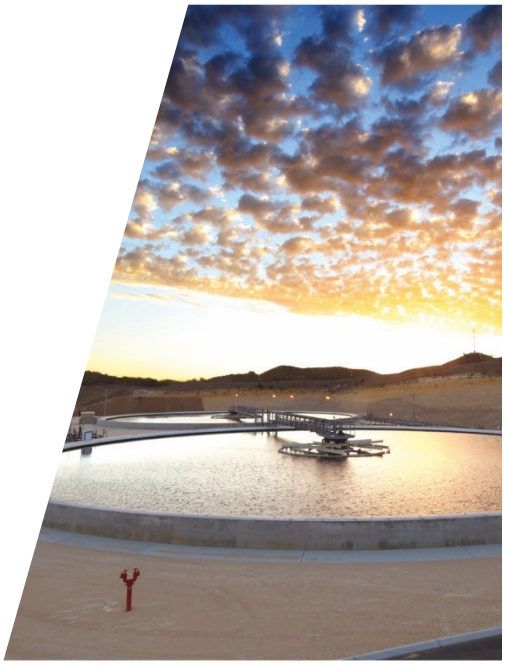
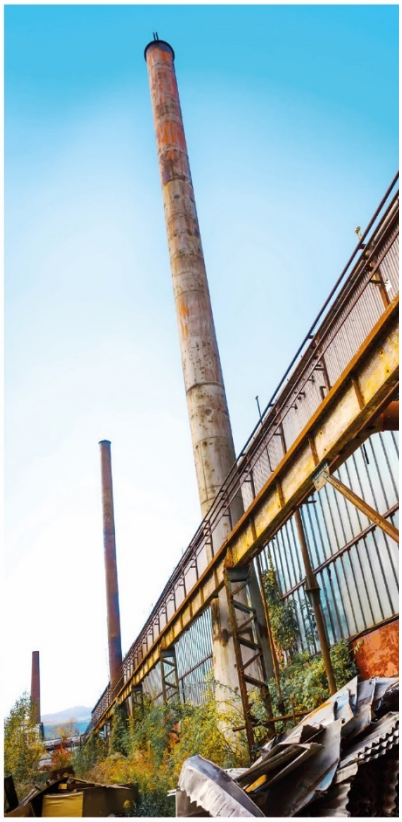


2018 Annual Groundwater Monitoring Report and 2019 Work Scope

O-6-1 4”
Lea County, New Mexico
1RP-2073

ETC Texas Pipeline, Ltd.



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Appendix Index

1. Introduction

This report presents the results of the 2018 groundwater monitoring events performed quarterly at the ETC Texas Pipeline, Ltd. (ETC), 0 6 1 4" pipeline release (Site). The Site is located within Unit J, Section 20, Township 20 South, Range 37 East, in Lea County, New Mexico (**Figure 1**). The property is owned by the New Mexico State Land Office (NMSLO). Site details can be seen on **Figure 2**.

1.1 Background

On March 13, 2017, a release of approximately 150 barrels (bbls) of natural gas/oil was reported to the State of New Mexico Oil Conservation Division (NMOCD) via Form C-141. The NMOCD then notified the NMSLO. External corrosion caused an approximate 1-inch hole to develop on a section of pipeline segment of 0-6-1 and was the cause of the release. Approximately 50 bbls of the fluids were recovered. Impacted soils were excavated and stockpiled on-site and the excavation backfilled. NMOCD release number 1RP-4643 was assigned.

The impacted area had been initially excavated to a depth of approximately 15 feet below ground surface (ft bgs) and soil samples were collected by ETC from two locations within the base of the excavation. Concentrations of total petroleum hydrocarbons (TPH) exceeded 100 mg/Kg, the Recommended Remedial Action Limit (RRAL) for the Site (based on depth to groundwater of less than 50 ft bgs at the time of assessment.

Vertical and horizontal assessment at the Site was performed on August 29, 2017 and August 30, 2017 and included the advancement of six soil borings and the installation of one groundwater monitoring well. Soil samples collected at depth from the six soil borings near the release point were found to be at concentrations below laboratory reporting limits for benzene, toluene, ethylbenzene, xylenes (BTEX) and TPH. Concentrations of TPH above RRAL were recorded in borings at the following depths: MW-1 from 5-22 ft bgs, BN-1 from 10-15 ft bgs, and BE-1 and BE-2 at 10 ft bgs. Additionally the sample collected from soil boring MW-1 from 15-17 ft bgs returned a chloride concentration of 1,100 mg/Kg, above the RRAL of 600 mg/kg for the Site.

One soil boring advanced near the release point was converted to a groundwater monitoring well, MW-1. A groundwater sample was collected from MW-1 on September 20, 2017 and analyzed for BTEX, TPH, chloride and total dissolved solids (TDS). Benzene, chloride and TDS were detected at concentrations in excess of New Mexico Water Quality Control Commission (NMWQCC) standards. A second groundwater sample was collected from MW-1 on October 17, 2017 with similar findings of above standard concentrations for these constituents.

As a result, GHD installed four additional monitoring wells and two air sparge wells at the Site between December 18, 2017 and January 31, 2018. Monitoring well MW-2 was installed to the north, MW-3 to the southeast, MW-4 to the south, and MW-5 to the west of MW-1. The air sparge wells were installed north and south of the 0-6-1 line to the west of MW-1.

Soil vapor extraction (SVE) and air sparge (AS) pilot studies were performed at the Site on

January 30, 2018 and January 31, 2018. The data and observations from the pilot studies indicate that AS/SVE is capable of removing petroleum hydrocarbons from the impacted subsurface. Based on vapor concentrations extracted during the pilot test and using conservative operating parameters, it was estimated that 75 to 90 percent of the mass currently present would be removed in less than a year of operation. However, due to difficulties accessing electricity the system was not installed in 2018.

Quarterly groundwater monitoring continued throughout 2018 and is discussed further in this report.

1.2 Groundwater Monitoring Summary

Quarterly groundwater monitoring events of 2018 were performed in January, April, July, and October. During each monitoring event, groundwater elevation were measured in monitoring wells with a cleaned and calibrated oil/water interface probe. A summary of groundwater elevations for the Site is presented in **Table 1**.

Groundwater flow direction is towards the southeast. Groundwater gradient calculated for each monitoring period was approximately 0.0018 (January), 0.0037 (April), 0.0036 (July) and 0.0025 feet per foot (ft/ft) (October). A groundwater gradient map has been prepared for each groundwater monitoring event and are included as **Figure 3**, **Figure 4**, **Figure 5**, and **Figure 6**.

1.3 Groundwater Monitoring Methodology

During the 2018 quarterly groundwater monitoring events, monitoring wells were purged of at least three well casing volumes of water or until dry using a dedicated, polyethylene bailer prior to sampling. Groundwater quality parameters including pH, temperature, oxidation reduction potential, and conductivity were collected using a calibrated multi-parameter groundwater quality meter and were recorded groundwater sampling field forms. A summary of field parameters is presented as **Table 2**.

Groundwater samples were placed in laboratory prepared bottles, packed on ice and shipped under chain-of-custody documentation to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico. Groundwater samples were analyzed for BTEX by Environmental Protection Agency (EPA) Method 8260, chloride by EPA Method 300.0, and TDS by Standard Method 2540.

1.4 Groundwater Monitoring Analytical Results

Groundwater samples collected from MW-1, MW-4 and MW-5 exceeded the NMWQCC standard for Benzene of 0.005 mg/L during the January 2018 sampling event. A consistent reduction in Benzene concentrations, however, have left only MW-4 above standard by the October 2018 event. During the most recent sampling event in October 2018 Benzene concentrations in Site wells ranged between 0.0012 (MW-5) and 0.04 mg/L (MW-4).

Groundwater samples collected from MW-1 through MW-5 have consistently exceeded the NMWQCC standard for chloride of 250 mg/L. During the most recent sampling event in October 2018, chloride concentrations in Site wells ranged between 630 mg/L (MW-1) and 750 mg/L (MW-4).

A summary of groundwater laboratory analytical results is presented in **Table 3**. Corresponding laboratory analytical reports are included as **Appendix A**.

2. Conclusions and Recommendations

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

- Groundwater collected from MW-1 through MW-5, has exceeded the NMWQCC standard for chlorides.
- Groundwater collected from MW-4 exceeded the NMWQCC standard for Benzene.
- Without the use of SVE in 2018, TPH in soil has not been addressed.

3. Recommendations and 2019 Work Scope

Due to the above conclusions, GHD recommends:

- The continuation of quarterly groundwater monitoring.
- Mobile MDPE events in monitoring wells MW-1 and MW-2

3.1 2019 Groundwater Monitoring

GHD proposes to perform quarterly gauging of fluid levels and groundwater monitoring of the five Site wells in 2019. An oil/water interface probe will be used to measure fluid levels in each well. Before and after each use, the oil/water interface probe will be cleaned with an Alconox®/deionized water solution and rinsed with deionized water.

Monitoring wells will be purged and sampled using a dedicated, polyethylene bailers. Wells will be purged until field parameters including groundwater temperature, pH, and conductivity stabilize to within 10 percent or until three well volumes have been removed. Field parameters will be collected using an appropriate multi-parameter groundwater quality meter. Purge water generated during the monitoring event will be transported to secondary containment at the House Compressor Station for evaporation.

Following collection, groundwater samples will be labeled, placed on ice, and submitted to HEAL for analyses of BTEX by EPA Method 8021B, TDS by Standard Method 2540, and chloride by EPA Method 300.0.

3.2 Mobile Dual Phase Extraction Events

MDPE is a process combining soil vapor extraction (SVE) with groundwater depression to maximize mass removal of liquid and vapor phase hydrocarbons. A submersible pump is used to simultaneously remove dissolved-phase hydrocarbon impacted groundwater, induce a hydraulic gradient toward the extraction well by creating a localized cone of depression of the water table that in turn exposes the capillary fringe, or smear zone, to SVE. Recovered liquids are collected for later

disposal by ETC. Recovered vapors are used as fuel and burned in the MDPE internal combustion engine (ICE). Power generated by the ICE is used to create the induced vacuum for SVE.

Three events are proposed for the remainder of 2019. Prior to event mobilization a specific event strategy will be discussed based on the most recent evaluation of groundwater quality and gauging data for the Site.

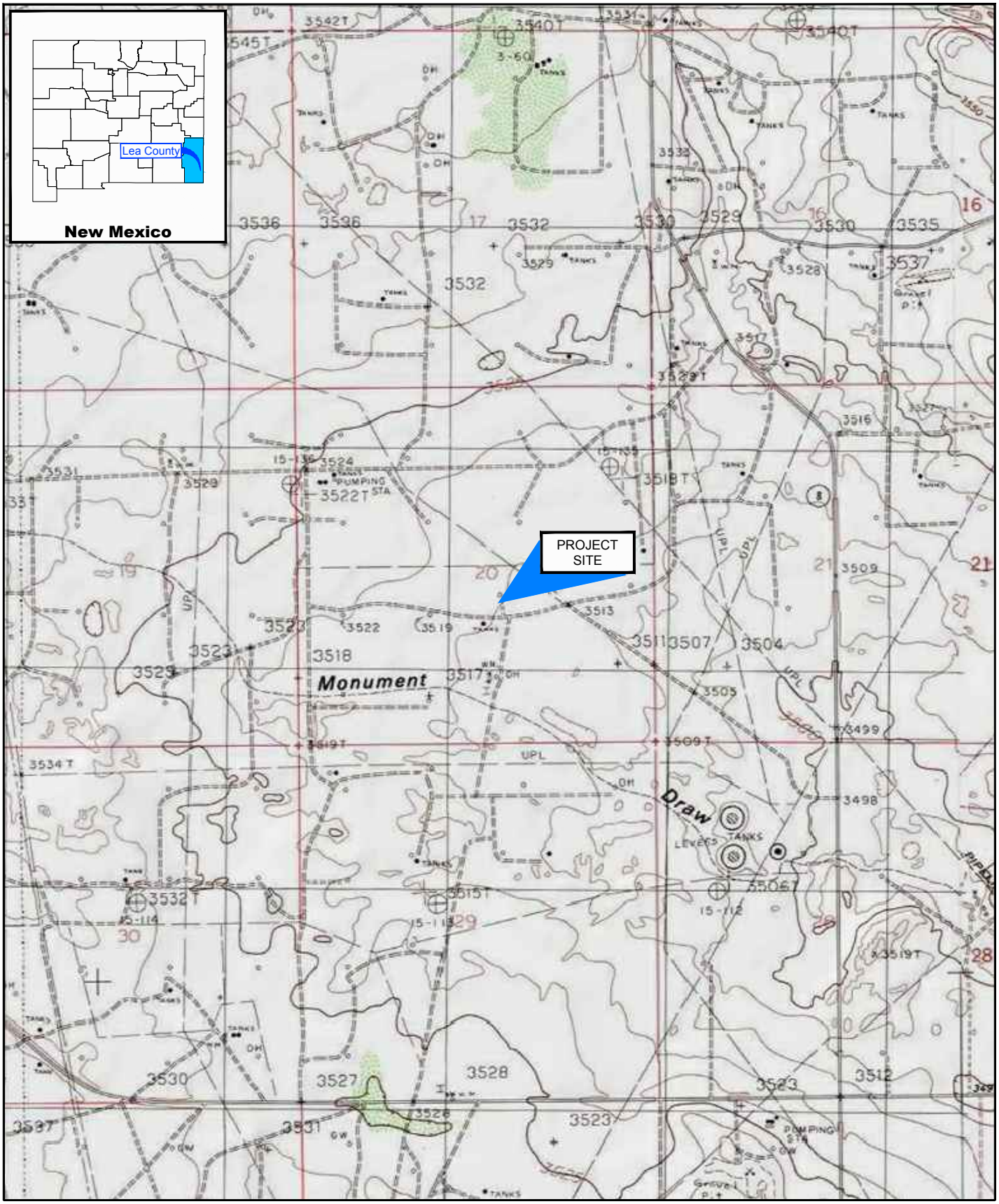
All of Which is Respectfully Submitted,

GHD

Christine Mathews
Project Manager

Charles Neligh
Project Scientist

Figures



Source: USGS 7.5 Minute Quad "Monument South and Hobbs SW, New Mexico"

Lat/Long: 32.557054° North, 103.27255° West

0 1000 2000ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

ETC TEXAS PIPELINE, LTD.
LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

11135241-2018

Mar 6, 2019

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg

Source: Image © 2016 Google - Imagery Date: November 2, 2017

Lat/Long: 32.557054° North, 103.27255° West

0 10 30ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

ETC TEXAS PIPELINE, LTD.
LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

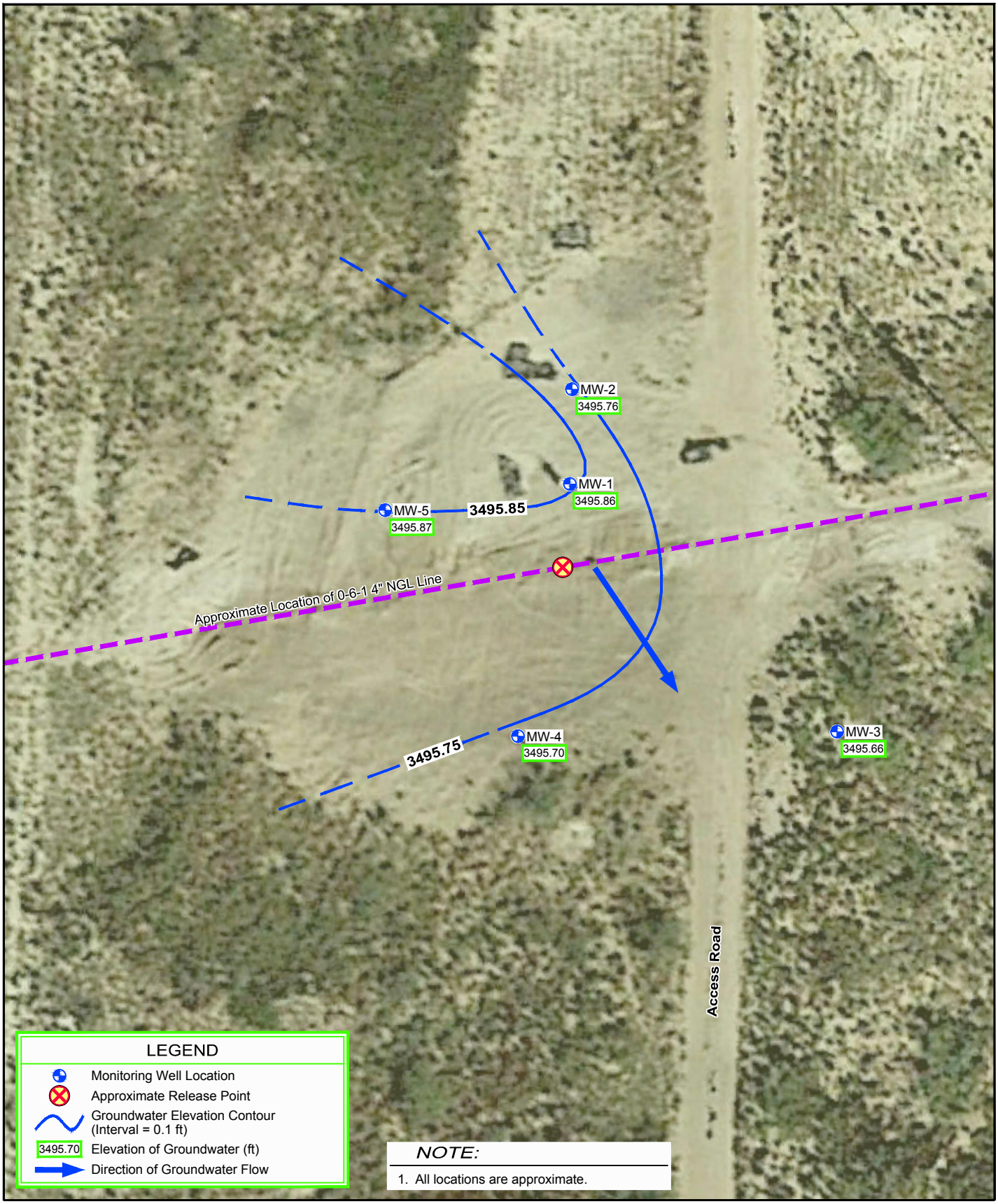
SOIL BORING AND MONITORING WELL LOCATIONS

11135241-2018

Mar 6, 2019

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg



Source: Image © 2016 Google - Imagery Date: November 2, 2017

Lat/Long: 32.557054° North, 103.27255° West

0 10 30ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

GHD

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LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

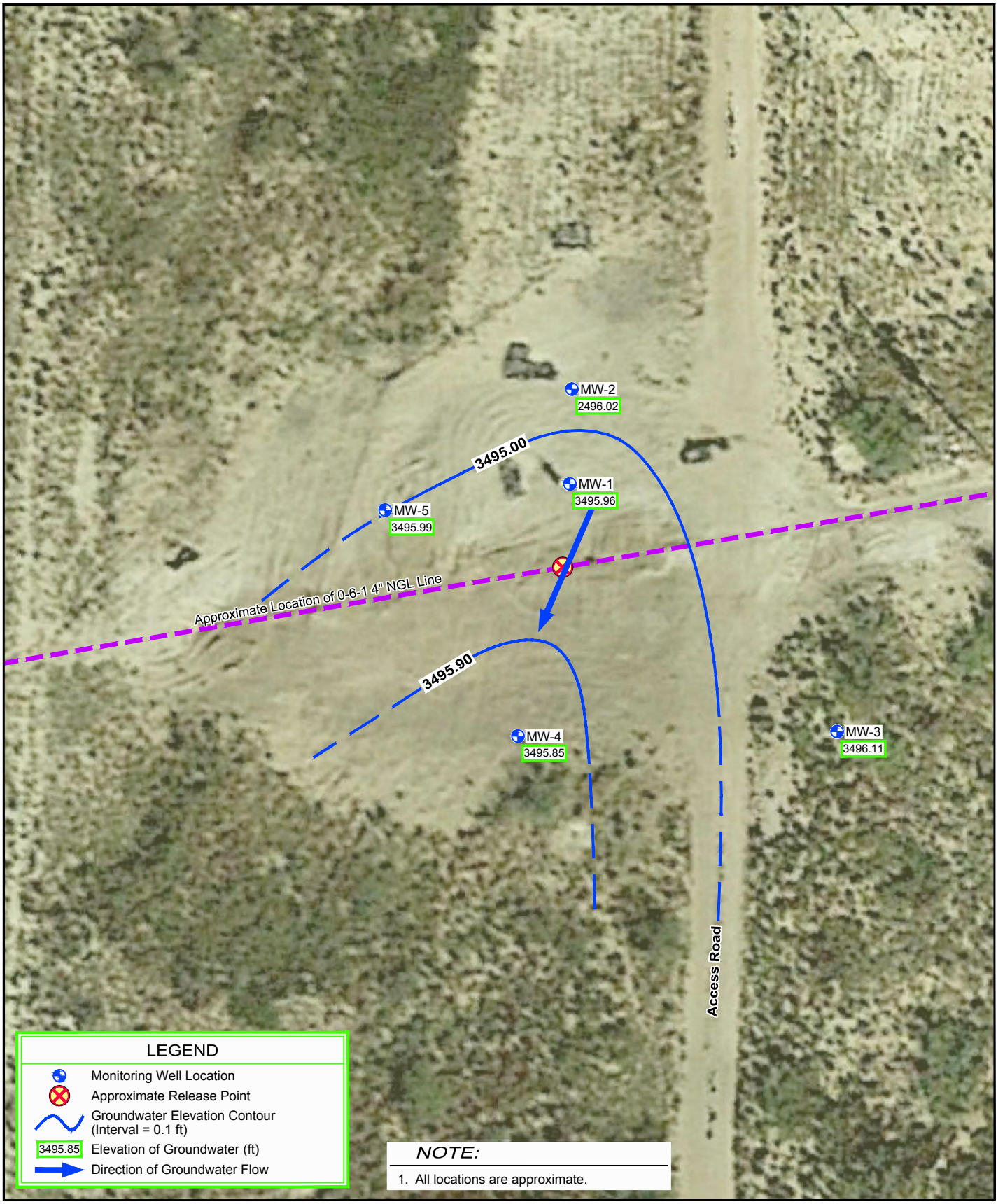
JANUARY 2018 GROUNDWATER POTENTIOMETRIC SURFACE MAP

11135241-2018

Mar 6, 2019

FIGURE 3

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg



Source: Image © 2016 Google - Imagery Date: November 2, 2017

Lat/Long: 32.557054° North, 103.27255° West

0 10 30ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

ETC TEXAS PIPELINE, LTD.
LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

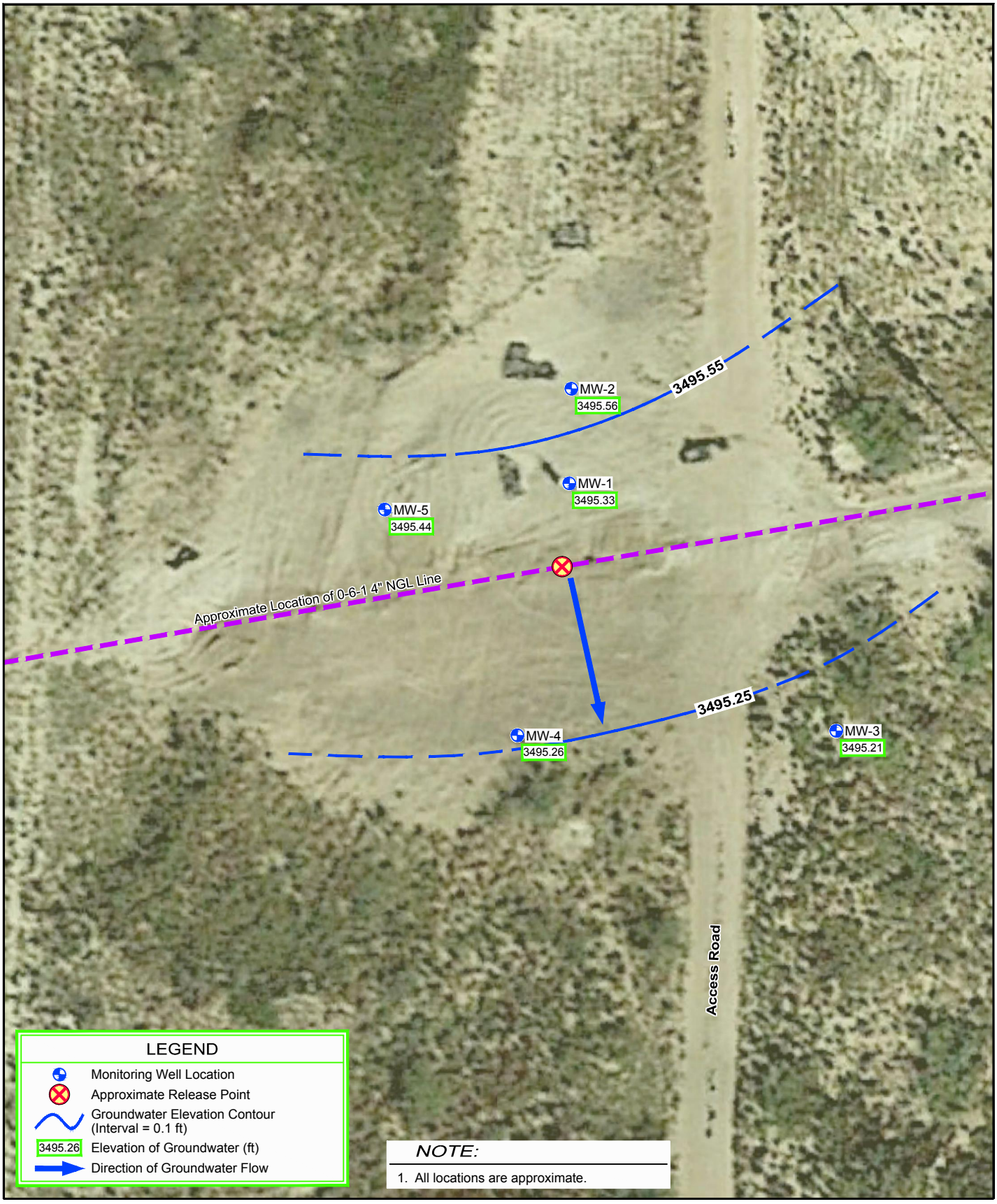
APRIL 2018 GROUNDWATER POTENTIOMETRIC SURFACE MAP

11135241-2018

Mar 6, 2019

FIGURE 4

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg



Source: Image © 2016 Google - Imagery Date: November 2, 2017

Lat/Long: 32.557054° North, 103.27255° West

0 10 30ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

ETC TEXAS PIPELINE, LTD.
LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

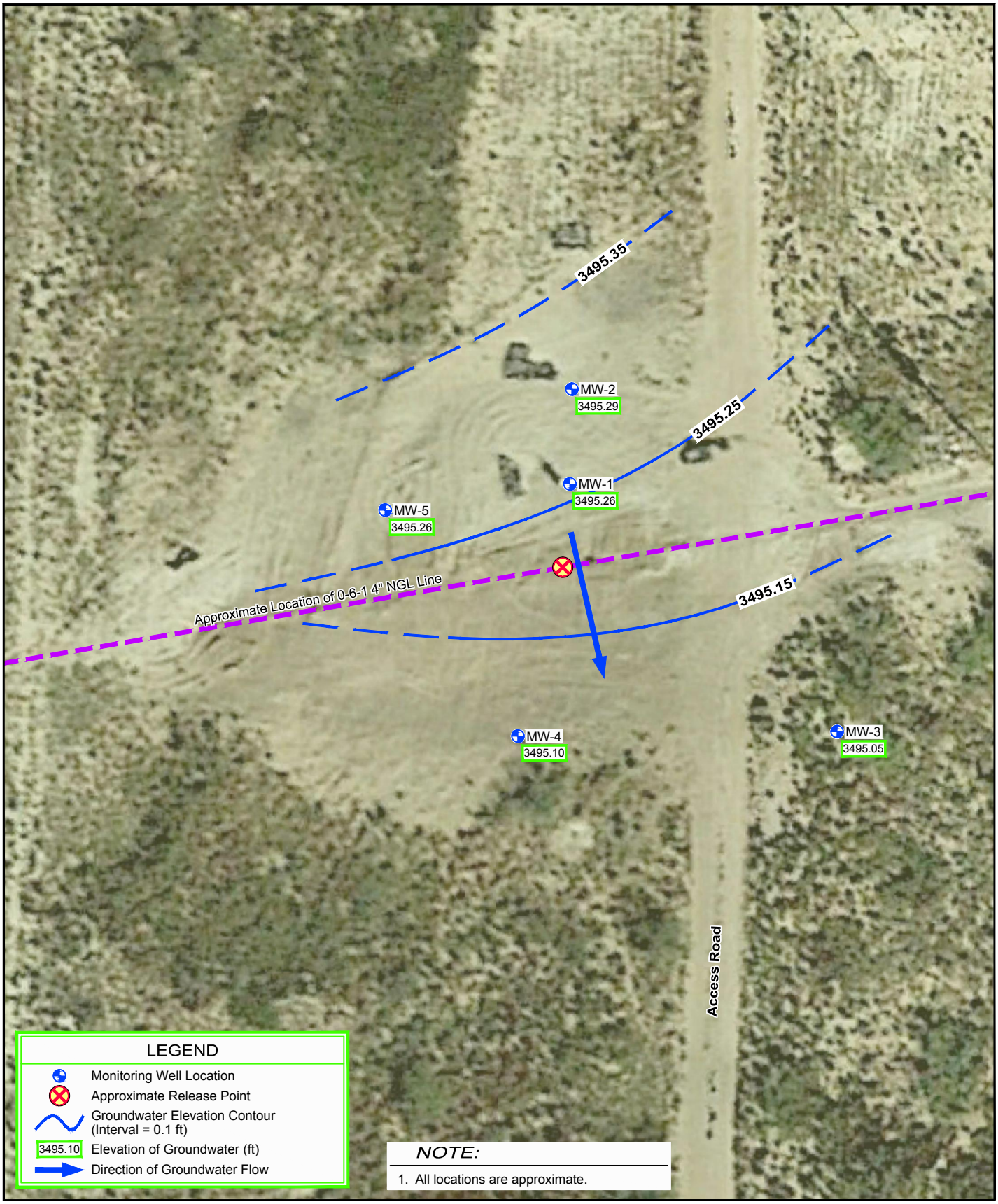
JULY 2018 GROUNDWATER POTENTIOMETRIC SURFACE MAP

11135241-2018

Mar 6, 2019

FIGURE 5

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg



Source: Image © 2016 Google - Imagery Date: November 2, 2017

Lat/Long: 32.557054° North, 103.27255° West

0 10 30ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

ETC TEXAS PIPELINE, LTD.
LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

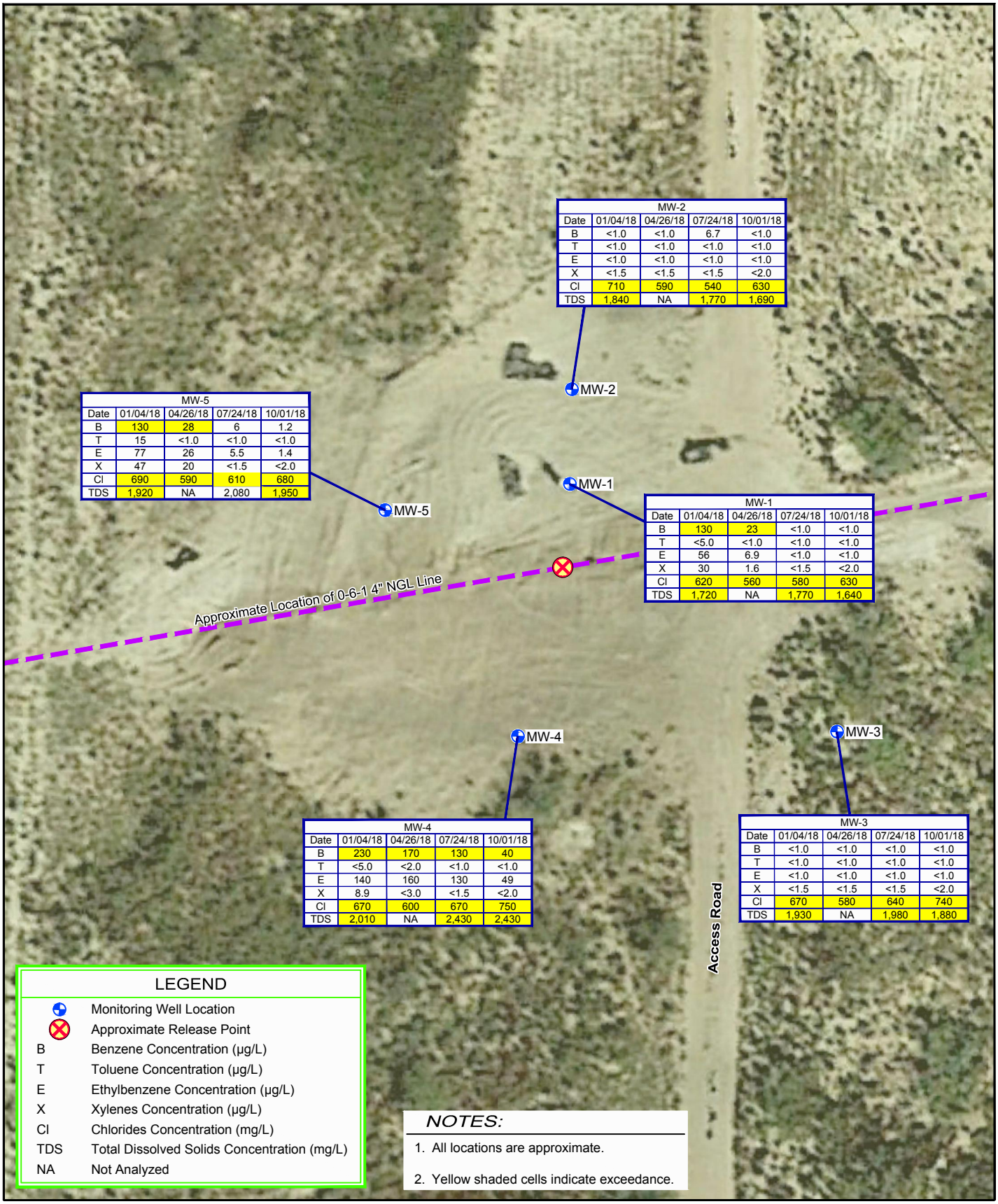
OCTOBER 2018 GROUNDWATER POTENTIOMETRIC SURFACE MAP

11135241-2018

Mar 6, 2019

FIGURE 6

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg



MW-2				
Date	01/04/18	04/26/18	07/24/18	10/01/18
B	<1.0	<1.0	6.7	<1.0
T	<1.0	<1.0	<1.0	<1.0
E	<1.0	<1.0	<1.0	<1.0
X	<1.5	<1.5	<1.5	<2.0
Cl	710	590	540	630
TDS	1,840	NA	1,770	1,690

MW-5				
Date	01/04/18	04/26/18	07/24/18	10/01/18
B	130	28	6	1.2
T	15	<1.0	<1.0	<1.0
E	77	26	5.5	1.4
X	47	20	<1.5	<2.0
Cl	690	590	610	680
TDS	1,920	NA	2,080	1,950

MW-1				
Date	01/04/18	04/26/18	07/24/18	10/01/18
B	130	23	<1.0	<1.0
T	<5.0	<1.0	<1.0	<1.0
E	56	6.9	<1.0	<1.0
X	30	1.6	<1.5	<2.0
Cl	620	560	580	630
TDS	1,720	NA	1,770	1,640

MW-4				
Date	01/04/18	04/26/18	07/24/18	10/01/18
B	230	170	130	40
T	<5.0	<2.0	<1.0	<1.0
E	140	160	130	49
X	8.9	<3.0	<1.5	<2.0
Cl	670	600	670	750
TDS	2,010	NA	2,430	2,430

MW-3				
Date	01/04/18	04/26/18	07/24/18	10/01/18
B	<1.0	<1.0	<1.0	<1.0
T	<1.0	<1.0	<1.0	<1.0
E	<1.0	<1.0	<1.0	<1.0
X	<1.5	<1.5	<1.5	<2.0
Cl	670	580	640	740
TDS	1,930	NA	1,980	1,880

LEGEND

	Monitoring Well Location
	Approximate Release Point
B	Benzene Concentration (µg/L)
T	Toluene Concentration (µg/L)
E	Ethylbenzene Concentration (µg/L)
X	Xylenes Concentration (µg/L)
Cl	Chlorides Concentration (mg/L)
TDS	Total Dissolved Solids Concentration (mg/L)
NA	Not Analyzed

NOTES:

1. All locations are approximate.
2. Yellow shaded cells indicate exceedance.

Source: Image © 2016 Google - Imagery Date: February 1, 2017

Lat/Long: 32.557054° North, 103.27255° West

0 10 30ft

Coordinate System:
NAD 1983 (2011) StatePlane-
New Mexico East (US Feet)

GHD

ETC TEXAS PIPELINE, LTD.
LEA COUNTY, NEW MEXICO
0-6-1 4" LINE RELEASE

GROUNDWATER CONCENTRATION MAP

11135241-2018

Mar 6, 2019

FIGURE 7

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135241-ETC-S-U-6 Six Inch Line Release\11135241-2018\11135241-2018(000)\11135241-2018(000)GN-DL001.dwg

Tables

Table 1
Monitoring Well Specifications and Groundwater Elevations
O-6-1 4”
Lea County, New Mexico
ETC Texas Pipeline, Ltd.

Well	Date	TOC Elevation (ft AMSL)	Depth to Water (ft below TOC)	GW Elevation (ft AMSL)
MW-1	9/20/2017	3520.293	24.70	3495.593
	10/17/2017		24.60	3495.693
	1/4/2018		24.43	3495.863
	4/2/2018		24.34	3495.953
	4/12/2018		24.33	3495.963
	4/26/2018		24.64	3495.653
	7/24/2018		24.96	3495.333
	10/1/2018		25.03	3495.263
MW-2	1/4/2018	3520.422	24.53	3495.763
	4/2/2018		24.41	3495.883
	4/12/2018		24.40	3496.022
	4/26/2018		24.53	3495.892
	7/24/2018		24.86	3495.562
	10/1/2018		25.13	3495.292
MW-3	1/4/2018	3520.451	24.79	3495.661
	4/2/2018		24.34	3496.111
	4/12/2018		24.34	3496.111
	4/26/2018		24.77	3495.681
	7/24/2018		25.24	3495.211
	10/1/2018		25.40	3495.051
MW-4	1/4/2018	3520.350	24.65	3495.700
	4/2/2018		24.54	3495.810
	4/12/2018		24.50	3495.850
	4/26/2018		24.42	3495.930
	7/24/2018		25.09	3495.260
	10/1/2018		25.25	3495.100
MW-5	1/4/2018	3520.572	24.70	3495.872
	4/2/2018		24.58	3495.992
	4/12/2018		24.56	3496.012
	4/26/2018		24.68	3495.892
	7/24/2018		25.13	3495.442
	10/1/2018		25.31	3495.262

Table 2
Field Parameters Summary
O-6-1 4”
Lea County, New Mexico
ETC Texas Pipeline, Ltd.

Well ID	Sample Date	Temperature (°C)	pH	Conductivity (µS/cm)	DO (mg/L)	ORP (mV)
MW-1	9/20/2017	19.79	6.83	2302	0.42	-151.5
	10/17/2017	19.66	7.11	2587	1.88	-192.3
	1/4/2018	19.11	6.75	2605	2.59	-241.3
	4/12/2018	18.8	7.32	2841	9.37	15.8
	4/26/2018	17.86	7.18	3639	--	--
	7/24/2018	17.62	7.06	2594	2.95	--
	10/1/2018	22.01	7.51	2336	0.86	11.4
MW-2	1/4/2018	19.07	7.08	2627	2.9	-191.8
	4/12/2018	18.08	7.34	2955	6.98	-50.6
	4/26/2018	17.58	7.27	3729	--	--
	7/24/2018	18.15	6.63	2560	3.13	--
	10/1/2018	23.29	7.68	2328	1.32	59.8
MW-3	1/4/2018	19.2	7.23	2638	3.67	-138
	4/12/2018	18.36	7.31	2979	10.99	-61.6
	4/26/2018	18	7.26	3880	--	--
	7/24/2018	17.9	7.12	2745	2.22	--
	10/1/2018	21..82	7.66	2572	1.85	54.5
MW-4	1/4/2018	19.75	7.04	3081	2.15	-277.2
	4/12/2018	18.37	7.16	3688	3.78	-219.5
	4/26/2018	18.2	7.06	4750	--	--
	7/24/2018	18.6	7.01	3632	2.55	--
	10/1/2018	22.68	7.42	3213	1.09	-183.4
MW-5	1/4/2018	19.45	7.04	2955	2.06	-275.2
	4/12/2018	18.31	7.29	3131	8.93	-161.1
	4/26/2018	17.99	7.29	4024	--	--
	7/24/2018	18.31	7.06	2953	6.17	--
	10/1/2018	21.59	7.39	2636	1.35	-60.4

Notes:
ºC = degress celcius
uS/cm = microsiemens per centimeter
mg/L = milligrams per liter
mV = millivolts
DO = dissolved oxygen
ORP = oxitation reduction potential

Table 3
Groundwater Analytical Results Summary
O-6-1 4”
Lea County, New Mexico
ETC Texas Pipeline, Ltd.

Monitoring Well	Date	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Chlorides (mg/L)	TDS (mg/L)
NMWQCC Standards		**5**	**1000**	**700**	**620**	**250**	**1000**
MW-1	9/20/2017	**200**	77	87	87	**580**	**2010**
	10/17/2017	**150**	50	62	68	**560**	**1620**
	1/4/2018	**130**	<5.0	56	30	**620**	**1720**
	4/26/2018	**23**	<1.0	6.9	1.6	**560**	NA
	7/24/2018	<1.0	<1.0	<1.0	<1.5	**580**	**1770**
	10/1/2018	<1.0	<1.0	<1.0	< 2.0	**630**	**1640**
MW-2	1/4/2018	<1.0	<1.0	<1.0	<1.5	**710**	**1840**
	4/26/2018	<1.0	<1.0	<1.0	<1.5	**590**	**NA**
	7/24/2018	6.7	<1.0	<1.0	<1.5	**540**	**1770**
	10/1/2018	<1.0	<1.0	<1.0	< 2.0	**630**	**1690**
MW-3	1/4/2018	<1.0	<1.0	<1.0	<1.5	**670**	**1930**
	4/26/2018	<1.0	<1.0	<1.0	<1.5	**280**	NA
	7/24/2018	<1.0	<1.0	<1.0	<1.5	**640**	**1980**
	10/1/2018	<1.0	<1.0	<1.0	< 2.0	**740**	**1880**
MW-4	1/4/2018	**320**	<1.0	140	8.9	**670**	**2010**
	4/26/2018	**170**	<1.0	160	<1.5	**600**	NA
	7/24/2018	**130**	<1.0	130	<1.5	**670**	**2430**
	10/1/2018	**40**	<1.0	49	< 2.0	**750**	**2430**
MW-5	1/4/2018	**130**	15	77	47	**690**	**1920**
	4/26/2018	**28**	<1.0	26	20	**590**	NA
	7/24/2018	**6**	<1.0	5.5	<1.5	**610**	**2080**
	10/1/2018	1.2	<1.0	1.4	< 2.0	**680**	**1950**

Notes:

TDS = Total dissolved solids
NE = Not established
NMWQCC = New Mexico Water Quality Control Commission
mg/L = Milligrams per liter (parts per million)
ug/L = Micrograms per liter (parts per billion)
NA = Not analyzed
BOLD = Concentrations that exceed the NMWQCC groundwater quality standard

Appendices

Appendix A
Groundwater Laboratory Analytical Reports

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

February 12, 2018

Bernie Bockisch

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

RE: 0-6-1 SU 6 OrderNo.: 1802128

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 2 sample(s) on 2/2/2018 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

Analytical Report
Lab Order: **1802128**
Date Reported: **2/12/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: 0-6-1 SU 6
Lab Order: 1802128

Lab ID: 1802128-001 **Collection Date:** 1/30/2018 2:38:00 PM
Client Sample ID: A-11135241-013018-BB-1438 **Matrix:** AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	4400	250		µg/L	50	2/5/2018 11:38:37 AM	G48902
Surr: BFB	170	80.2-145	S	%Rec	50	2/5/2018 11:38:37 AM	G48902
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	17	1.0		µg/L	10	2/8/2018 2:41:00 PM	SL4899
Toluene	5.1	1.0		µg/L	10	2/8/2018 2:41:00 PM	SL4899
Ethylbenzene	7.3	1.0		µg/L	10	2/8/2018 2:41:00 PM	SL4899
Naphthalene	ND	2.0		µg/L	10	2/8/2018 2:41:00 PM	SL4899
1-Methylnaphthalene	ND	4.0		µg/L	10	2/8/2018 2:41:00 PM	SL4899
2-Methylnaphthalene	ND	4.0		µg/L	10	2/8/2018 2:41:00 PM	SL4899
Xylenes, Total	11	1.5		µg/L	10	2/8/2018 2:41:00 PM	SL4899
Surr: 1,2-Dichloroethane-d4	80.1	70-130		%Rec	10	2/8/2018 2:41:00 PM	SL4899
Surr: 4-Bromofluorobenzene	80.8	70-130		%Rec	10	2/8/2018 2:41:00 PM	SL4899
Surr: Dibromofluoromethane	84.6	70-130		%Rec	10	2/8/2018 2:41:00 PM	SL4899
Surr: Toluene-d8	88.7	70-130		%Rec	10	2/8/2018 2:41:00 PM	SL4899

Lab ID: 1802128-002 **Collection Date:** 1/30/2018 4:03:00 PM
Client Sample ID: A-11135241-013018-BB-1603 **Matrix:** AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	3600	250		µg/L	50	2/5/2018 12:01:28 PM	G48902
Surr: BFB	161	80.2-145	S	%Rec	50	2/5/2018 12:01:28 PM	G48902
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **RAA**	
Benzene	14	1.0		µg/L	10	2/8/2018 3:06:00 PM	SL4899
Toluene	4.0	1.0		µg/L	10	2/8/2018 3:06:00 PM	SL4899
Ethylbenzene	6.3	1.0		µg/L	10	2/8/2018 3:06:00 PM	SL4899
Naphthalene	ND	2.0		µg/L	10	2/8/2018 3:06:00 PM	SL4899
1-Methylnaphthalene	ND	4.0		µg/L	10	2/8/2018 3:06:00 PM	SL4899
2-Methylnaphthalene	ND	4.0		µg/L	10	2/8/2018 3:06:00 PM	SL4899
Xylenes, Total	8.9	1.5		µg/L	10	2/8/2018 3:06:00 PM	SL4899
Surr: 1,2-Dichloroethane-d4	79.2	70-130		%Rec	10	2/8/2018 3:06:00 PM	SL4899
Surr: 4-Bromofluorobenzene	80.5	70-130		%Rec	10	2/8/2018 3:06:00 PM	SL4899
Surr: Dibromofluoromethane	85.2	70-130		%Rec	10	2/8/2018 3:06:00 PM	SL4899
Surr: Toluene-d8	88.4	70-130		%Rec	10	2/8/2018 3:06:00 PM	SL4899

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#: **1802128**

12-Feb-18

Client: GHD

Project: 0-6-1 SU 6

Sample ID **1802128-001ADUP** SampType: **DUP** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **A-11135241-013018-** Batch ID: **G48902** RunNo: **48902**

Prep Date: Analysis Date: **2/5/2018** SeqNo: **1573646** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	4200	250						5.18	20	
Surr: BFB	180000		100000		175	80.2	145	0	0	S

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#: **1802128**

12-Feb-18

Client: GHD

Project: 0-6-1 SU 6

Sample ID	**1802128-001ADUP**	SampType:	**DUP**	TestCode:	**EPA Method 8260B: Volatiles Short List**
Client ID:	**A-11135241-013018-**	Batch ID:	**SL48997**	RunNo:	**48997**
Prep Date:		Analysis Date:	**2/8/2018**	SeqNo:	**1576926** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	14	1.0						14.5	20	
Toluene	4.3	1.0						16.2	20	
Ethylbenzene	6.2	1.0						15.8	20	
Naphthalene	ND	2.0						0	20	
1-Methylnaphthalene	ND	4.0						0	20	
2-Methylnaphthalene	ND	4.0						0	20	
Xylenes, Total	8.8	1.5						18.0	20	
Surr: 1,2-Dichloroethane-d4	8.0		10.00		79.8	70	130	0	0	
Surr: 4-Bromofluorobenzene	8.1		10.00		80.5	70	130	0	0	
Surr: Dibromofluoromethane	8.4		10.00		83.9	70	130	0	0	
Surr: Toluene-d8	8.9		10.00		88.9	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
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: 1802128 | RcptNo: 1

Received By: **Anne Thorne** 2/2/2018 2:09:00 PM

Completed By: **Anne Thorne** 2/2/2018 2:16:03 PM

Reviewed By: JC 2.2.18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

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

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Chain-of-Custody Record

Client: GHD SERVICES INC.

Mailing Address: 6121 INDIAN SCHOOL RD SUITE 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: O-6-1 (SW6)

Project #: 11135241

Project Manager: BERNARD BOCKISCH

Sampler: BERNARD BOCKISCH

On Ice: ☐ Yes ☑ No

Sample Temperature:

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. 1802128	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) BTEX/MTBE only	8270 (Semi-VOA)					Air Bubbles (Y or N)
1/30/18	1438	AIR	A-11135241-013018-BB-1438	TEDLAR	NONE	-001			✓							✓						
1/30/18	1603	AIR	A-11135241-013018-BB-1603	TEDLAR	NONE	-002			✓							✓						

Date: 1/2/18 Time: 14:08 Relinquished by: [signature]

Received by: [signature] Date: 02/02/18 Time: 1409

Date: Time: Relinquished by:

Received by: Date: Time:

Remarks:

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

May 08, 2018

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

RE: 0-6-1 OrderNo.: 1804D71

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/27/2018 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: 0-6-1
Lab Order: 1804D71

Lab ID: 1804D71-001 **Collection Date:** 4/26/2018 9:53:00 AM
Client Sample ID: W-11135241-42618-BB-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	560	50	*	mg/L	100	5/6/2018 12:52:03 PM	R51075
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	23	1.0		µg/L	1	5/4/2018 12:28:30 AM	C51035
Toluene	ND	1.0		µg/L	1	5/4/2018 12:28:30 AM	C51035
Ethylbenzene	6.9	1.0		µg/L	1	5/4/2018 12:28:30 AM	C51035
Xylenes, Total	1.6	1.5		µg/L	1	5/4/2018 12:28:30 AM	C51035
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	5/4/2018 12:28:30 AM	C51035
Surr: Toluene-d8	90.0	70-130		%Rec	1	5/4/2018 12:28:30 AM	C51035

Lab ID: 1804D71-002 **Collection Date:** 4/26/2018 9:25:00 AM
Client Sample ID: W-11135241-42618-BB-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	590	50	*	mg/L	100	5/6/2018 1:41:42 PM	R51075
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	5/4/2018 1:14:29 AM	C51035
Toluene	ND	1.0		µg/L	1	5/4/2018 1:14:29 AM	C51035
Ethylbenzene	ND	1.0		µg/L	1	5/4/2018 1:14:29 AM	C51035
Xylenes, Total	ND	1.5		µg/L	1	5/4/2018 1:14:29 AM	C51035
Surr: 4-Bromofluorobenzene	118	70-130		%Rec	1	5/4/2018 1:14:29 AM	C51035
Surr: Toluene-d8	96.8	70-130		%Rec	1	5/4/2018 1:14:29 AM	C51035

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: 0-6-1
Lab Order: 1804D71

Lab ID: 1804D71-003 **Collection Date:** 4/26/2018 9:35:00 AM
Client Sample ID: W-11135241-42618-BB-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	580	50	*	mg/L	100	5/6/2018 2:06:32 PM	R51075
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	5/4/2018 1:37:34 AM	C51035
Toluene	ND	1.0		µg/L	1	5/4/2018 1:37:34 AM	C51035
Ethylbenzene	ND	1.0		µg/L	1	5/4/2018 1:37:34 AM	C51035
Xylenes, Total	ND	1.5		µg/L	1	5/4/2018 1:37:34 AM	C51035
Surr: 4-Bromofluorobenzene	113	70-130		%Rec	1	5/4/2018 1:37:34 AM	C51035
Surr: Toluene-d8	97.2	70-130		%Rec	1	5/4/2018 1:37:34 AM	C51035

Lab ID: 1804D71-004 **Collection Date:** 4/26/2018 10:00:00 AM
Client Sample ID: W-11135241-42618-BB-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	600	50	*	mg/L	100	5/6/2018 2:31:21 PM	R51075
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	170	2.0		µg/L	2	5/4/2018 3:35:19 PM	C51035
Toluene	ND	2.0		µg/L	2	5/4/2018 3:35:19 PM	C51035
Ethylbenzene	160	2.0		µg/L	2	5/4/2018 3:35:19 PM	C51035
Xylenes, Total	ND	3.0		µg/L	2	5/4/2018 3:35:19 PM	C51035
Surr: 4-Bromofluorobenzene	121	70-130		%Rec	2	5/4/2018 3:35:19 PM	C51035
Surr: Toluene-d8	96.1	70-130		%Rec	2	5/4/2018 3:35:19 PM	C51035

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: 0-6-1
Lab Order: 1804D71

Lab ID: 1804D71-005 **Collection Date:** 4/26/2018 9:44:00 AM
Client Sample ID: W-11135241-42618-BB-5 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	590	50	*	mg/L	100	5/6/2018 2:56:10 PM	R51075
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	28	1.0		µg/L	1	5/4/2018 3:58:29 PM	C51035
Toluene	ND	1.0		µg/L	1	5/4/2018 3:58:29 PM	C51035
Ethylbenzene	26	1.0		µg/L	1	5/4/2018 3:58:29 PM	C51035
Xylenes, Total	20	1.5		µg/L	1	5/4/2018 3:58:29 PM	C51035
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	5/4/2018 3:58:29 PM	C51035
Surr: Toluene-d8	97.8	70-130		%Rec	1	5/4/2018 3:58:29 PM	C51035

Lab ID: 1804D71-006 **Collection Date:** 4/26/2018
Client Sample ID: W-11135241-42618-BB-DUP **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	710	50	*	mg/L	100	5/6/2018 3:20:59 PM	R51075
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	160	2.0		µg/L	2	5/4/2018 4:21:31 PM	C51035
Toluene	ND	2.0		µg/L	2	5/4/2018 4:21:31 PM	C51035
Ethylbenzene	160	2.0		µg/L	2	5/4/2018 4:21:31 PM	C51035
Xylenes, Total	ND	3.0		µg/L	2	5/4/2018 4:21:31 PM	C51035
Surr: 4-Bromofluorobenzene	116	70-130		%Rec	2	5/4/2018 4:21:31 PM	C51035
Surr: Toluene-d8	98.3	70-130		%Rec	2	5/4/2018 4:21:31 PM	C51035

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1804D71**
08-May-18

Client: GHD
Project: 0-6-1

Sample ID **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R51075**	RunNo: **51075**
Prep Date:	Analysis Date: **5/6/2018**	SeqNo: **1659029** 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: **R51075**	RunNo: **51075**
Prep Date:	Analysis Date: **5/6/2018**	SeqNo: **1659030** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.7	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
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#: **1804D71**

08-May-18

Client: GHD

Project: 0-6-1

Sample ID **100ng lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **C51035**	RunNo: **51035**
Prep Date:	Analysis Date: **5/3/2018**	SeqNo: **1657258** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.4	80	120			
Toluene	20	1.0	20.00	0	99.4	80	120			
Ethylbenzene	20	1.0	20.00	0	102	80	120			
Xylenes, Total	60	1.5	60.00	0	100	80	120			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.3	70	130			
Surr: Toluene-d8	9.5		10.00		95.5	70	130			

Sample ID **rb2**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **C51035**	RunNo: **51035**
Prep Date:	Analysis Date: **5/3/2018**	SeqNo: **1657269** 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								
Xylenes, Total	ND	1.5								
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Toluene-d8	9.7		10.00		96.7	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: 1804D71 | RcptNo: 1

Received By: Erin Melendrez 4/27/2018 9:00:00 AM

Completed By: Michelle Garcia 4/27/2018 10:19:01 AM Michelle Garcia

Reviewed By: 04/27/18 Labeled by: ENM

30 04/31/18

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☑ No ☐ No VOA Vials ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. 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: 04/30/18

Special Handling (if applicable)

15. 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:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.8	Good	Yes			

Chain-of-Custody Record

Client: GHD SERVICES INC

Mailing Address: ON FILE

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: O-6-1

Project #: 1113541

Project Manager: BERNARD BOCKISCH

Sampler: BERNARD BOCKISCH

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.5

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. 1804071	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) BTEX	8270 (Semi-VOA)	CHLORIDE 300				Air Bubbles (Y or N)
4/26/18	9:53	WATER	W-1113541-4268B-BB-1	3xVOAs 1xDISMLPLY	HCL NONE	001										✓		✓				
4/26/18	9:25	WATER	W-1113541-4268B-BB-2	11	11	002										✓		✓				
4/26/18	9:35	WATER	W-1113541-4268B-BB-3	11	11	003										✓		✓				
4/26/18	10:00	WATER	W-1113541-4268B-BB-4	11	11	004										✓		✓				
4/26/18	9:44	WATER	W-1113541-4268B-BB-5	11	11	005										✓		✓				
4/26/18	—	WATER	W-1113541-4268B-BB-DUP		11	006										✓		✓				

Date:	Time:	Relinquished by:	Received by:	Date Time	Remarks:
4/26/18	4:58	Bernard Bockisch		4-26-18 5:01	
4-27-18	9:00			4/27/18 0900	

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

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

August 07, 2018

Alan Brandon

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

RE: 0 6 1 4 Line Release OrderNo.: 1807E25

Dear Alan Brandon:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/26/2018 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD **Lab Order:** 1807E25
Project: 0 6 1 4 Line Release

Lab ID: 1807E25-001 **Collection Date:** 7/24/2018 7:27:00 PM
Client Sample ID: GW-11135241-2018-072418-PL-MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	580	50	*	mg/L	100	7/30/2018 3:34:08 PM	R53088
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1770	20.0	*	mg/L	1	7/31/2018 4:17:00 PM	39483
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	7/30/2018 6:22:06 PM	A53058
Toluene	ND	1.0		µg/L	1	7/30/2018 6:22:06 PM	A53058
Ethylbenzene	ND	1.0		µg/L	1	7/30/2018 6:22:06 PM	A53058
Xylenes, Total	ND	1.5		µg/L	1	7/30/2018 6:22:06 PM	A53058
Surr: 4-Bromofluorobenzene	113	70-130		%Rec	1	7/30/2018 6:22:06 PM	A53058
Surr: Toluene-d8	88.1	70-130		%Rec	1	7/30/2018 6:22:06 PM	A53058

Lab ID: 1807E25-002 **Collection Date:** 7/24/2018 5:56:00 PM
Client Sample ID: GW-11135241-2018-072418-PL-MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	540	50	*	mg/L	100	7/30/2018 3:59:51 PM	R53088
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1770	20.0	*	mg/L	1	7/31/2018 4:17:00 PM	39483
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	6.7	1.0		µg/L	1	7/30/2018 7:32:14 PM	A53058
Toluene	ND	1.0		µg/L	1	7/30/2018 7:32:14 PM	A53058
Ethylbenzene	ND	1.0		µg/L	1	7/30/2018 7:32:14 PM	A53058
Xylenes, Total	ND	1.5		µg/L	1	7/30/2018 7:32:14 PM	A53058
Surr: 4-Bromofluorobenzene	119	70-130		%Rec	1	7/30/2018 7:32:14 PM	A53058
Surr: Toluene-d8	91.8	70-130		%Rec	1	7/30/2018 7:32:14 PM	A53058

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD **Lab Order:** 1807E25
Project: 0 6 1 4 Line Release

Lab ID: 1807E25-003 **Collection Date:** 7/24/2018 6:09:00 PM
Client Sample ID: GW-11135241-2018-072418-PL-MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	640	50	*	mg/L	100	7/30/2018 4:25:34 PM	R53088
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1980	100	*D	mg/L	1	7/31/2018 4:17:00 PM	39483
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	1.0		µg/L	1	7/30/2018 9:28:32 PM	A53058
Toluene	ND	1.0		µg/L	1	7/30/2018 9:28:32 PM	A53058
Ethylbenzene	ND	1.0		µg/L	1	7/30/2018 9:28:32 PM	A53058
Xylenes, Total	ND	1.5		µg/L	1	7/30/2018 9:28:32 PM	A53058
Surr: 4-Bromofluorobenzene	121	70-130		%Rec	1	7/30/2018 9:28:32 PM	A53058
Surr: Toluene-d8	93.2	70-130		%Rec	1	7/30/2018 9:28:32 PM	A53058

Lab ID: 1807E25-004 **Collection Date:** 7/24/2018 5:57:00 PM
Client Sample ID: GW-11135241-2018-072418-PL-MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	670	50	*	mg/L	100	7/30/2018 5:16:59 PM	R53088
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2430	100	*D	mg/L	1	7/31/2018 4:17:00 PM	39483
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	130	10		µg/L	10	7/31/2018 1:18:41 PM	C53092
Toluene	ND	1.0		µg/L	1	7/30/2018 9:51:42 PM	A53058
Ethylbenzene	130	10		µg/L	10	7/31/2018 1:18:41 PM	C53092
Xylenes, Total	ND	1.5		µg/L	1	7/30/2018 9:51:42 PM	A53058
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	7/30/2018 9:51:42 PM	A53058
Surr: Toluene-d8	90.3	70-130		%Rec	1	7/30/2018 9:51:42 PM	A53058

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD **Lab Order:** 1807E25
Project: 0 6 1 4 Line Release

Lab ID: 1807E25-005 **Collection Date:** 7/24/2018 7:57:00 PM
Client Sample ID: GW-11135241-2018-072418-PL-MW-5 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	610	50	*	mg/L	100	7/30/2018 5:42:43 PM	R53088
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2080	100	*D	mg/L	1	7/31/2018 4:17:00 PM	39483
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	6.0	1.0		µg/L	1	7/30/2018 10:14:46 PM	A53058
Toluene	ND	1.0		µg/L	1	7/30/2018 10:14:46 PM	A53058
Ethylbenzene	5.5	1.0		µg/L	1	7/30/2018 10:14:46 PM	A53058
Xylenes, Total	ND	1.5		µg/L	1	7/30/2018 10:14:46 PM	A53058
Surr: 4-Bromofluorobenzene	116	70-130		%Rec	1	7/30/2018 10:14:46 PM	A53058
Surr: Toluene-d8	92.4	70-130		%Rec	1	7/30/2018 10:14:46 PM	A53058

Lab ID: 1807E25-006 **Collection Date:** 7/24/2018
Client Sample ID: GW-11135241-2018-072418-PL-Dup **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	600	50	*	mg/L	100	7/30/2018 6:08:27 PM	R53088
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2060	100	*D	mg/L	1	7/31/2018 4:17:00 PM	39483
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	5.9	1.0		µg/L	1	7/30/2018 10:37:56 PM	A53058
Toluene	ND	1.0		µg/L	1	7/30/2018 10:37:56 PM	A53058
Ethylbenzene	5.2	1.0		µg/L	1	7/30/2018 10:37:56 PM	A53058
Xylenes, Total	ND	1.5		µg/L	1	7/30/2018 10:37:56 PM	A53058
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	1	7/30/2018 10:37:56 PM	A53058
Surr: Toluene-d8	90.1	70-130		%Rec	1	7/30/2018 10:37:56 PM	A53058

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1807E25**

07-Aug-18

Client: GHD

Project: 0 6 1 4 Line Release

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R53088**	RunNo:	**53088**					
Prep Date:		Analysis Date:	**7/30/2018**	SeqNo:	**1746523**	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:	**R53088**	RunNo:	**53088**					
Prep Date:		Analysis Date:	**7/30/2018**	SeqNo:	**1746524**	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	95.2	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
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#: **1807E25**

07-Aug-18

Client: GHD

Project: 0 6 1 4 Line Release

Sample ID **100ng lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **A53058**	RunNo: **53058**
Prep Date:	Analysis Date: **7/30/2018**	SeqNo: **1745971** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	21	1.0	20.00	0	106	80	120			
Xylenes, Total	63	1.5	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Toluene-d8	9.3		10.00		93.0	70	130			

Sample ID **1807e25-001ams**	SampType: **MS4**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **GW-11135241-2018-**	Batch ID: **A53058**	RunNo: **53058**
Prep Date:	Analysis Date: **7/30/2018**	SeqNo: **1745973** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	80	120			
Toluene	21	1.0	20.00	0.1508	105	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Methyl tert-butyl ether (MTBE)	22	1.0	20.00	0	108	43.6	145			
1,2,4-Trimethylbenzene	21	1.0	20.00	0.2906	103	80	120			
1,3,5-Trimethylbenzene	21	1.0	20.00	0	103	80	120			
Xylenes, Total	65	1.5	60.00	0.4744	108	80	120			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.4	70	130			
Surr: Toluene-d8	9.0		10.00		90.2	70	130			

Sample ID **1807e25-001amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **GW-11135241-2018-**	Batch ID: **A53058**	RunNo: **53058**
Prep Date:	Analysis Date: **7/30/2018**	SeqNo: **1745974** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.3	80	120	6.17	20	
Toluene	21	1.0	20.00	0.1508	103	80	120	1.30	20	
Ethylbenzene	20	1.0	20.00	0	99.1	80	120	5.44	20	
Xylenes, Total	62	1.5	60.00	0.4744	102	80	120	5.39	20	
Surr: 4-Bromofluorobenzene	9.8		10.00		98.0	70	130	0	0	
Surr: Toluene-d8	9.1		10.00		91.0	70	130	0	0	

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **A53058**	RunNo: **53058**
Prep Date:	Analysis Date: **7/30/2018**	SeqNo: **1745980** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	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#: **1807E25**

07-Aug-18

Client: GHD

Project: 0 6 1 4 Line Release

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **A53058**	RunNo: **53058**
Prep Date:	Analysis Date: **7/30/2018**	SeqNo: **1745980** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 4-Bromofluorobenzene	11		10.00		111	70	130			
Surr: Toluene-d8	9.2		10.00		91.6	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW**	Batch ID: **C53092**	RunNo: **53092**
Prep Date:	Analysis Date: **7/31/2018**	SeqNo: **1747163** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID **100ng btex lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **C53092**	RunNo: **53092**
Prep Date:	Analysis Date: **7/31/2018**	SeqNo: **1747167** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	80	120			
Ethylbenzene	22	1.0	20.00	0	108	80	120			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Toluene-d8	10		10.00		101	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1807E25**

07-Aug-18

Client: GHD

Project: 0 6 1 4 Line Release

Sample ID	**MB-39483**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**39483**	RunNo:	**53101**					
Prep Date:	**7/30/2018**	Analysis Date:	**7/31/2018**	SeqNo:	**1746890**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-39483**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**39483**	RunNo:	**53101**					
Prep Date:	**7/30/2018**	Analysis Date:	**7/31/2018**	SeqNo:	**1746891**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

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: 1807E25 | RcptNo: 1

Received By: **Isaiah Ortiz** 7/26/2018 11:00:00 AM IO

Completed By: **Ashley Gallegos** 7/26/2018 2:51:55 PM AG

Reviewed By: labeled by: of

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☑ MY 08/07/18
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: GHD Services Inc.

Mailing Address: 6121 Indian School Rd, NE Ste. 200
Albuquerque, NM 87110

Phone #: 505-884-0672

email or Fax#: alan.brandon@ghd.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name:
0-6-1 4" Line Release

Project #:
1113524I-2018

Project Manager:
Alan Brandon

Sampler: Phil Lorang

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.3-1.0(cr)1.3

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. 1807E25	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~~) BTEX	8270 (Semi-VOA)	Chloride 300	TDS - 2540 C			Air Bubbles (Y or N)
7-24-18	19:27	Water	GW-1113524I-2018-072418 PL-MW-1	10AS-X3 500mL Poly	HCl/Ice	-001										X		X	X			
	17:56		GW-1113524I-2018-072418 PL MW-2			-002										X		X	X			
	18:09		GW-1113524I-2018-072418 PL-MW-3			-003										X		X	X			
	17:57		GW-1113524I-2018-072418 PL-MW-4			-004										X		X	X			
	19:57		GW-1113524I-2018-072418 PL-MW-5			-005										X		X	X			
	—		GW-1113524I-2018-072418 PL-Dup			-006										X		X	X			

Date:	Time:	Relinquished by:	Received by:	Date	Time
7-24-18	11:52			7/25/18	1300
7/25/18	1900		1-Ord courier	7/26/18	1100

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

October 12, 2018

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

RE: O-6-1 4" OrderNo.: 1810391

Dear Christine Mathews:

Hall Environmental Analysis Laboratory received 6 sample(s) on 10/6/2018 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD
Project: O-6-1 4"

Lab Order: 1810391

Lab ID: 1810391-001 **Collection Date:** 10/1/2018 2:00:00 PM
Client Sample ID: GW11135241-100118-CN-MW-1 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	630	25	*	mg/L	50	10/11/2018 12:46:36 AM	A54795
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1640	100	*D	mg/L	1	10/9/2018 9:42:00 PM	40877
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	10/8/2018 8:33:15 PM	B54705
Toluene	ND	1.0		µg/L	1	10/8/2018 8:33:15 PM	B54705
Ethylbenzene	ND	1.0		µg/L	1	10/8/2018 8:33:15 PM	B54705
Xylenes, Total	ND	2.0		µg/L	1	10/8/2018 8:33:15 PM	B54705
Surr: 4-Bromofluorobenzene	100	76.6-136		%Rec	1	10/8/2018 8:33:15 PM	B54705

Lab ID: 1810391-002 **Collection Date:** 10/1/2018 1:00:00 PM
Client Sample ID: GW11135241-100118-CN-MW-2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	630	25	*	mg/L	50	10/11/2018 12:59:28 AM	A54795
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1690	40.0	*D	mg/L	1	10/9/2018 9:42:00 PM	40877
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	10/8/2018 9:43:25 PM	B54705
Toluene	ND	1.0		µg/L	1	10/8/2018 9:43:25 PM	B54705
Ethylbenzene	ND	1.0		µg/L	1	10/8/2018 9:43:25 PM	B54705
Xylenes, Total	ND	2.0		µg/L	1	10/8/2018 9:43:25 PM	B54705
Surr: 4-Bromofluorobenzene	98.4	76.6-136		%Rec	1	10/8/2018 9:43:25 PM	B54705

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD **Lab Order:** 1810391
Project: O-6-1 4"

Lab ID: 1810391-003 **Collection Date:** 10/1/2018 12:35:00 PM
Client Sample ID: GW11135241-100118-CN-MW-3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	740	25	*	mg/L	50	10/11/2018 1:12:19 AM	A54795
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1880	100	*D	mg/L	1	10/9/2018 9:42:00 PM	40877
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	10/8/2018 10:06:55 PM	B54705
Toluene	ND	1.0		µg/L	1	10/8/2018 10:06:55 PM	B54705
Ethylbenzene	ND	1.0		µg/L	1	10/8/2018 10:06:55 PM	B54705
Xylenes, Total	ND	2.0		µg/L	1	10/8/2018 10:06:55 PM	B54705
Surr: 4-Bromofluorobenzene	103	76.6-136		%Rec	1	10/8/2018 10:06:55 PM	B54705

Lab ID: 1810391-004 **Collection Date:** 10/1/2018 2:30:00 PM
Client Sample ID: GW11135241-100118-CN-MW-4 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	750	25	*	mg/L	50	10/11/2018 1:25:10 AM	A54795
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2430	200	*D	mg/L	1	10/9/2018 9:42:00 PM	40877
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	40	1.0		µg/L	2	10/8/2018 10:30:31 PM	B54705
Toluene	ND	1.0		µg/L	2	10/8/2018 10:30:31 PM	B54705
Ethylbenzene	49	1.0		µg/L	2	10/8/2018 10:30:31 PM	B54705
Xylenes, Total	ND	2.0		µg/L	2	10/8/2018 10:30:31 PM	B54705
Surr: 4-Bromofluorobenzene	123	76.6-136		%Rec	2	10/8/2018 10:30:31 PM	B54705

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD **Lab Order:** 1810391
Project: O-6-1 4"

Lab ID: 1810391-005 **Collection Date:** 10/1/2018 1:25:00 PM
Client Sample ID: GW11135241-100118-CN-MW-5 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	680	25	*	mg/L	50	10/11/2018 1:38:02 AM	A54795
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1950	100	*D	mg/L	1	10/9/2018 9:42:00 PM	40877
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	1.2	1.0		µg/L	1	10/8/2018 10:53:54 PM	B54705
Toluene	ND	1.0		µg/L	1	10/8/2018 10:53:54 PM	B54705
Ethylbenzene	1.4	1.0		µg/L	1	10/8/2018 10:53:54 PM	B54705
Xylenes, Total	ND	2.0		µg/L	1	10/8/2018 10:53:54 PM	B54705
Surr: 4-Bromofluorobenzene	102	76.6-136		%Rec	1	10/8/2018 10:53:54 PM	B54705

Lab ID: 1810391-006 **Collection Date:**
Client Sample ID: Trip Blank **Matrix:**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	10/8/2018 11:17:19 PM	B54705
Benzene	ND	1.0		µg/L	1	10/8/2018 11:17:19 PM	B54705
Toluene	ND	1.0		µg/L	1	10/8/2018 11:17:19 PM	B54705
Ethylbenzene	ND	1.0		µg/L	1	10/8/2018 11:17:19 PM	B54705
Xylenes, Total	ND	2.0		µg/L	1	10/8/2018 11:17:19 PM	B54705
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2018 11:17:19 PM	B54705
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/8/2018 11:17:19 PM	B54705
Surr: 4-Bromofluorobenzene	97.0	76.6-136		%Rec	1	10/8/2018 11:17:19 PM	B54705

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1810391**

12-Oct-18

Client: GHD

Project: O-6-1 4"

Sample ID	**MB**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**A54795**	RunNo:	**54795**					
Prep Date:		Analysis Date:	**10/10/2018**	SeqNo:	**1819858**	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:	**A54795**	RunNo:	**54795**					
Prep Date:		Analysis Date:	**10/10/2018**	SeqNo:	**1819859**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.1	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
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#: **1810391**

12-Oct-18

Client: GHD

Project: O-6-1 4"

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **B54705**	RunNo: **54705**
Prep Date:	Analysis Date: **10/8/2018**	SeqNo: **1815975** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.0	76.6	136			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **B54705**	RunNo: **54705**
Prep Date:	Analysis Date: **10/8/2018**	SeqNo: **1815976** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	16	2.5	20.00	0	81.3	68.4	116			
Benzene	18	1.0	20.00	0	91.0	73.9	120			
Toluene	19	1.0	20.00	0	94.8	77.3	117			
Ethylbenzene	19	1.0	20.00	0	94.3	78.8	119			
Xylenes, Total	58	2.0	60.00	0	96.5	76.9	121			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	98.0	57.2	148			
1,3,5-Trimethylbenzene	20	1.0	20.00	0	97.6	55.1	149			
Surr: 4-Bromofluorobenzene	20		20.00		99.1	76.6	136			

Sample ID **1810391-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **GW11135241-10011**	Batch ID: **B54705**	RunNo: **54705**
Prep Date:	Analysis Date: **10/8/2018**	SeqNo: **1815978** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	16	2.5	20.00	0	81.2	49.8	143			
Benzene	19	1.0	20.00	0.6480	91.3	75	121			
Toluene	19	1.0	20.00	0	96.4	78.1	119			
Ethylbenzene	19	1.0	20.00	0	97.3	78.8	125			
Xylenes, Total	58	2.0	60.00	0	97.3	76.4	128			
1,2,4-Trimethylbenzene	20	1.0	20.00	0	98.0	67.3	143			
1,3,5-Trimethylbenzene	19	1.0	20.00	0	96.1	69	136			
Surr: 4-Bromofluorobenzene	20		20.00		102	76.6	136			

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#: **1810391**

12-Oct-18

Client: GHD

Project: O-6-1 4"

Sample ID **1810391-001AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **GW11135241-10011** Batch ID: **B54705** RunNo: **54705**

Prep Date: Analysis Date: **10/8/2018** SeqNo: **1815979** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	16	2.5	20.00	0	80.7	49.8	143	0.581	20	
Benzene	19	1.0	20.00	0.6480	91.5	75	121	0.137	20	
Toluene	19	1.0	20.00	0	96.9	78.1	119	0.549	20	
Ethylbenzene	19	1.0	20.00	0	95.4	78.8	125	1.95	20	
Xylenes, Total	58	2.0	60.00	0	97.2	76.4	128	0.123	20	
1,2,4-Trimethylbenzene	19	1.0	20.00	0	97.4	67.3	143	0.583	20	
1,3,5-Trimethylbenzene	19	1.0	20.00	0	96.1	69	136	0.0416	20	
Surr: 4-Bromofluorobenzene	20		20.00		98.9	76.6	136	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
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#: **1810391**

12-Oct-18

Client: GHD

Project: O-6-1 4"

Sample ID	**MB-40877**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**				
Client ID:	**PBW**	Batch ID:	**40877**	RunNo:	**54755**				
Prep Date:	**10/8/2018**	Analysis Date:	**10/9/2018**	SeqNo:	**1817451**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-40877**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**				
Client ID:	**LCSW**	Batch ID:	**40877**	RunNo:	**54755**				
Prep Date:	**10/8/2018**	Analysis Date:	**10/9/2018**	SeqNo:	**1817452**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

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: 1810391 | RcptNo: 1

Received By: Victoria Zellar 10/6/2018 10:55:00 AM Victoria Zellar

Completed By: Anne Thome 10/8/2018 8:42:31 AM Anne Thome

Reviewed By: MJ 10/08/18

Labeled by: JAB 10/08/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	FedEx		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. 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: JAB 10/08/18

Special Handling (if applicable)

15. 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: _____

16. Additional remarks: Trip Blank provided by lab returned by client.

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.1	Good	Yes			

Chain-of-Custody Record

Client: GHD Services

Mailing Address: 6121 Indian School Rd NE #200

Albuquerque, NM 87110

Phone #: 505 884 0672

email or Fax#: Christine.mathews@ghd.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Standard

☐ Standard ☐ Rush

Project Name: O-6-1 4"

Project #: 11135241

Project Manager: Christine Mathews

Sampler: CN

On Ice: ☒ Yes ☐ No

# of Coolers: 1 (CF) = 0.4

Cooler Temp (including CF): 0.1

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 Name	Container Type and #	Preservative Type	HEAL No. 1810391	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO3, NO2, PO4, SO4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	8260 BTEX	Chlorides	TDS			
10/1/2018	1400	WT	GW-11135241-100118-CN-MW-1	Various	Various	-001											x	x	x			
10/1/2018	1300	WT	GW-11135241-100118-CN-MW-2	Various	Various	-002											x	x	x			
10/1/2018	1235	WT	GW-11135241-100118-CN-MW-3	Various	Various	-003											x	x	x			
10/1/2018	1430	WT	GW-11135241-100118-CN-MW-4	Various	Various	-004											x	x	x			
10/1/2018	1325	WT	GW-11135241-100118-CN-MW-5	Various	Various	-005											x	x	x			
			Trip Blank			-006											X					

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10-5-18	1300			FEDEX WC 10:50 10/6/18	10/6/18	10:55
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

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.

about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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