09:11 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 4:09:11 PM	R42764
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	5/12/2017 4:09:11 PM	R42764
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	5/12/2017 4:09:11 PM	R42764
Surr: Dibromofluoromethane	101	70-130		%Rec	1	5/12/2017 4:09:11 PM	R42764
Surr: Toluene-d8	103	70-130		%Rec	1	5/12/2017 4:09:11 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Client Sample ID: trip blank
Project: A 7 Bettis
Collection Date:
Lab ID: 1705643-010
Matrix: AQUEOUS
Received Date: 5/11/2017 9:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	5/12/2017 4:38:58 PM	R42764
Toluene	ND	1.0		µg/L	1	5/12/2017 4:38:58 PM	R42764
Ethylbenzene	ND	1.0		µg/L	1	5/12/2017 4:38:58 PM	R42764
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 4:38:58 PM	R42764
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	5/12/2017 4:38:58 PM	R42764
Xylenes, Total	ND	1.5		µg/L	1	5/12/2017 4:38:58 PM	R42764
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	5/12/2017 4:38:58 PM	R42764
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	5/12/2017 4:38:58 PM	R42764
Surr: Dibromofluoromethane	97.6	70-130		%Rec	1	5/12/2017 4:38:58 PM	R42764
Surr: Toluene-d8	104	70-130		%Rec	1	5/12/2017 4:38:58 PM	R42764

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1705643**

15-May-17

Client: GHD

Project: A 7 Bettis

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R42767**	RunNo:	**42767**					
Prep Date:		Analysis Date:	**5/12/2017**	SeqNo:	**1345282**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R42767**	RunNo:	**42767**					
Prep Date:		Analysis Date:	**5/12/2017**	SeqNo:	**1345283**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1705643**

15-May-17

Client: GHD

Project: A 7 Bettis

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **R42764**	RunNo: **42764**
Prep Date:	Analysis Date: **5/12/2017**	SeqNo: **1345223** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.5	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **R42764**	RunNo: **42764**
Prep Date:	Analysis Date: **5/12/2017**	SeqNo: **1345224** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.5	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.7	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID **1705643-001ams**	SampType: **MS**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **082150-050917-MG-**	Batch ID: **R42764**	RunNo: **42764**
Prep Date:	Analysis Date: **5/12/2017**	SeqNo: **1345229** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	32	1.0	20.00	12.43	98.3	70	130			
Toluene	21	1.0	20.00	0.1442	104	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		106	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.8	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.6	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID **1705643-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **082150-050917-MG-**	Batch ID: **R42764**	RunNo: **42764**
Prep Date:	Analysis Date: **5/12/2017**	SeqNo: **1345230** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1705643**

15-May-17

Client: GHD

Project: A 7 Bettis

Sample ID	**1705643-001amsd**	SampType:	**MSD**	TestCode:	**EPA Method 8260: Volatiles Short List**
Client ID:	**082150-050917-MG-**	Batch ID:	**R42764**	RunNo:	**42764**
Prep Date:		Analysis Date:	**5/12/2017**	SeqNo:	**1345230** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	32	1.0	20.00	12.43	99.7	70	130	0.883	20	
Toluene	20	1.0	20.00	0.1442	100	70	130	3.23	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130	0	0	
Surr: 4-Bromofluorobenzene	9.7		10.00		97.1	70	130	0	0	
Surr: Dibromofluoromethane	9.9		10.00		98.6	70	130	0	0	
Surr: Toluene-d8	10		10.00		103	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: GHD | Work Order Number: 1705543 | RcptNo: 1

Received By: Erin Melendrez 5/11/2017 9:20:00 AM

Completed By: Ashley Gallegos 5/11/2017 2:33:47 PM

Reviewed By: ENM 05/11/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ✓
2. Is Chain of Custody complete?	Yes ✓	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ✓	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ✓	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ✓	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ✓	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ✓	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ✓	NA ☐
10. VOA vials have zero headspace?	Yes ✓	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ✓	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✓	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✓	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ✓	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✓	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ✓

Person Notified:		Date	
By Whom:		Via:	eMail ☐ Phone ☐ Fax ☐ In Person ☐
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

Chain-of-Custody Record

Client: GHD Services

Mailing Address: 6121 Indian School #200 Albuquerque, NM 87110

Phone #: 505-884-0672

email or Fax#: bernard.bockisch@ghd.com

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: A-7 Bettis

Project #: 082150

Project Manager: Bernard Bockisch

Sampler: C. Mathews, Cavelich, M. Grant

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.4°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1705643	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX only	Chloride			Air Bubbles (Y or N)
5/9/17	1539	H_2O	GW-082150-050917-MW6-MW-1	3 VOAs	plastic	HCl, None	-001											X	X			
5/9/17	1335	H_2O	GW-082150-050917-MW6-MW-2	3 VOAs	plastic	HCl, None	-002											X	X			
5/9/17	1530	H_2O	GW-082150-050917-CN-MW-6	3 VOAs	plastic	HCl, None	-003											X	X			
5/9/17	1410	H_2O	GW-082150-050917-MW6-MW-7	3 VOAs	plastic	HCl, None	-004											X	X			
5/9/17	1450	H_2O	GW-082150-050917-CN-MW-8	3 VOAs	plastic	HCl, None	-005											X	X			
5/9/17	1435	H_2O	GW-082150-050917-CN-MW-9	3 VOAs	plastic	HCl, None	-006											X	X			
5/9/17	1325	H_2O	GW-082150-050917-CN-MW-10	3 VOAs	plastic	HCl, None	-007											X	X			
5/9/17	1441	H_2O	GW-082150-050917-MW6-MW-11	3 VOAs	plastic	HCl, None	-008											X	X			
5/9/17	—	H_2O	GW-082150-050917-MW6-DUP	3 VOAs	plastic	HCl, None	-009											X	X			
			Trip Blank				-010											X				

Date	Time	Relinquished by:	Received by:	Date	Time
5/10/17	0715	[signature] GHD	[signature]	5/10/17	0710
5/10/17	1900	[signature]	[signature]	05/11/17	0920

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 29, 2017

Bernie Bockisch
GHD
6121 Indian School Road, NE #200
Albuquerque, NM 87110
TEL: (505) 884-0672
FAX

RE: A7 Bettis OrderNo.: 1711990

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 11 sample(s) on 11/18/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-001
Collection Date: 11/15/2017 12:50:00 PM
Client Sample ID: GW-082150-111517-MG-MW-4
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	98	5.0		mg/L	10	11/22/2017 11:19:14 PM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 2:33:36 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 2:33:36 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 2:33:36 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 2:33:36 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis
Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 2:33:36 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 2:33:36 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 2:33:36 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 2:33:36 AM	C47319
Surr: 1,2-Dichloroethane-d4	94.3	70-130	%Rec	1	11/23/2017 2:33:36 AM	C47319
Surr: 4-Bromofluorobenzene	97.5	70-130	%Rec	1	11/23/2017 2:33:36 AM	C47319
Surr: Dibromofluoromethane	95.2	70-130	%Rec	1	11/23/2017 2:33:36 AM	C47319
Surr: Toluene-d8	101	70-130	%Rec	1	11/23/2017 2:33:36 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-002
Collection Date: 11/15/2017 1:12:00 PM
Client Sample ID: GW-082150-111517-MG-MW-2
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	170	5.0		mg/L	10	11/23/2017 12:33:41 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 3:02:27 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 3:02:27 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 3:02:27 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 3:02:27 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 3:02:27 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 3:02:27 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 3:02:27 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 3:02:27 AM	C47319
Surr: 1,2-Dichloroethane-d4	92.3	70-130	%Rec	1	11/23/2017 3:02:27 AM	C47319
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	11/23/2017 3:02:27 AM	C47319
Surr: Dibromofluoromethane	94.3	70-130	%Rec	1	11/23/2017 3:02:27 AM	C47319
Surr: Toluene-d8	99.5	70-130	%Rec	1	11/23/2017 3:02:27 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-003
Collection Date: 11/15/2017 1:38:00 PM
Client Sample ID: GW-082150-111517-MG-MW-3
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	130	5.0		mg/L	10	11/23/2017 12:58:30 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 3:31:14 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 3:31:14 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 3:31:14 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 3:31:14 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 3:31:14 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 3:31:14 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 3:31:14 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 3:31:14 AM	C47319
Surr: 1,2-Dichloroethane-d4	92.9	70-130	%Rec	1	11/23/2017 3:31:14 AM	C47319
Surr: 4-Bromofluorobenzene	99.4	70-130	%Rec	1	11/23/2017 3:31:14 AM	C47319
Surr: Dibromofluoromethane	93.4	70-130	%Rec	1	11/23/2017 3:31:14 AM	C47319
Surr: Toluene-d8	102	70-130	%Rec	1	11/23/2017 3:31:14 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-004
Collection Date: 11/15/2017 1:53:00 PM
Client Sample ID: GW-082150-111517-MG-MW-1
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	700	50	*	mg/L	100	11/23/2017 1:35:44 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	9.6	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Ethylbenzene	2.8	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Naphthalene	4.0	2.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1-Methylnaphthalene	14	4.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 4:00:02 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 4:00:02 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 4:00:02 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 4:00:02 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 4:00:02 AM	C47319
Isopropylbenzene	1.7	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 4:00:02 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
sec-Butylbenzene	1.5	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 4:00:02 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 4:00:02 AM	C47319
Surr: 1,2-Dichloroethane-d4	92.4	70-130	%Rec	1	11/23/2017 4:00:02 AM	C47319
Surr: 4-Bromofluorobenzene	100	70-130	%Rec	1	11/23/2017 4:00:02 AM	C47319
Surr: Dibromofluoromethane	94.2	70-130	%Rec	1	11/23/2017 4:00:02 AM	C47319
Surr: Toluene-d8	102	70-130	%Rec	1	11/23/2017 4:00:02 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-005
Collection Date: 11/15/2017 2:13:00 PM
Client Sample ID: GW-082150-111517-MG-MW-7
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	96	5.0		mg/L	10	11/23/2017 1:48:09 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	1.5	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 4:28:48 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 4:28:48 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 4:28:48 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 4:28:48 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 4:28:48 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 4:28:48 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 4:28:48 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 4:28:48 AM	C47319
Surr: 1,2-Dichloroethane-d4	90.4	70-130	%Rec	1	11/23/2017 4:28:48 AM	C47319
Surr: 4-Bromofluorobenzene	97.1	70-130	%Rec	1	11/23/2017 4:28:48 AM	C47319
Surr: Dibromofluoromethane	93.4	70-130	%Rec	1	11/23/2017 4:28:48 AM	C47319
Surr: Toluene-d8	102	70-130	%Rec	1	11/23/2017 4:28:48 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-006
Collection Date: 11/15/2017 2:30:00 PM
Client Sample ID: GW-082150-111517-MG-MW-6
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1200	50	*	mg/L	100	11/23/2017 2:25:23 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	2.7	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Naphthalene	2.3	2.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1-Methylnaphthalene	12	4.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 4:57:31 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 4:57:31 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 4:57:31 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 4:57:31 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 4:57:31 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 4:57:31 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 4:57:31 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 4:57:31 AM	C47319
Surr: 1,2-Dichloroethane-d4	94.1	70-130	%Rec	1	11/23/2017 4:57:31 AM	C47319
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	11/23/2017 4:57:31 AM	C47319
Surr: Dibromofluoromethane	94.1	70-130	%Rec	1	11/23/2017 4:57:31 AM	C47319
Surr: Toluene-d8	104	70-130	%Rec	1	11/23/2017 4:57:31 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-007
Collection Date: 11/15/2017 3:00:00 PM
Client Sample ID: GW-082150-111517-MG-MW-8
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	180	5.0		mg/L	10	11/23/2017 3:02:36 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	21	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Ethylbenzene	2.9	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 5:26:10 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 5:26:10 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 5:26:10 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 5:26:10 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 5:26:10 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 5:26:10 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 5:26:10 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 5:26:10 AM	C47319
Surr: 1,2-Dichloroethane-d4	89.6	70-130	%Rec	1	11/23/2017 5:26:10 AM	C47319
Surr: 4-Bromofluorobenzene	97.1	70-130	%Rec	1	11/23/2017 5:26:10 AM	C47319
Surr: Dibromofluoromethane	89.8	70-130	%Rec	1	11/23/2017 5:26:10 AM	C47319
Surr: Toluene-d8	102	70-130	%Rec	1	11/23/2017 5:26:10 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-008
Collection Date: 11/16/2017 12:00:00 PM
Client Sample ID: GW-082150-111617-MG-MW-5
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	73	5.0		mg/L	10	11/23/2017 3:27:26 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2,4-Trimethylbenzene	6.0	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,3,5-Trimethylbenzene	1.4	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 5:54:53 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 5:54:53 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 5:54:53 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 5:54:53 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 5:54:53 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 5:54:53 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 5:54:53 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 5:54:53 AM	C47319
Surr: 1,2-Dichloroethane-d4	92.5	70-130	%Rec	1	11/23/2017 5:54:53 AM	C47319
Surr: 4-Bromofluorobenzene	98.9	70-130	%Rec	1	11/23/2017 5:54:53 AM	C47319
Surr: Dibromofluoromethane	95.6	70-130	%Rec	1	11/23/2017 5:54:53 AM	C47319
Surr: Toluene-d8	99.0	70-130	%Rec	1	11/23/2017 5:54:53 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-009
Collection Date: 11/16/2017 12:25:00 PM
Client Sample ID: GW-082150-111617-MG-MW-9
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	35	5.0		mg/L	10	11/23/2017 3:52:15 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	29	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2,4-Trimethylbenzene	85	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,3,5-Trimethylbenzene	25	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Naphthalene	7.4	2.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1-Methylnaphthalene	13	4.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
2-Methylnaphthalene	6.6	4.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 6:23:32 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 6:23:32 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 6:23:32 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 6:23:32 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 6:23:32 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 6:23:32 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
sec-Butylbenzene	2.2	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 6:23:32 AM	C47319
Xylenes, Total	16	1.5	µg/L	1	11/23/2017 6:23:32 AM	C47319
Surr: 1,2-Dichloroethane-d4	85.7	70-130	%Rec	1	11/23/2017 6:23:32 AM	C47319
Surr: 4-Bromofluorobenzene	100	70-130	%Rec	1	11/23/2017 6:23:32 AM	C47319
Surr: Dibromofluoromethane	90.5	70-130	%Rec	1	11/23/2017 6:23:32 AM	C47319
Surr: Toluene-d8	101	70-130	%Rec	1	11/23/2017 6:23:32 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-010
Collection Date: 11/16/2017 12:50:00 PM
Client Sample ID: GW-082150-111617-MG-MW-11
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	35	5.0		mg/L	10	11/23/2017 4:41:54 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	13	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2,4-Trimethylbenzene	2.1	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 6:52:13 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 6:52:13 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 6:52:13 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 6:52:13 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 6:52:13 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 6:52:13 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 6:52:13 AM	C47319
Xylenes, Total	1.8	1.5	µg/L	1	11/23/2017 6:52:13 AM	C47319
Surr: 1,2-Dichloroethane-d4	87.8	70-130	%Rec	1	11/23/2017 6:52:13 AM	C47319
Surr: 4-Bromofluorobenzene	97.2	70-130	%Rec	1	11/23/2017 6:52:13 AM	C47319
Surr: Dibromofluoromethane	90.5	70-130	%Rec	1	11/23/2017 6:52:13 AM	C47319
Surr: Toluene-d8	98.8	70-130	%Rec	1	11/23/2017 6:52:13 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

Lab ID: 1711990-011
Collection Date: 11/16/2017 1:30:00 PM
Client Sample ID: GW-082150-111617-MG-MW-10
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	520	50	*	mg/L	100	11/23/2017 5:43:58 AM	R47322
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Toluene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Ethylbenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Naphthalene	ND	2.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
2-Methylnaphthalene	ND	4.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Acetone	ND	10		µg/L	1	11/23/2017 7:20:50 AM	C47319
Bromobenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Bromodichloromethane	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Bromoform	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Bromomethane	ND	3.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
2-Butanone	ND	10		µg/L	1	11/23/2017 7:20:50 AM	C47319
Carbon disulfide	ND	10		µg/L	1	11/23/2017 7:20:50 AM	C47319
Carbon Tetrachloride	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Chlorobenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Chloroethane	ND	2.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Chloroform	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Chloromethane	ND	3.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
2-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
4-Chlorotoluene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
cis-1,2-DCE	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Dibromochloromethane	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Dibromomethane	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1-Dichloroethane	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1-Dichloroethene	ND	1.0		µg/L	1	11/23/2017 7:20:50 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: A7 Bettis

Lab Order: 1711990

EPA METHOD 8260B: VOLATILES

Analyst: **DJF**

1,2-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,3-Dichloropropane	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
2,2-Dichloropropane	ND	2.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Hexachlorobutadiene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
2-Hexanone	ND	10	µg/L	1	11/23/2017 7:20:50 AM	C47319
Isopropylbenzene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
4-Isopropyltoluene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
4-Methyl-2-pentanone	ND	10	µg/L	1	11/23/2017 7:20:50 AM	C47319
Methylene Chloride	ND	3.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
n-Butylbenzene	ND	3.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
n-Propylbenzene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
sec-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Styrene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
tert-Butylbenzene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1,1,2-Tetrachloroethane	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1,2,2-Tetrachloroethane	ND	2.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Tetrachloroethene (PCE)	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
trans-1,2-DCE	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
trans-1,3-Dichloropropene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2,3-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2,4-Trichlorobenzene	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1,1-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,1,2-Trichloroethane	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Trichloroethene (TCE)	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Trichlorofluoromethane	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
1,2,3-Trichloropropane	ND	2.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Vinyl chloride	ND	1.0	µg/L	1	11/23/2017 7:20:50 AM	C47319
Xylenes, Total	ND	1.5	µg/L	1	11/23/2017 7:20:50 AM	C47319
Surr: 1,2-Dichloroethane-d4	87.5	70-130	%Rec	1	11/23/2017 7:20:50 AM	C47319
Surr: 4-Bromofluorobenzene	97.3	70-130	%Rec	1	11/23/2017 7:20:50 AM	C47319
Surr: Dibromofluoromethane	91.0	70-130	%Rec	1	11/23/2017 7:20:50 AM	C47319
Surr: Toluene-d8	102	70-130	%Rec	1	11/23/2017 7:20:50 AM	C47319

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711990**

29-Nov-17

Client: GHD

Project: A7 Bettis

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R47322**	RunNo:	**47322**					
Prep Date:		Analysis Date:	**11/22/2017**	SeqNo:	**1509677**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID	**LCS**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R47322**	RunNo:	**47322**					
Prep Date:		Analysis Date:	**11/22/2017**	SeqNo:	**1509678**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.5	0.50	5.000	0	90.5	90	110			

Sample ID	**1711990-001BMS**	SampType:	**ms**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**GW-082150-111517-**	Batch ID:	**R47322**	RunNo:	**47322**					
Prep Date:		Analysis Date:	**11/22/2017**	SeqNo:	**1509680**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	150	5.0	50.00	98.38	107	80.8	121			

Sample ID	**1711990-001BMSD**	SampType:	**msd**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**GW-082150-111517-**	Batch ID:	**R47322**	RunNo:	**47322**					
Prep Date:		Analysis Date:	**11/22/2017**	SeqNo:	**1509681**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	150	5.0	50.00	98.38	101	80.8	121	1.93	20	

Sample ID	**1711990-009BMS**	SampType:	**ms**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**GW-082150-111617-**	Batch ID:	**R47322**	RunNo:	**47322**					
Prep Date:		Analysis Date:	**11/23/2017**	SeqNo:	**1509702**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	83	5.0	50.00	34.73	96.8	80.8	121			

Sample ID	**1711990-009BMSD**	SampType:	**msd**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**GW-082150-111617-**	Batch ID:	**R47322**	RunNo:	**47322**					
Prep Date:		Analysis Date:	**11/23/2017**	SeqNo:	**1509703**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	83	5.0	50.00	34.73	95.6	80.8	121	0.698	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711990**

29-Nov-17

Client: GHD

Project: A7 Bettis

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **A47319**	RunNo: **47319**
Prep Date:	Analysis Date: **11/22/2017**	SeqNo: **1509528** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.0	70	130			
Surr: 4-Bromofluorobenzene	9.8		10.00		97.5	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.9	70	130			
Surr: Toluene-d8	9.2		10.00		91.7	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **A47319**	RunNo: **47319**
Prep Date:	Analysis Date: **11/22/2017**	SeqNo: **1509529** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.8		10.00		98.2	70	130			
Surr: Toluene-d8	9.4		10.00		94.3	70	130			

Sample ID **rb3**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **C47319**	RunNo: **47319**
Prep Date:	Analysis Date: **11/22/2017**	SeqNo: **1509555** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711990**

29-Nov-17

Client: GHD

Project: A7 Bettis

Sample ID **rb3**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **C47319**	RunNo: **47319**
Prep Date:	Analysis Date: **11/22/2017**	SeqNo: **1509555** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1711990**

29-Nov-17

Client: GHD

Project: A7 Bettis

Sample ID **rb3**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **C47319**	RunNo: **47319**
Prep Date:	Analysis Date: **11/22/2017**	SeqNo: **1509555** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.6	70	130			
Surr: Toluene-d8	10		10.00		99.5	70	130			

Sample ID **100ng lcs2**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **C47319**	RunNo: **47319**
Prep Date:	Analysis Date: **11/22/2017**	SeqNo: **1509556** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.7	70	130			
Toluene	19	1.0	20.00	0	96.2	70	130			
Chlorobenzene	19	1.0	20.00	0	95.2	70	130			
1,1-Dichloroethene	18	1.0	20.00	0	91.3	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	82.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.5	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.5	70	130			
Surr: Toluene-d8	9.9		10.00		99.1	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: GHD | Work Order Number: 1711990 | RcptNo: 1

Received By: Erin Melendrez 11/16/2017 9:02:00 AM

Completed By: Sophia Campuzano 11/20/2017 9:33:42 AM

Reviewed By: ENM 11/20/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Chain-of-Custody Record

Client: GHD Services Inc.

Mailing Address: 621 Indian School Rd Ste 200 NE Albuquerque, NM 87110

Phone #: 505 884 0672

email or Fax#: Bernard.Bockisch@ghd.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☐ Rush _____

Project Name: A7 Bettis

Project #: 082150

Project Manager: Bernard Bockisch

Sampler: Michael Gant

On Ice: ☒ Yes ☐ No

Sample Temperature: 0.4 + 0.7(CF) = 1.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1711990	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride 300				Air Bubbles (Y or N)
11/15/17	1250	GW	GW-082150-111517-MG-MW4	Plastic 1VOA	ICE	-001										X		X				
11/15/17	1312		GW-082150-111517-MG-MW-2			-002										X		X				
11/15/17	1338		GW-082150-111517-MG-MW-3			-003										X		X				
11/15/17	1353		GW-082150-111517-MG-MW-1			-004										X		X				
11/15/17	1413		GW-082150-111517-MG-MW7			-005										X		X				
11/15/17	1430		GW-082150-111517-MG-MW-6			-006										X		X				
11/15/17	1500		GW-082150-111517-MG-MW8			-007										X		X				
11/16/17	1200		GW-082150-111617-MG-MW-5			-008										X		X				
11/16/17	1225		GW-082150-111617-MG-MW-9			-009										X		X				
11/16/17	1250		GW-082150-111617-MG-MW-11			-010										X		X				
11/16/17	1330		GW-082150-111617-MG-MW-10			-011										X		X				
						~~-012~~																

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/17/17	0900			11/17/17	0900
11/17/17	1900			11/18/17	0920

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

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