INFORMATION ONLY

January 9, 2018 Reference No. 11135250-8

Mr. Dean Ericson
ETC Field Services LLC
600 N. Marienfeld
Suite 700
Midland, TX 79701

Dear Mr. Ericson:

Re: Site Assessment Summary and Remediation Work Plan
A-14 Compressor Station
1RP-4850
ETC Field Services LLC
Site Location: Unit H, Sec. 6, T 24-S, R 25-E
(Lat 32.246448N°, Long -103.402059W°)
Lea County, New Mexico

GHD Services, Inc. (GHD) is pleased to present this work plan for the above referenced site. The A-14 Compressor Station (hereafter referred to as the "Site") is located within Unit H, Section 6, Township 24 South, Range 25 East, in Lea County, New Mexico (see Figure 1). The site is owned by the U. S. Bureau of Land Management (BLM).

On October 20, 2017, a release of approximately 17.48 barrels) of water/condensate was reported to the State of New Mexico Oil Conservation Division (NMOCD) and the BLM via Form C-141. A pipeline relief valve failed due to a lodged cup pig causing the release. Contaminated surface soils were scraped in the pad area and stockpiled on site (see Figure 2). Release number 1RP-4850 was assigned by NMOCD for this event.

1. Recommended Remediation Action Limits

Based on information available from the United States Geologic Survey National Water Information System, the depth to groundwater at the Site is approximately 40 ft. below ground surface (bgs). This is based on a water well that is located approximately 2.68 mile west, south west of the Site (see Appendix A, Water Well Reports for depth to water). Additionally, there are no well head protection areas or surface water bodies within 1,000 ft. of the Site. Therefore, the preliminary total ranking score is 20 (see Table below).

Based on this score, the applicable NMOCD Site specific Recommended Remediation Action Limits (RRALs) are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX), 100 mg/kg for total petroleum hydrocarbons (TPH), and 600 mg/kg for chlorides.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (<50 ft. bgs)	20
Wellhead Protection Area (> 1000 ft. from water source, > 200 ft. from domestic source)	0
Distance to Surface Body Water (>1000 ft.)	0
Ranking Criteria Total Score	**20***
*Because the ranking criteria total score is 20, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 100 mg/kg for total TPH and 600 ppm for chlorides[1].	

1. NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993 and recent discussions with Mr. Jim Griswold with the NMOCD.

2. Assessment Activities

GHD personnel performed limited soil sampling at the site on October 23 and 24, 2017. The Site assessment included the collection of soil samples within the scraped pad area and in the pasture (off-pad area) for field screening and laboratory analysis for petroleum hydrocarbons and chloride (see Figure 2 for locations). Six soil samples, TP-1 through TP-6, were collected from either a depth of 3 to 6 inches or from the surface to 2 inches in the pad area and submitted to Hall Environmental Analysis Laboratory located in Albuquerque, New Mexico. The samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8021, total petroleum hydrocarbons (TPH) by EPA Method 8015, and chloride by EPA 300.0 analysis.

BTEX constituents were not detected above the laboratory reporting limits (LRLs). Total TPH concentrations ranged from 52 to 1,410 milligrams per kilogram (mg/kg), and chloride concentrations ranged from 280 to 6,600 mg/kg. The laboratory report is included in Appendix B and the results are summarize on Figure 2 and in Table 1.

Total TPH concentrations exceed the RRAL in five samples, TP-2 and TP-3 from 3 to 6 inches and TP-4, TP-5, and TP-6 from ground surface to 2 inches. Chloride concentrations exceeded the RRAL in all samples collected from TP-2 through TP-6.

Limited sampling in the pasture area consisted of the collection of nine surface soil samples TP-7 through TP-15, collected at a depth from ground surface to 2 inches deep. These samples were field screened for petroleum hydrocarbons using the Petroflag TPH Analyzer System and for chlorides using HACH Titration Strips. Petroflag TPH concentrations ranged from 161 to 1,647 parts per million (ppm) and chloride field screening concentrations ranged from <100 to 1,136 milligrams per liter (mg/L).

Three additional soil samples were collected from a depth of 6 to 8 inches at the TP-13 through TP-15 locations within the heavy spray area (closest to the release point) in the pasture and submitted to HEAL

for laboratory analysis. The samples were analyzed for BTEX, total TPH and chloride by same methods described above.

Laboratory results from samples collected from the heavy spray area indicate BTEX constituents were not detected above the LRLs, total TPH concentrations ranged from below the LRLs to 31 mg/kg, and chloride concentrations ranged from 48 to 150 mg/kg. None of the detected concentrations exceeded the RRALs. The laboratory report is included in Appendix B and the results are summarize on Figure 2 and in Table 1.

GHD contracted with Boone Archaeological Resource Consultants, LLC located in Carlsbad, New Mexico to perform a Class III Archaeological Survey of the release area in order to initiate remediation activities. New Mexico Cultural Resources Information System number 139360 was assigned to the project. No cultural resources were updated or recorded during the survey. A copy of the survey report is included in Appendix C.

ETC Field Services, LLC (ETC) is planning on removing all of the structures and equipment from the pad area in the first or second quarter of 2018 to accommodate proposed soils remediation activities, described below.

3. Summary and Recommendations

Soil samples were collected from the release area within the fenced pad and from the adjoining pasture (see Figure 2) and submitted for laboratory analysis. Based on the laboratory results, the vertical and horizontal extent of petroleum hydrocarbon and chloride impacted soil has not been assessed to below the RRALs in the pad area. The horizontal and vertical extent of petroleum hydrocarbon and chloride impacted soil has been assessed to below the RRALs in the pasture.

Based on the results of the assessment activities, impacted soil concentrations exceeding the RRALs are only located within the pad area. Contingent upon removal of structures and equipment within the pad area by ETC, GHD proposes the following:

- Request a variance from the NMOCD and the BLM to leave the impacted soil in place in the pad area until the structures have been removed. Once the structures have been removed, the impacted soils will be excavated to an approximate depth of 1 to 2 feet and disposed of at a regulated facility. Confirmation samples will be collected for laboratory analyses following excavation activities. A 20 mil liner will be placed in the bottom of the excavation at a depth no greater than 4 ft. bgs, if necessary. Excavated areas will then be backfilled and the area re-seeded with a BLM approved seed mixture.
- Micro-Blaze® will be applied to the pasture area to remediate any residual contamination. Micro-Blaze® contains a proprietary blend of wetting agents, nutrients, and several strains of safe, non-pathogenic Bacillus bacteria. When applied to a hydrocarbon-based or organic spill or contaminant, the wetting agent begins breaking down the contaminants into smaller molecules for

more efficient degradation, by the microbes, into harmless byproducts like carbon dioxide, water, and trace salts.

Following completion of the above activities, a request for no further action will be made for the Site. Should you have any questions, or require additional information regarding this submittal please feel free to contact myself, or Bernie Bockisch at (505) 884-0672 or Bernard.Bockisch@ghd.com.

Sincerely,

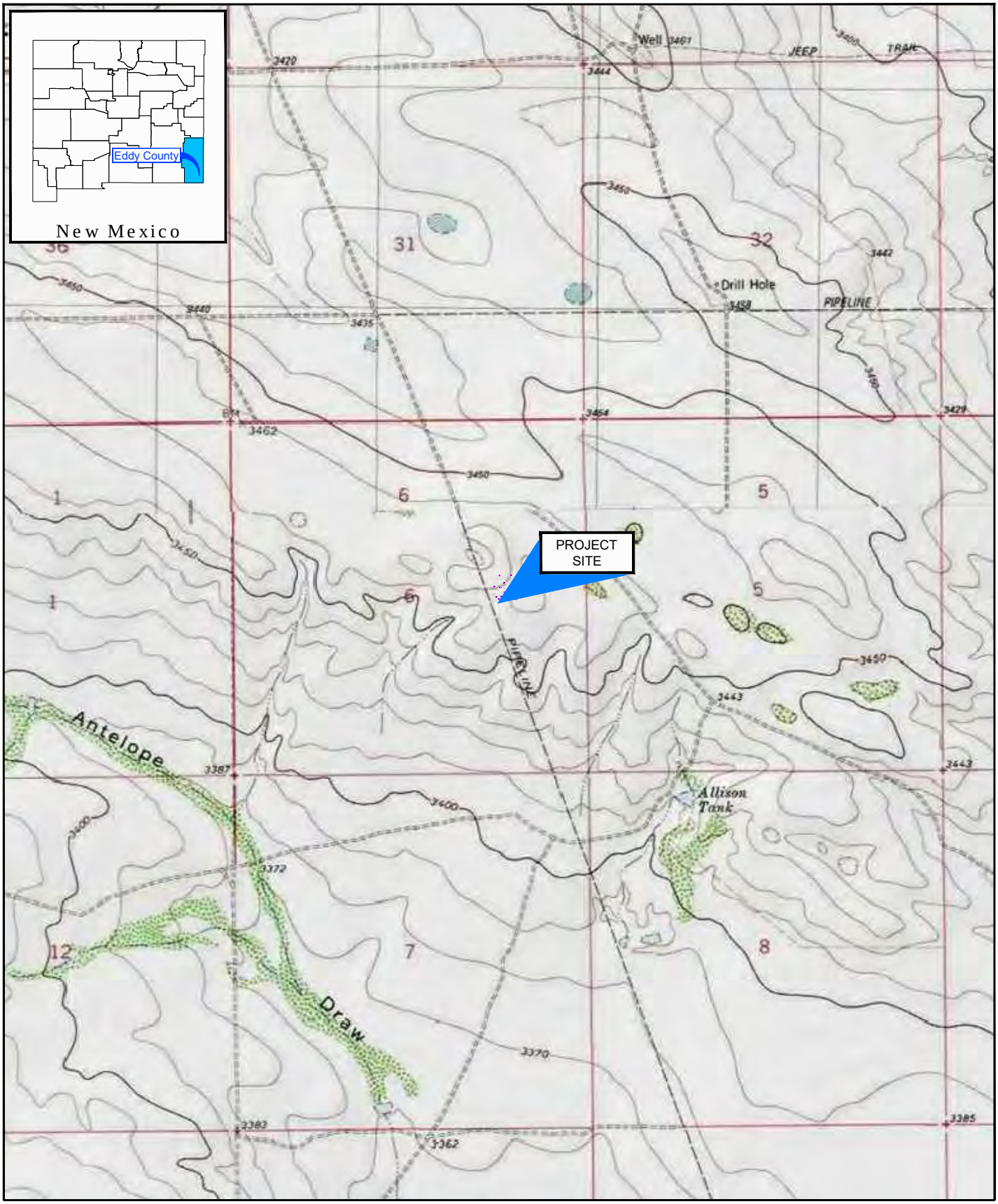
GHD

Alan Brandon
Senior Project Manager

Jeffrey Walker
Senior Project Manager

AB/mc/8

Figures



Source: USGS 7.5 Minute Quad "Woodley Flat, San Simon Sink, East Lake, and Custer Mountain, New Mexico"

Lat/Long: 32.246271° North, 103.402223° West

0 1000 2000ft

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

ETC FIELD SERVICES
LEA COUNTY, NEW MEXICO
A-14 COMPRESSOR

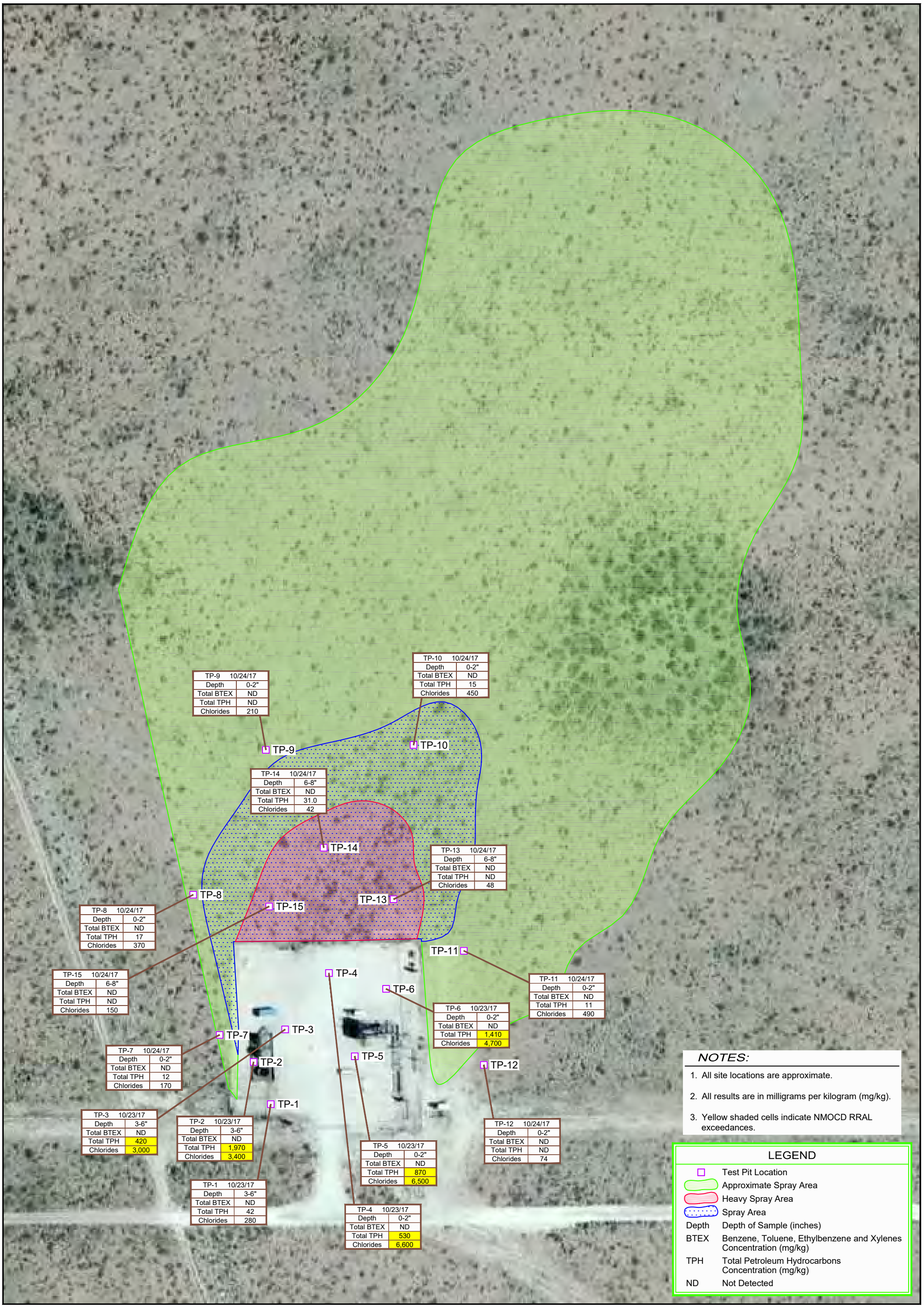
11135250-08

Oct 31, 2017

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135250-ETC Field Services\11135250-08(000)GN-DL001.dwg



Source: Microsoft Product Screen shot(s) Reprinted with permission from Microsoft Corporation

Lat/Long: 32.246271° North, 103.402223° West

0 50 100ft

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

GHD

ETC FIELD SERVICES
LEA COUNTY, NEW MEXICO
A-14 COMPRESSOR

11135250-08

Jan 4, 2018

SOIL SAMPLE LOCATION

FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1113----\11135250-ETC Field Services\11135250-08(000)GN-DL001.dwg

Tables

Table 1

ETC Field Services LLC - A-14 Compressor Station
Section 20, Township 20 South, Range 37 East
Lea County, New Mexico
Soil Analytical Results Summary

Sample ID	*Sample Depth*	*Date*	*Chlorides*	*Benzene*	*Toluene*	*Ethylbenzene*	*Xylenes*	*Total BTEX*	*TPH*	*TPH*	*TPH*	*Total TPH*	Field Screen - Hydrocarbons (PetroFlag)
	(inches)		*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*(mg/kg)*	*GRO (C6-C10)*	*DRO (C10-C28)*	*EXT DRO (C28-C36)*	*GRO/DRO*	(ppm)
									(mg/kg)	*(mg/kg)*		*(mg/kg)*	
NMOCD Remediation Action Levels			***600***	***10***	***NE***	***NE***	***NE***	***50***	***NE***	***NE***	***NE***	***100***	
		SUBSURFACE INVESTIGATION SAMPLES											
S-11135250-08-102317-MG-TP-1-3/6	3-6	10/23/2017	280	<0.023	<0.046	<0.046	<0.092	<0.207	<4.6	42	<47	42	--
S-11135250-08-102317-MG-TP-2-3/6	3-6	10/23/2017	3,400	<0.024	<0.048	<0.048	<0.095	<0.215	<4.8	1200	770	1,970	--
S-11135250-08-102317-MG-TP-3-3/6	3-6	10/23/2017	3,000	<0.023	<0.047	<0.047	<0.093	<0.210	<4.7	270	150	420	--
S-11135250-08-102317-MG-TP-4-0/2	0-2	10/23/2017	6,600	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	310	220	530	--
S-11135250-08-102317-MG-TP-5-0/2	0-2	10/23/2017	6,500	<0.024	<0.049	<0.049	<0.098	<0.218	<4.9	450	420	870	--
S-11135250-08-102317-MG-TP-6-0/2	0-2	10/23/2017	4,700	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	810	600	1,410	--
S-11135250-08-102417-MG-TP-7-0/2	0-2	10/24/2017	170	<0.025	<0.049	<0.049	<0.099	<0.220	<4.9	12	<48	12	241
S-11135250-08-102417-MG-TP-8-0/2	0-2	10/24/2017	370	<0.023	<0.047	<0.047	<0.093	<0.210	<4.7	17	<50	17	274
S-11135250-08-102417-MG-TP-9-0/2	0-2	10/24/2017	210	<0.023	<0.047	<0.047	<0.093	<0.210	<4.7	<10	<51	<65.7	230
S-11135250-08-102417-MG-TP-10-0/2	0-2	10/24/2017	450	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	15	<48	15	418
S-11135250-08-102417-MG-TP-11-0/2	0-2	10/24/2017	490	<0.024	<0.048	<0.048	<0.097	<0.217	<4.8	11	<49	11	390
S-11135250-08-102417-MG-TP-12-0/2	0-2	10/24/2017	74	<0.023	<0.046	<0.046	<0.093	<0.208	<4.6	<9.7	<48	<62.3	161
TP-13	0-2	10/24/2017											681
S-11135250-08-102417-MG-TP-13-6/8	6-8	10/24/2017	48	<0.025	<0.050	<0.050	<0.10	<0.225	<5.0	<10.0	<51.0	<66.0	56
TP-14	0-2	10/24/2017											1,095
S-11135250-08-102417-MG-TP-14-6/8	6-8	10/24/2017	42	<0.023	<0.046	<0.046	<0.091	<0.206	<4.6	31.0	<47	31.0	66
TP-15	0-2	10/24/2017											1,647
S-11135250-08-102417-MG-TP-15-6/8	6-8	10/24/2017	150	<0.023	<0.046	<0.046	<0.092	<0.207	<4.6	<9.5	<47	<61.1	83

Note: Concentrations that are yellow shaded exceed the NMOCD Remediation Action Leve
NE = Not Established
mg/Kg = milligrams per Kilogram
NA = Not Analyzed
Field Screen

Appendices

Appendix A
Well Information

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater | Geographic Area: United States | GO

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 321357103265201

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

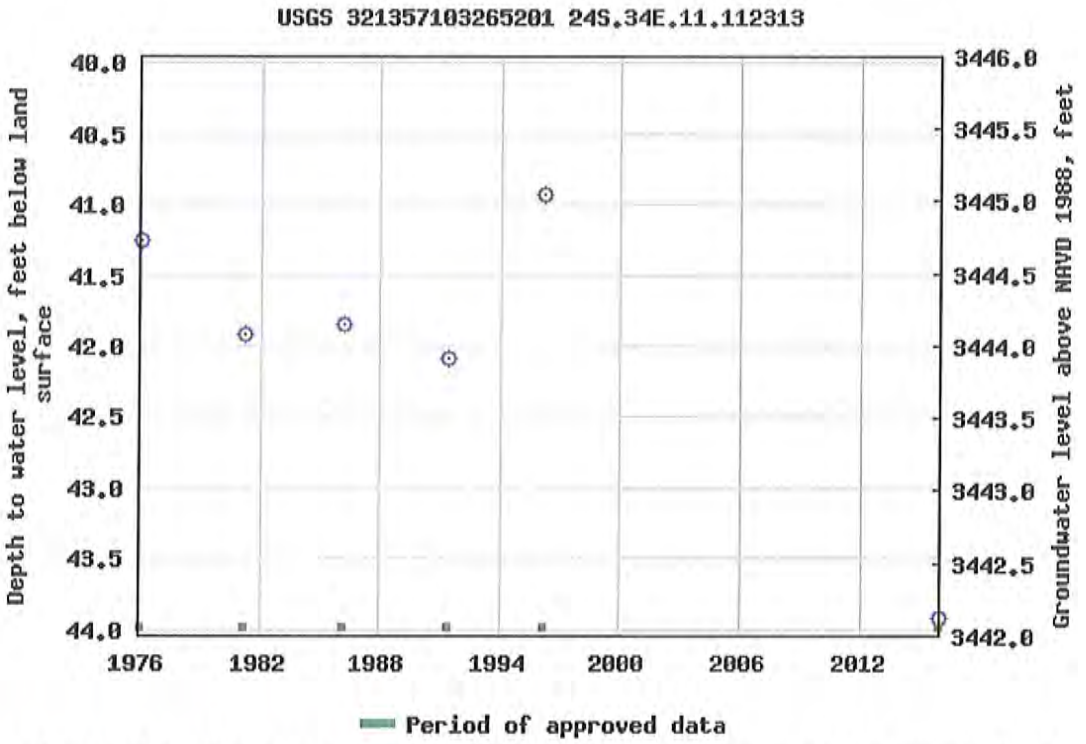
USGS 321357103265201 24S.34E.11.112313

Available data for this site Groundwater: Field measurements | GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°14'16.5", Longitude 103°26'49.0" NAD83
Land-surface elevation 3,486 feet above NAVD88
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Appendix B
Laboratory 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

November 09, 2017

Bernie Bockisch

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

RE: A 14 OrderNo.: 1710F05

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 12 sample(s) on 10/26/2017 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: A 14

Lab Order: 1710F05

Lab ID: 1710F05-001 **Collection Date:** 10/23/2017 1:56:00 PM
Client Sample ID: S-11135250-08-102317-MG-TP-1-3/6 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	280	30		mg/Kg	20	11/3/2017 9:33:17 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	42	9.4		mg/Kg	1	10/31/2017 7:09:57 PM	34712
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/31/2017 7:09:57 PM	34712
Surr: DNOP	80.0	70-130		%Rec	1	10/31/2017 7:09:57 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	10/31/2017 6:58:43 PM	34703
Surr: BFB	83.6	15-316		%Rec	1	10/31/2017 6:58:43 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/31/2017 6:58:43 PM	34703
Toluene	ND	0.046		mg/Kg	1	10/31/2017 6:58:43 PM	34703
Ethylbenzene	ND	0.046		mg/Kg	1	10/31/2017 6:58:43 PM	34703
Xylenes, Total	ND	0.092		mg/Kg	1	10/31/2017 6:58:43 PM	34703
Surr: 4-Bromofluorobenzene	92.0	80-120		%Rec	1	10/31/2017 6:58:43 PM	34703

Lab ID: 1710F05-002 **Collection Date:** 10/23/2017 2:10:00 PM
Client Sample ID: S-11135250-08-102317-MG-TP-2-3/6 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	3400	150		mg/Kg	100	11/6/2017 7:29:13 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1200	95		mg/Kg	10	10/31/2017 7:32:09 PM	34712
Motor Oil Range Organics (MRO)	770	480		mg/Kg	10	10/31/2017 7:32:09 PM	34712
Surr: DNOP	0	70-130	S	%Rec	10	10/31/2017 7:32:09 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/1/2017 8:03:16 PM	34703
Surr: BFB	97.3	15-316		%Rec	1	11/1/2017 8:03:16 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/1/2017 8:03:16 PM	34703
Toluene	ND	0.048		mg/Kg	1	11/1/2017 8:03:16 PM	34703
Ethylbenzene	ND	0.048		mg/Kg	1	11/1/2017 8:03:16 PM	34703
Xylenes, Total	ND	0.095		mg/Kg	1	11/1/2017 8:03:16 PM	34703
Surr: 4-Bromofluorobenzene	88.1	80-120		%Rec	1	11/1/2017 8:03:16 PM	34703

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: A 14

Lab Order: 1710F05

Lab ID: 1710F05-003 **Collection Date:** 10/23/2017 2:15:00 PM
Client Sample ID: S-11135250-08-102317-MG-TP-3-3/6 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	3000	150		mg/Kg	100	11/6/2017 8:06:27 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	270	9.1		mg/Kg	1	11/1/2017 10:16:40 AM	34712
Motor Oil Range Organics (MRO)	150	46		mg/Kg	1	11/1/2017 10:16:40 AM	34712
Surr: DNOP	94.4	70-130		%Rec	1	11/1/2017 10:16:40 AM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/1/2017 8:49:58 PM	34703
Surr: BFB	80.0	15-316		%Rec	1	11/1/2017 8:49:58 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/1/2017 8:49:58 PM	34703
Toluene	ND	0.047		mg/Kg	1	11/1/2017 8:49:58 PM	34703
Ethylbenzene	ND	0.047		mg/Kg	1	11/1/2017 8:49:58 PM	34703
Xylenes, Total	ND	0.093		mg/Kg	1	11/1/2017 8:49:58 PM	34703
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	11/1/2017 8:49:58 PM	34703

Lab ID: 1710F05-004 **Collection Date:** 10/23/2017 2:25:00 PM
Client Sample ID: S-11135250-08-102317-MG-TP-4-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	6600	300		mg/Kg	200	11/6/2017 8:18:51 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	310	9.7		mg/Kg	1	11/1/2017 10:44:30 AM	34712
Motor Oil Range Organics (MRO)	220	48		mg/Kg	1	11/1/2017 10:44:30 AM	34712
Surr: DNOP	93.8	70-130		%Rec	1	11/1/2017 10:44:30 AM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/31/2017 8:08:36 PM	34703
Surr: BFB	80.0	15-316		%Rec	1	10/31/2017 8:08:36 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/31/2017 8:08:36 PM	34703
Toluene	ND	0.047		mg/Kg	1	10/31/2017 8:08:36 PM	34703
Ethylbenzene	ND	0.047		mg/Kg	1	10/31/2017 8:08:36 PM	34703
Xylenes, Total	ND	0.095		mg/Kg	1	10/31/2017 8:08:36 PM	34703
Surr: 4-Bromofluorobenzene	90.5	80-120		%Rec	1	10/31/2017 8:08:36 PM	34703

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: A 14

Lab Order: 1710F05

Lab ID: 1710F05-005 **Collection Date:** 10/23/2017 2:35:00 PM
Client Sample ID: S-11135250-08-102317-MG-TP-5-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	6500	300		mg/Kg	200	11/6/2017 8:31:16 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	450	9.8		mg/Kg	1	11/1/2017 11:11:58 AM	34712
Motor Oil Range Organics (MRO)	420	49		mg/Kg	1	11/1/2017 11:11:58 AM	34712
Surr: DNOP	99.1	70-130		%Rec	1	11/1/2017 11:11:58 AM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/31/2017 8:31:55 PM	34703
Surr: BFB	79.6	15-316		%Rec	1	10/31/2017 8:31:55 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/31/2017 8:31:55 PM	34703
Toluene	ND	0.049		mg/Kg	1	10/31/2017 8:31:55 PM	34703
Ethylbenzene	ND	0.049		mg/Kg	1	10/31/2017 8:31:55 PM	34703
Xylenes, Total	ND	0.098		mg/Kg	1	10/31/2017 8:31:55 PM	34703
Surr: 4-Bromofluorobenzene	87.8	80-120		%Rec	1	10/31/2017 8:31:55 PM	34703

Lab ID: 1710F05-006 **Collection Date:** 10/23/2017 3:05:00 PM
Client Sample ID: S-11135250-08-102317-MG-TP-6-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	4700	300		mg/Kg	200	11/6/2017 8:43:40 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	810	95		mg/Kg	10	10/31/2017 9:00:25 PM	34712
Motor Oil Range Organics (MRO)	600	480		mg/Kg	10	10/31/2017 9:00:25 PM	34712
Surr: DNOP	0	70-130	S	%Rec	10	10/31/2017 9:00:25 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/31/2017 8:55:13 PM	34703
Surr: BFB	78.4	15-316		%Rec	1	10/31/2017 8:55:13 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/31/2017 8:55:13 PM	34703
Toluene	ND	0.048		mg/Kg	1	10/31/2017 8:55:13 PM	34703
Ethylbenzene	ND	0.048		mg/Kg	1	10/31/2017 8:55:13 PM	34703
Xylenes, Total	ND	0.096		mg/Kg	1	10/31/2017 8:55:13 PM	34703
Surr: 4-Bromofluorobenzene	86.2	80-120		%Rec	1	10/31/2017 8:55:13 PM	34703

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: A 14

Lab Order: 1710F05

Lab ID: 1710F05-007 **Collection Date:** 10/24/2017 11:55:00 AM
Client Sample ID: S-11135250-08-102417-MG-TP-7-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	170	30		mg/Kg	20	11/3/2017 11:37:22 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	12	9.6		mg/Kg	1	10/31/2017 9:22:29 PM	34712
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/31/2017 9:22:29 PM	34712
Surr: DNOP	79.8	70-130		%Rec	1	10/31/2017 9:22:29 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/31/2017 9:18:29 PM	34703
Surr: BFB	79.4	15-316		%Rec	1	10/31/2017 9:18:29 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	10/31/2017 9:18:29 PM	34703
Toluene	ND	0.049		mg/Kg	1	10/31/2017 9:18:29 PM	34703
Ethylbenzene	ND	0.049		mg/Kg	1	10/31/2017 9:18:29 PM	34703
Xylenes, Total	ND	0.099		mg/Kg	1	10/31/2017 9:18:29 PM	34703
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	10/31/2017 9:18:29 PM	34703

Lab ID: 1710F05-008 **Collection Date:** 10/24/2017 12:00:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-8-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	370	30		mg/Kg	20	11/3/2017 11:49:47 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	17	9.9		mg/Kg	1	10/31/2017 9:44:36 PM	34712
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/31/2017 9:44:36 PM	34712
Surr: DNOP	84.2	70-130		%Rec	1	10/31/2017 9:44:36 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/31/2017 9:42:00 PM	34703
Surr: BFB	83.0	15-316		%Rec	1	10/31/2017 9:42:00 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/31/2017 9:42:00 PM	34703
Toluene	ND	0.047		mg/Kg	1	10/31/2017 9:42:00 PM	34703
Ethylbenzene	ND	0.047		mg/Kg	1	10/31/2017 9:42:00 PM	34703
Xylenes, Total	ND	0.093		mg/Kg	1	10/31/2017 9:42:00 PM	34703
Surr: 4-Bromofluorobenzene	91.4	80-120		%Rec	1	10/31/2017 9:42:00 PM	34703

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: A 14

Lab Order: 1710F05

Lab ID: 1710F05-009 **Collection Date:** 10/24/2017 12:10:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-9-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	210	30		mg/Kg	20	11/4/2017 12:02:11 AM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/31/2017 10:06:40 PM	34712
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	10/31/2017 10:06:40 PM	34712
Surr: DNOP	86.2	70-130		%Rec	1	10/31/2017 10:06:40 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/31/2017 10:05:30 PM	34703
Surr: BFB	83.1	15-316		%Rec	1	10/31/2017 10:05:30 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/31/2017 10:05:30 PM	34703
Toluene	ND	0.047		mg/Kg	1	10/31/2017 10:05:30 PM	34703
Ethylbenzene	ND	0.047		mg/Kg	1	10/31/2017 10:05:30 PM	34703
Xylenes, Total	ND	0.093		mg/Kg	1	10/31/2017 10:05:30 PM	34703
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	1	10/31/2017 10:05:30 PM	34703

Lab ID: 1710F05-010 **Collection Date:** 10/24/2017 12:15:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-10-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	450	30		mg/Kg	20	11/4/2017 12:14:35 AM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	15	9.7		mg/Kg	1	10/31/2017 10:28:42 PM	34712
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/31/2017 10:28:42 PM	34712
Surr: DNOP	81.0	70-130		%Rec	1	10/31/2017 10:28:42 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/31/2017 11:39:07 PM	34703
Surr: BFB	81.6	15-316		%Rec	1	10/31/2017 11:39:07 PM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	10/31/2017 11:39:07 PM	34703
Toluene	ND	0.048		mg/Kg	1	10/31/2017 11:39:07 PM	34703
Ethylbenzene	ND	0.048		mg/Kg	1	10/31/2017 11:39:07 PM	34703
Xylenes, Total	ND	0.096		mg/Kg	1	10/31/2017 11:39:07 PM	34703
Surr: 4-Bromofluorobenzene	89.6	80-120		%Rec	1	10/31/2017 11:39:07 PM	34703

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: A 14

Lab Order: 1710F05

Lab ID: 1710F05-011 **Collection Date:** 10/24/2017 12:20:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-11-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	490	30		mg/Kg	20	11/4/2017 12:27:00 AM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	11	9.8		mg/Kg	1	10/31/2017 10:50:42 PM	34712
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/31/2017 10:50:42 PM	34712
Surr: DNOP	83.6	70-130		%Rec	1	10/31/2017 10:50:42 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/1/2017 12:02:35 AM	34703
Surr: BFB	84.0	15-316		%Rec	1	11/1/2017 12:02:35 AM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/1/2017 12:02:35 AM	34703
Toluene	ND	0.048		mg/Kg	1	11/1/2017 12:02:35 AM	34703
Ethylbenzene	ND	0.048		mg/Kg	1	11/1/2017 12:02:35 AM	34703
Xylenes, Total	ND	0.097		mg/Kg	1	11/1/2017 12:02:35 AM	34703
Surr: 4-Bromofluorobenzene	93.5	80-120		%Rec	1	11/1/2017 12:02:35 AM	34703

Lab ID: 1710F05-012 **Collection Date:** 10/24/2017 12:25:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-12-0/2 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	74	30		mg/Kg	20	11/4/2017 12:39:24 AM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/31/2017 11:12:52 PM	34712
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/31/2017 11:12:52 PM	34712
Surr: DNOP	75.8	70-130		%Rec	1	10/31/2017 11:12:52 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/1/2017 12:26:03 AM	34703
Surr: BFB	81.3	15-316		%Rec	1	11/1/2017 12:26:03 AM	34703
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	11/1/2017 12:26:03 AM	34703
Toluene	ND	0.046		mg/Kg	1	11/1/2017 12:26:03 AM	34703
Ethylbenzene	ND	0.046		mg/Kg	1	11/1/2017 12:26:03 AM	34703
Xylenes, Total	ND	0.093		mg/Kg	1	11/1/2017 12:26:03 AM	34703
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	11/1/2017 12:26:03 AM	34703

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#: **1710F05**

09-Nov-17

Client: GHD

Project: A 14

Sample ID	**MB-34812**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**34812**		RunNo:	**46865**				
Prep Date:	**11/3/2017**	Analysis Date:	**11/3/2017**		SeqNo:	**1496174**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-34812**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**34812**		RunNo:	**46865**				
Prep Date:	**11/3/2017**	Analysis Date:	**11/3/2017**		SeqNo:	**1496175**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.7	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#: **1710F05**

09-Nov-17

Client: GHD

Project: A 14

Sample ID	**LCS-34712**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**34712**		RunNo:	**46767**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491802**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.0	73.2	114			
Surr: DNOP	4.3		5.000		85.4	70	130			

Sample ID	**MB-34712**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**34712**		RunNo:	**46767**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491803**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.4	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#: **1710F05**

09-Nov-17

Client: GHD

Project: A 14

Sample ID	**MB-34703**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**34703**		RunNo:	**46774**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491570**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.6	15	316			

Sample ID	**LCS-34703**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**34703**		RunNo:	**46774**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491571**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	75.9	131			
Surr: BFB	980		1000		98.2	15	316			

Sample ID	**1710F05-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**S-11135250-08-1023**	Batch ID:	**34703**		RunNo:	**46774**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491574**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.74	0	109	77.8	128			
Surr: BFB	940		949.7		98.6	15	316			

Sample ID	**1710F05-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**S-11135250-08-1023**	Batch ID:	**34703**		RunNo:	**46774**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491575**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.63	0	110	77.8	128	0.880	20	
Surr: BFB	940		945.2		99.0	15	316	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#: **1710F05**

09-Nov-17

Client: GHD

Project: A 14

Sample ID	**MB-34703**	SampType: **MBLK**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID: **34703**		RunNo: **46774**					
Prep Date:	**10/30/2017**	Analysis Date: **10/31/2017**		SeqNo: **1491596**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		92.6	80	120			

Sample ID	**LCS-34703**	SampType: **LCS**		TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID: **34703**		RunNo: **46774**					
Prep Date:	**10/30/2017**	Analysis Date: **10/31/2017**		SeqNo: **1491597**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	98.0	77.3	128			
Toluene	0.98	0.050	1.000	0	97.5	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	97.3	81.6	129			
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	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: 1710F05 | RcptNo: 1

Received By: Richie Eriacho 10/26/2017 10:00:00 AM

Completed By: Sophia Campuzano 10/27/2017 3:49:38 PM

Reviewed By: 10/27/17

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	2.6	Good	Yes			

Chain-of-Custody Record

Client: GHD Services, Inc.

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

Phone #: 505 884 0672

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

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: A-14

Project #: 11135250-08

Project Manager: Bernard Backisch

Sampler: Michael Gant

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.4 +0.2 = 2.6

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. 1710F05	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)
10/23	1356	S	S-11135250-08-102317-116-TP-1-3/6'	4oz Soil Jar	ICE	-001	X		X									X				
10/23	1410		S-11135250-08-102317-116-TP-2-3/6'			-002	X		X									X				
10/23	1415		S-11135250-08-102317-116-TP-3-3/6'			-003	X		X									X				
10/23	1425		S-11135250-08-102317-116-TP-4-0'			-004	X		X									X				
10/23	1435		S-11135250-08-102317-116-TP-5-0'			-005	X		X									X				
10/23	1505		S-11135250-08-102317-116-TP-6-0'			-006	X		X									X				
10/24	1155		S-11135250-08-102417-116-TP-7-0'			-007	X		X									X				
10/24	1200		S-11135250-08-102417-116-TP-8-0'			-008	X		X									X				
10/24	1210		S-11135250-08-102417-116-TP-9-0'			-009	X		X									X				
10/24	1215		S-11135250-08-102417-116-TP-10-0'			-010	X		X									X				
10/24	1220		S-11135250-08-102417-116-TP-11-0'			-011	X		X									X				
10/24	1225		S-11135250-08-102417-116-TP-12-0'			-012	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/25	0800	Michael Gant			
10/25/17	1900			10/26/17	1000

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 07, 2017

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

RE: A 14 OrderNo.: 1710F02

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/26/2017 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: A 14

Lab Order: 1710F02

Lab ID: 1710F02-001 **Collection Date:** 10/24/2017 2:05:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-13-618 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	48	30		mg/Kg	20	11/3/2017 8:06:24 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/31/2017 5:41:30 PM	34712
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	10/31/2017 5:41:30 PM	34712
Surr: DNOP	84.9	70-130		%Rec	1	10/31/2017 5:41:30 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/31/2017 2:22:07 PM	34708
Surr: BFB	106	15-316		%Rec	1	10/31/2017 2:22:07 PM	34708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	10/31/2017 2:22:07 PM	34708
Toluene	ND	0.050		mg/Kg	1	10/31/2017 2:22:07 PM	34708
Ethylbenzene	ND	0.050		mg/Kg	1	10/31/2017 2:22:07 PM	34708
Xylenes, Total	ND	0.10		mg/Kg	1	10/31/2017 2:22:07 PM	34708
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	10/31/2017 2:22:07 PM	34708

Lab ID: 1710F02-002 **Collection Date:** 10/24/2017 2:00:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-14-618 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	42	30		mg/Kg	20	11/3/2017 9:08:27 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	31	9.3		mg/Kg	1	11/1/2017 2:26:19 PM	34712
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/1/2017 2:26:19 PM	34712
Surr: DNOP	70.3	70-130		%Rec	1	11/1/2017 2:26:19 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/1/2017 2:59:42 PM	34708
Surr: BFB	82.0	15-316		%Rec	1	11/1/2017 2:59:42 PM	34708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/31/2017 7:31:05 PM	34708
Toluene	ND	0.046		mg/Kg	1	10/31/2017 7:31:05 PM	34708
Ethylbenzene	ND	0.046		mg/Kg	1	10/31/2017 7:31:05 PM	34708
Xylenes, Total	ND	0.091		mg/Kg	1	10/31/2017 7:31:05 PM	34708
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	10/31/2017 7:31:05 PM	34708

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: A 14

Lab Order: 1710F02

Lab ID: 1710F02-003
Collection Date: 10/24/2017 1:55:00 PM
Client Sample ID: S-11135250-08-102417-MG-TP-15-618
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	150	30		mg/Kg	20	11/3/2017 9:20:52 PM	34812
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/1/2017 1:30:51 PM	34712
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/1/2017 1:30:51 PM	34712
Surr: DNOP	79.0	70-130		%Rec	1	11/1/2017 1:30:51 PM	34712
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/1/2017 7:16:21 PM	34708
Surr: BFB	83.7	15-316		%Rec	1	11/1/2017 7:16:21 PM	34708
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	10/31/2017 7:54:45 PM	34708
Toluene	ND	0.046		mg/Kg	1	10/31/2017 7:54:45 PM	34708
Ethylbenzene	ND	0.046		mg/Kg	1	10/31/2017 7:54:45 PM	34708
Xylenes, Total	ND	0.092		mg/Kg	1	10/31/2017 7:54:45 PM	34708
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	10/31/2017 7:54:45 PM	34708

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#: **1710F02**

07-Nov-17

Client: GHD

Project: A 14

Sample ID	**MB-34812**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**34812**	RunNo:	**46865**					
Prep Date:	**11/3/2017**	Analysis Date:	**11/3/2017**	SeqNo:	**1496174**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-34812**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**34812**	RunNo:	**46865**					
Prep Date:	**11/3/2017**	Analysis Date:	**11/3/2017**	SeqNo:	**1496175**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.7	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#: **1710F02**

07-Nov-17

Client: GHD

Project: A 14

Sample ID	**LCS-34712**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**34712**		RunNo:	**46767**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491802**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.0	73.2	114			
Surr: DNOP	4.3		5.000		85.4	70	130			

Sample ID	**MB-34712**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**34712**		RunNo:	**46767**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491803**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.4	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#: **1710F02**

07-Nov-17

Client: GHD

Project: A 14

Sample ID	**MB-34708**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**PBS**	Batch ID:	**34708**		RunNo:	**46775**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491523**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		107	15	316			

Sample ID	**LCS-34708**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**LCSS**	Batch ID:	**34708**		RunNo:	**46775**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491525**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	5.0	25.00	0	118	75.9	131			
Surr: BFB	1200		1000		119	15	316			

Sample ID	**1710F02-002AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**S-11135250-08-1024**	Batch ID:	**34708**		RunNo:	**46775**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491529**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.6	22.96	0	129	77.8	128			S
Surr: BFB	1100		918.3		121	15	316			

Sample ID	**1710F02-002AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**				
Client ID:	**S-11135250-08-1024**	Batch ID:	**34708**		RunNo:	**46775**				
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**		SeqNo:	**1491530**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.6	23.08	0	123	77.8	128	3.83	20	
Surr: BFB	1100		923.4		121	15	316	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#: **1710F02**

07-Nov-17

Client: GHD

Project: A 14

Sample ID	**MB-34708**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**34708**	RunNo:	**46775**					
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**	SeqNo:	**1491544**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	**LCS-34708**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**34708**	RunNo:	**46775**					
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**	SeqNo:	**1491545**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	113	77.3	128			
Toluene	1.1	0.050	1.000	0	109	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	105	80.7	127			
Xylenes, Total	3.1	0.10	3.000	0	102	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID	**1710F02-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**S-11135250-08-1024**	Batch ID:	**34708**	RunNo:	**46775**					
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**	SeqNo:	**1491547**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9425	0	118	80.9	132			
Toluene	1.1	0.047	0.9425	0.01570	115	79.8	136			
Ethylbenzene	1.1	0.047	0.9425	0	113	79.4	140			
Xylenes, Total	3.1	0.094	2.828	0.02439	110	78.5	142			
Surr: 4-Bromofluorobenzene	1.0		0.9425		109	80	120			

Sample ID	**1710F02-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**S-11135250-08-1024**	Batch ID:	**34708**	RunNo:	**46775**					
Prep Date:	**10/30/2017**	Analysis Date:	**10/31/2017**	SeqNo:	**1491548**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9560	0	113	80.9	132	2.27	20	
Toluene	1.1	0.048	0.9560	0.01570	113	79.8	136	0.619	20	
Ethylbenzene	1.1	0.048	0.9560	0	115	79.4	140	3.60	20	
Xylenes, Total	3.3	0.096	2.868	0.02439	113	78.5	142	3.84	20	
Surr: 4-Bromofluorobenzene	1.1		0.9560		110	80	120	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: 1710F02 | RcptNo: 1

Received By: Richie Eriacho 10/26/2017 10:00:00 AM

Completed By: Sophia Campuzano 10/27/2017 3:33:41 PM

Reviewed By: 10/27/17

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	2.6	Good	Yes			

Chain-of-Custody Record

Client: GHD Services, Inc

Mailing Address: 4121 Indian School Rd Ste 200 NE Albuquerque, NM 87110

Phone #: 505 8840672

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-14

Project #: 1113250-08

Project Manager: Bernard Bockisch

Sampler: Michael Gant

On Ice: ☒ Yes ☐ No

Sample Temperature: 2-4 +0-2 = 2.6

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. 1710F02	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)
10/24	1405	S	S-1113250-08-102417-AG-TP-13-4'	4oz Soil Jar	ICE	-001	X		X									X				
10/24	1400		S-1113250-08-102417-AG-TP-14-4'			-002	X		X									X				
10/24	1355		S-1113250-08-102417-AG-TP-15-4'			-003	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/25	0800			10/25/17	0800
10/25/17	1900			10/26/17	1000

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

Courier

Appendix C
Arch Survey

NMCRIS No.: 139360

NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS Activity No.:	2a. Lead Agency:	2b. Other Agency(ies):	3. Lead Agency Report No.:
139360	US Bureau of Land Management Carlsbad Field Office		

4. Title of Report:

A Class III Archaeological Survey for the GHD Energy Transer A-14 Compressor Station Spill, Lea County, New Mexico

Author(s)

Galassini, Stacy K. and Joshua W. Broxson

5. Type of Report

☑ Negative

☐ Positive

6. Investigation Type

☐ Research Design ☑ Archaeological Survey/Inventory ☐ Architectural Survey/Inventory ☐ Test Excavation ☐ Excavation

☐ Collections/Non-Field Study ☐ Compliance Decision Based on Previous Inventory ☐ Overview/Lit Review ☐ Monitoring

☐ Ethnographic Study ☐ Site/Property Specific Visit ☐ Historic Structures Report ☐ Other

7. Description of Undertaking (what does the project entail?):

The Energy Transer A-14 Compressor Station Spill lies in Lea County, NM, on federal land in Section 6 of T24S R35E. The spill extends north from a compressor station and totals 11.85 Per a pre-field consultation with BLM/CFO archaeologist B. Boeke conducted on November 8, 2017, the spill area and a 100 ft. buffer surrounding the spill was conducted. The survey area totals 18.65 acres.

[ ] Continuation

8. Dates of Investigation: from: 15-Nov-2017 to: 15-Nov-2017

9. Report Date: 16-Nov-2017

10. Performing Agency/Consultant: Boone Archaeological Resource Consultants, LLC.

Principal Investigator: Stacy K. Galassini

Field Supervisor: Willi Hermann

Field Personnel Names: Willi Hermann
Katie Hill

Historian / Other:

11. Performing Agency/Consultant Report No.:

BARC 11-17-04

12. Applicable Cultural Resource Permit No(s):

BLM Permit No.: 190-2920-16-V

NMCRIS No.: 139360

13. Client/Customer (project proponent):

GHD

Contact: Alan Brandon

Address: **Phone:** 505 697 2025

14. Client/Customer Project No.:

15. Land Ownership Status (must be indicated on project map):

Land Owner (By Agency)	Acres Surveyed	Acres in APE
US Bureau of Land Management Carlsbad Field Office	18.65	18.65
TOTALS	18.65	18.65

16. Records Search(es):

Date(s) of HPD/ARMS File Review: 08 Nov 2017	Name of Reviewer(s): S.K. Galassini	
Date(s) of Other Agency File Review: 08 Nov 2017	Name of Reviewer(s): S.K. Galassini	Agency: BLM/CFO

17. Survey Data:

a. Source Graphics [ ] NAD 27 [x] NAD 83 Note: NAD 83 is the NMCRIS standard.

☑ **USGS 7.5' (1:24,000) topo map** ☐ **Other topo map, Scale:**

☑ **GPS Unit Accuracy** ☑ **<1.0m** ☐ **1-10m** ☐ **10-100m** ☐ **>100m** ☐ **Aerial Photo(s)**

Other Source Graphic(s):

b. USGS 7.5' Topographic Map Name **USGS Quad Code**

Woodley Flat, NM	32103-B4

c. County(ies): LEA

d. Nearest City or Town: Jal, NM

e. Legal Description:

Township (N/S)	Range (E/W)	Section
24S	35E	6

Projected legal description? [ ] Yes [x] No [ ] Unplatted

f. Other Description (e.g. well pad footages, mile markers, plats, land grant name, etc.):

[ ] Continuation

18. Survey Field Methods:

Intensity: ☑ 100% coverage ☐ <100% coverage

NMCRIS No.: 139360

Configuration: ☑ block survey units ☐ linear survey units (l x w):
☐ other survey units (specify):

Scope: ☑ non-selective (all sites/properties recorded) ☐ selective/thematic (selected sites/properties recorded)

Coverage Method: ☑ systematic pedestrian coverage

☐ other method (describe):

Survey Interval (m): 15 **Crew Size:** 2 **Fieldwork Dates:** from: 15-Nov-2017 to: 15-Nov-2017

Survey Person Hours: 2.00 **Recording Person Hours:** 0.00 **Total Hours:** 2.00

Additional Narrative:

The project was surveyed using 50 ft. parallel transects across an irregularly shaped block survey area. The survey area totals 18.65 acres.
The project falls within ¼ mile of one previously recorded archaeological site: LA 132929.

[ ] Continuation

19. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):

According to the Natural Resources Conservation Service' online database, the project area soils consist of Tonuco soils. These soils are associated with the Shallow Sandy ecological site (R042CX002NM) which typically supports black grama grasslands with a sparse distribution of prickly pear, four-wing saltbush, catclaw, mesquite, American tarbush, and cholla. The current vegetative community consists of mesquite, broom snakeweed, sunflower, barrel cactus, horse crippler, prickly pear, and desert grasses and forbs. The project lies on a relatively flat terrain approximately 3.9 miles south of San Simon Swale and 4.5 miles north of Antelope Draw. The elevation ranges from 3,460 ft. to 3,470 ft. above mean sea level.

[ ] Continuation

20.a. Percent Ground Visibility: 76% - 99% **b. Condition of Survey Area (grazed, bladed, undistributed, etc.):**

The survey area surrounds the spill and has also been disturbed by a buried pipeline, well pad, lease road, flowline, electric line, erosion and burrowing.

[ ] Continuation

21. CULTURAL RESOURCE FINDINGS ☐ **Yes, see next report section** ☑ **No, discuss why:**

No cultural resources were updated or recorded during the survey. The lack of cultural materials is likely due to the high level of disturbance within the survey area.

[ ] Continuation

22. Attachments (check all appropriate boxes):

[x] USGS 7.5 Topographic Map with sites, isolates, and survey area clearly drawn (required)

[x] Copy of NMCRIS Map Check (required)

[ ] LA Site Forms - new sites (with sketch map & topographic map) if applicable

[ ] LA Site Forms (update) - previously recorded & un-relocated sites (first 2 pages minimum)

[ ] Historic Cultural Property Inventory Forms, if applicable

[ ] List and Description of Isolates, if applicable

[ ] List and Description of Collections, if applicable

23. Other Attachments:

[ ] Photographs and Log

[x] Other Attachments (Describe): Pre-field Form

NMCRIS No.: 139360

24. I certify the information provided above is correct and accurate and meets all applicable agency standards.

Principal Investigator/Qualified Supervisor: **Printed Name:** Stacy K. Galassini

Signature: Stacy K. Galassini **Date:** 11/25/17 **Title:** Principal Investigator

25. Reviewing Agency	**26. SHPO**
Reviewer's Name/Date:	**Reviewer's Name/Date:**
Accepted [ ] **Rejected [ ]**	**HPD Log #:**
	Date sent to ARMS:

CULTURAL RESOURCE FINDINGS

[fill in appropriate section(s)]

SURVEY RESULTS:

Archaeological Sites discovered and registered: 0

Archaeological Sites discovered and NOT registered: 0

Previously recorded archaeological sites revisited (site update form required): 0

Previously recorded archaeological sites not relocated (site update form required): 0

TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0

Total isolates recorded: 0 ☑ **Non-selective isolate recording?**

HCPI properties discovered and registered: 0

HCPI properties discovered and NOT registered: 0

Previously recorded HCPI properties revisited: 0

Previously recorded HCPI properties not relocated: 0

TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 0

MANAGEMENT SUMMARY:

No cultural resources were updated or recorded during the survey. The proposed spill remediation is recommended for approval. If cultural materials are encountered during the clean-up process, work should be halted and archaeologists with the BLM/CFO should be notified immediately.

[ ] Continuation

IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

Sites/Properties Discovered:

LA/HCPI No. **Field/Agency No.** **Eligible? (Y/N/U, applicable criteria)**

NMCRIS No.: 139360

Previously recorded revisited sites/HCPI properties:

LA/HCPI No. **Field/Agency No.** **Eligible? (Y/N/U, applicable criteria)**

MONITORING LA NUMBER LOG (site form required)

Sites Discovered (site form required):

LA No. **Field/Agency No.**

Previously recorded sites (site update form required):

LA No. **Field/Agency No.**

Areas outside known nearby site boundaries monitored? **[ ] Yes** **[ ] No, Explain why:**

TESTING & EXCAVATION LA NUMBER LOG (site form required)

Tested LA number(s)

Excavated LA number(s)

A Class III Archaeological Survey for the GHD Energy
Transer A-14 Compressor Station Spill, Lea County, New Mexico

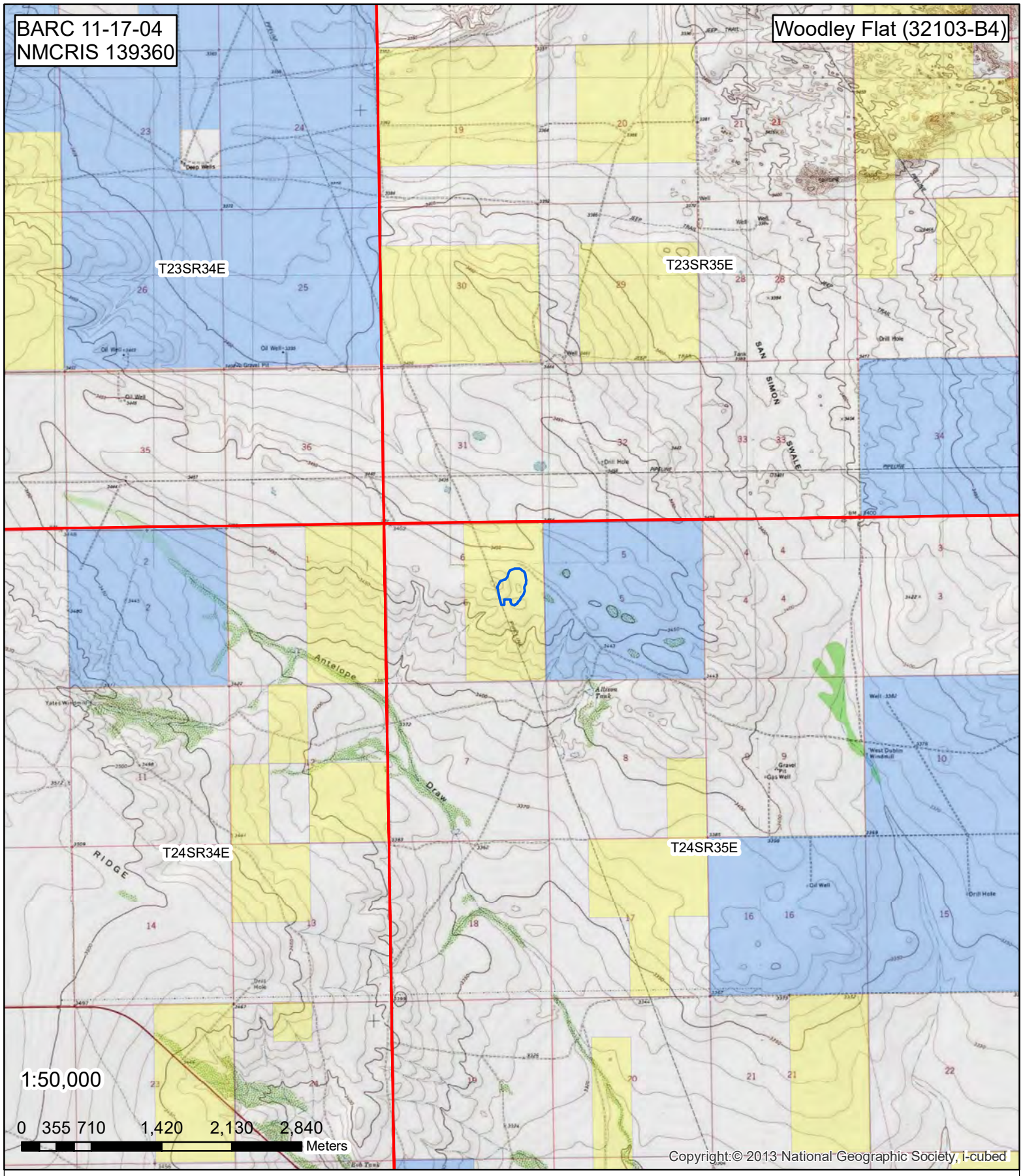


Figure 1. Spill Area

Survey Area | BLM | Private | NM State

N
W E
S

A Class III Archaeological Survey for the GHD Energy
Transer A-14 Compressor Station Spill, Lea County, New Mexico

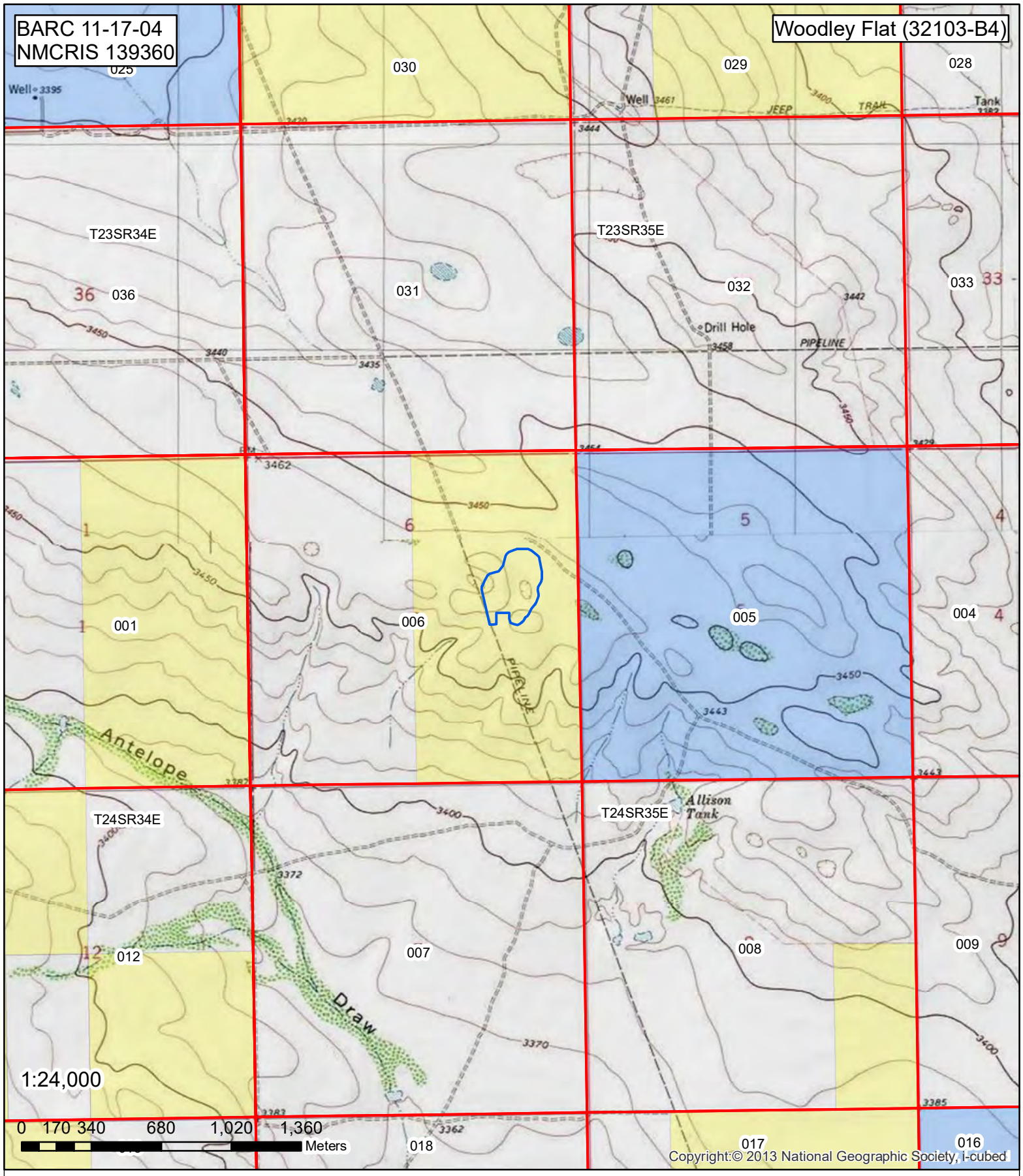


Figure 2. Current & Previous Survey Results

Survey Area | BLM | Private | NM State

N W E S

A Class III Archaeological Survey for the GHD Energy
Transer A-14 Compressor Station Spill, Lea County, New Mexico

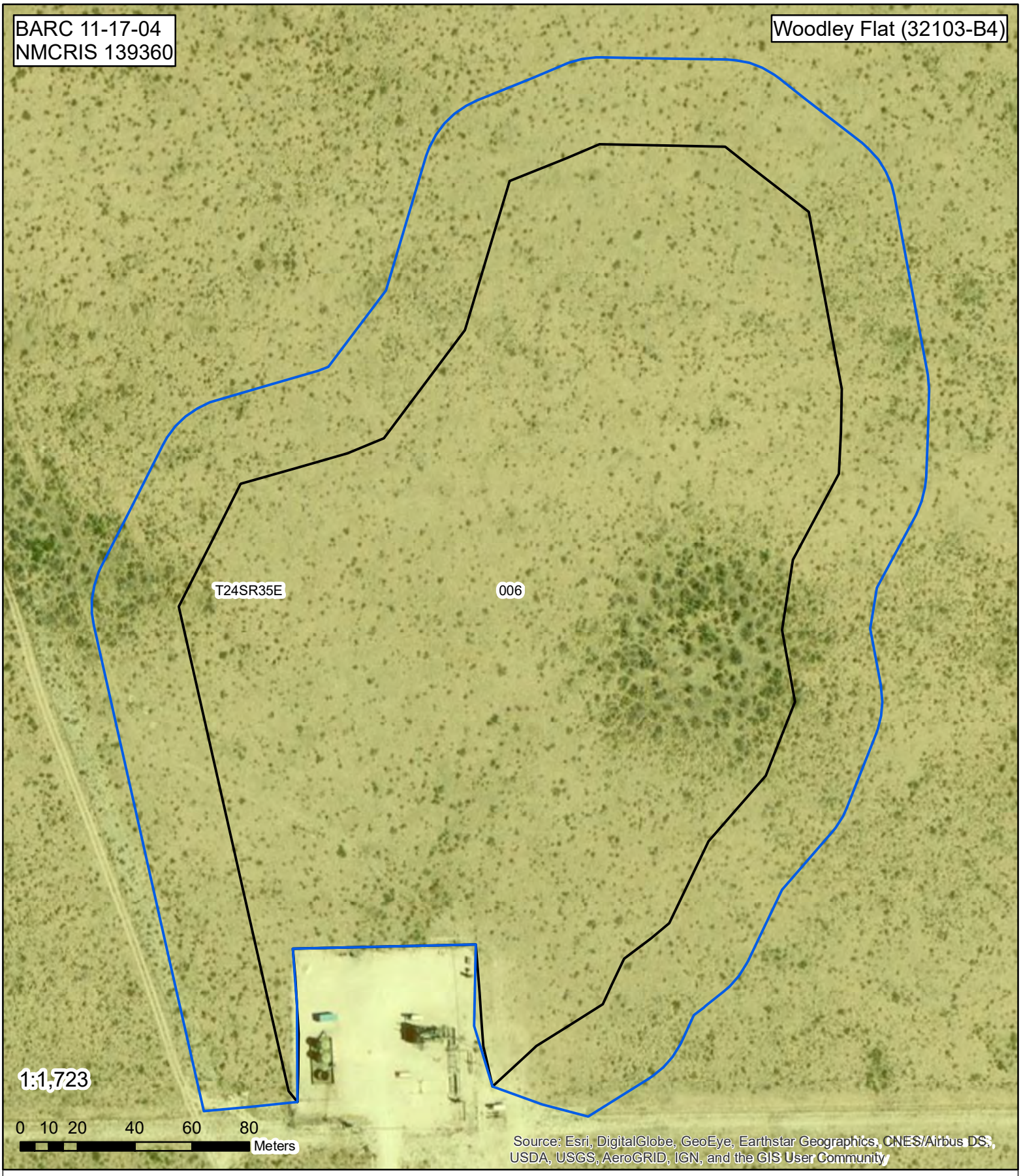


Figure 3. Survey Area

Survey Area | Spill | Archaeological Site | BLM | Private | NM State

N
W E
S

Form 8151-3

Authorization # (BLM Use):

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FIELDWORK AUTHORIZATION REQUEST

To Conduct Specific Cultural Resource Work Under the Authority of a Cultural Resource Use Permit Issued by the Bureau of Land Management Pursuant to Sec. 302(b) of P.L. 94-579, October 21, 1976, 43 U.S.C. 1732 and Sec. 4 of P.L. 96-95, October 31, 1979, 16 U.S.C. 470cc

1. Name of Permittee and Company

Stacy K. Galassini - Boone Archaeological Resource Consultants, LLC

2. Date Permit Issued

07/26/2016

3. Contact Telephone Number

575-885-1352

4. Project Name and Client Name

BARC 1117004
GHD Brandon, Alan (505) 697-2025
Energy Transfer A-14 Compressor Station

5. Location of Work or Legal Description (Include map)

a. Description of Public Lands Involved

T24S R35E S6

Agency: BLM Secondary:

6. Nature of Cultural Resource Work (Survey, APE, etc.

a. Identification of Previous Surveys and Sites (if applicable)

SURVEY

7. Name of Individual(s) Responsible for Planning Supervising Field Work, Approving Reports, Evaluations, Recommendations

Stacy K. Galassini

8. Signature of Individual Conducting Pre-Field Consultation — **9. Date**

Stacy Galassini — 11/7/2017

· The individual named in item 7 above shall be present during the conduct of field work authorized herein, or shall notify the authorized officer of the need for any extended absence, and shall make provision that the work will be carried out under supervision of equal quality, by an individual approved by the authorized officer.

· All terms and conditions of the permit continue to apply; any special conditions attached hereto have the same force and effect as conditions of the permit.

· Permittee shall immediately notify the authorized officer of any change in items 3 through 7 above.

Fieldwork Authorization Request approved by: [signature]

(Signature of BLM Authorized Officer)

Date: 11-8-17

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