Robert Speer
Portfolio Manager,
Upstream Business Unit
Remediation Team

Chevron Environmental Management Company
1400 Smith St. 07049
Houston, TX 77002
Tel (731) 372-6117
Cell (713) 301-7274
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January 25, 2017

Olivia Yu
Environmental Specialist, District 1
New Mexico Oil Conservation Division
1625 N. French Dr.
Hobbs, NM 88240

Re: VGSAU 148 Soil Assessment and Delineation Report

Dear Ms. Yu:

Please find enclosed for your files copies of the following report for the VGSAU 148 produced water release project site.

- *VGSAU 148 – 2016 Soil Assessment and Delineation Report, Unit N - Section 1 – Township 18 South – Range 34 East, Lea County, NM*

This report was prepared by Conestoga-Rovers & Associates (CRA) on behalf of Chevron Environmental Management Company (CEMC) to document assessment activities for a release of between 153 bbls of produced water due to the failure of a produced water flow line as documented in our June 2015 submittal of form C-141. Soil sampling in the release area indicate that vertical and horizontal delineation of Chlorides have not been achieved at the site, and that further assessment activities are warranted for this project.

Should you have any questions regarding the content of this report, please do not hesitate to contact me. I look forward to working with you in the future.

Sincerely,

Rob Speer
Environmental Project Manager

Soil Assessment and Delineation Activities Report

VGSAU #148

Produced Water Release

Lea County, New Mexico

Chevron Environmental Management Company

GHD | 6320 Rothway Street Suite 100 Houston Texas 77040

11121241 | Report No 1 | November 2016

Soil Assessment and Delineation Activities Report

VGSAU #148
Produced Water Release
Lea County, New Mexico

Chevron Environmental Management Company

Scott Foord
Project Manager

Bernie Bockisch
Senior Project Manager

GHD | 6320 Rothway, Suite 100, Houston, Texas USA

11121241 | Report No 1 | November 2016

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1. Introduction

GHD is pleased to present this *Soil Assessment and Delineation Activities Report* to Chevron Environmental Management Company (Chevron). The project is the VGSAU #148 produced water release location (hereafter referred to as the "Site").

2. Project Information and Background

The Site is located in Unit N, Section 1, Township 18 South, Range 34 East, approximately one-half mile south of the Chevron Buckeye Field Management Team office in Lea County, New Mexico. The site is located within the Vacuum (Grayburg-San Andres) oil field (Figure 1).

The release site is situated proximate to multiple produced water and oil gathering lines that converge at a surface manifold location. According to the New Mexico Oil Conservation Division (NMOCD) Release Notification and Corrective Action Form C-141 submitted to the agency by Chevron, the release occurred on June 22, 2015 and was immediately reported to Ms. Kellie Jones, Hobbs District 1 NMOCD office. The volume of the spill was reported as 153.55 barrels of produced water of which 30 barrels were recovered. A failure of a fiberglass water line was listed as the cause of the release. Form C-141 is provided in Appendix A.

In June 2016, Chevron contracted GHD to perform a soil assessment at the Site by implementing a soil boring program. In June 2016, GHD advanced five soil borings (SB-1 through SB-5) utilizing an air-rotary drilling rig. Four additional soil borings (SB-6 through SB-9) were advanced during a second mobilization in August 2016. All borings were drilled to depths of approximately 50 feet below ground surface (bgs). The findings of the investigations are presented in this report.

3. Recommended Remediation Action Limits

Information available on the Petroleum Recovery Research Center (PRRC) Mapping Portal, current (GHD) managed groundwater site(s) data, and the United States Geological Survey (USGS) Current Water Database for the Nation indicate:

- The depth to groundwater at the Site is greater than 100 feet bgs.
- The nearest private domestic water source is greater than 200 feet from the release site.
- The nearest public/municipal water source is greater than 1,000 feet from the release site.
- The release site lies more than 1,000 horizontal feet from the nearest surface water body.

As summarized below, the NMOCD ranking criteria total score for the Site is 0. The anticipated site-specific Recommended Remediation Action Levels (RRALs) to be applied to this location by the NMOCD are 10 milligrams per kilogram (mg/kg) for benzene; 50 mg/kg for total benzene, toluene, ethylbenzene and xylenes (BTEX); 5,000 mg/kg for total petroleum hydrocarbons (TPH); and an NMOCD-accepted 500 mg/kg for chlorides.

New Mexico Oil Conservation Division Site Assessment	
Depth to Ground Water (> 100 feet)	0
Wellhead Protection Area (> 1000 feet from water source, > 200 feet from domestic source)	0
Distance to Surface Body Water (> 1000 horizontal feet)	0
Ranking Criteria Total Score	**0***
*Because the ranking criteria total score is 0, NMOCD established RRALs are 50 mg/kg for BTEX, 5,000 mg/kg TPH (GRO + DRO), and 500 mg/kg for chlorides[1].	

[1] NMOCD Guidance for Remediation of Leaks, Spills and Releases, August 13, 1993

4. Drilling and Sampling

In June 2016, Chevron contracted GHD to perform a soil assessment at the Site by implementing a soil boring program. On June 13 and 14, 2016, GHD subcontractor Harrison Cooper, Inc. (HCI) advanced five soil borings (SB-1 through SB-5) utilizing an air-rotary drilling rig to depths of approximately 50 feet below ground surface (bgs). To complete additional assessment for chloride concentrations in soil, Chevron approved a scope of work by GHD dated June 30, 2016 to Chevron to advance additional borings. On August 22 and 23, 2016, subcontractor HCI advanced four additional soil borings (SB-6 through SB-9) to 50 feet bgs.

Drill cuttings were logged in accordance with the Unified Soil Classification System. Samples were collected for laboratory analysis from each boring at select intervals ranging from 5 to 50 feet below ground surface (bgs) and screened for organic vapors with a photoionization detector (PID). Soil samples were placed into laboratory-supplied jars and stored in a cooler with ice. The soil samples were shipped to Xenco Laboratories in Midland, Texas. Samples collected during the June mobilization (SB-1 through SB-5) were submitted for analysis of BTEX by EPA Method 8021B, TPH by Method SW8015B, and chlorides by EPA Method 300.0. Samples collected during the August mobilization (SB-6 through SB-9) were limited to chlorides analysis only.

Boring logs are provided in Appendix B. Laboratory analytical reports are provided in Appendix C. Following completion of activities during each mobilization, the borings were backfilled with hydrated bentonite pellets to the ground surface. Soil cuttings were thin-spread on site based on field screening results.

4.1 Analytical Results

All samples collected during the June mobilization (SB-1 through SB-5) were below the NMOCD Site-specific RRAL for TPH (5,000 mg/kg) and total BTEX (50 mg/kg). Chloride concentrations in samples collected from SB-2, SB-3, and SB-5 exceeded the NMOCD Site-specific RRAL of 500 mg/kg for chlorides. The chloride concentrations ranged from 813 mg/kg to 4,210 mg/kg at depths ranging from 5 to 10 feet bgs.

Samples collected for chlorides analysis during the August mobilization (SB-6 through SB-9) were below the NMOCD RRAL in all but two samples. Chloride exceeded the RRAL in SB-7, 20 ft. bgs at 954 mg/kg, and in SB-9, 5 ft. bgs at 6,540 mg/kg.

Analytical results are summarized in Table 1. Chloride results are presented on Figure 2, and BTEX-TPH results are presented on Figure 3. Analytical reports are provided in Appendix C.

5. Conclusions

Analytical results associated with assessment activities conducted in June and August 2016 indicate that the horizontal extent of chloride impacts in soil have not been fully delineated. Additional delineation is needed to the west of SB-7 and to the east of SB-9. Details of the proposed additional assessment activities are described below.

6. Path Forward - Delineation

GHD proposes to advance four (4) additional soil borings to delineate the chloride exceedances in SB-7 and SB-9 (Figure 4). Field screening of soil cuttings for chlorides will be performed to guide drilling activities, and the terminal depth of each boring will be based on these field screening results. The following outlines basic project details that will be completed by GHD and GHD subcontractors:

Field Program

The field program will consist of the following:

Soil Boring Installation:

- Prior to mobilizing the drilling equipment to the Site, a site visit will be performed by GHD to mark the proposed boring locations for New Mexico 811 notification. A One Call ticket will be initiated by the driller to identify subsurface hazards within the proposed drilling areas. Chevron will spot locate any underground utilities and/or pipelines within the assessment area;
- A ground penetrating radar (GPR) survey will be conducted across the Site for additional utility clearance assurance and the findings of the survey will be marked, as appropriate;
- GHD will coordinate all field work with management personnel of the Chevron Buckeye FMT. A MCBU Dig Plan and Buckeye FMT excavation permit will be acquired before performing the proposed tasks;
- A post-hole digger, hydro-excavation methods or similar borehole clearance equipment will be utilized to clear each boring location to a depth of approximately 5-feet bgs (or refusal) and approximately 8-inches in diameter. An air-rotary drilling rig, operated by a licensed State of New Mexico water well driller, will be utilized to advance the proposed borings;
- A geologist will record the subsurface lithology and sample data on soil boring logs. At a minimum, soil samples will be collected at ten foot intervals. A chloride field sampling kit will be used to field test intervals during boring activities. The total depth and nature of any sampling of soils will be based on results of the chloride field screening and the professional judgment of the GHD geologist with the intent to establish the depth at which soil concentrations are below the Site RRAL's.

- Selected soil samples will be submitted to Xenco Laboratories, Midland, Texas for analysis of chlorides by EPA Method 300.0; and
- The soil borings will be properly plugged with bentonite.

Health and Safety Considerations

Personal protective equipment, including fire-retardant clothing, steel-toed work boots, gloves, safety glasses, and hard hats will be required during all field tasks. The project health and safety plan will be maintained on Site and will be reviewed and signed by on-Site personnel, subcontractors, and authorized visitors.

Quality Assurance/ Quality Control

Confirmation soil sampling will be completed in accordance with our standard Quality Assurance/ Quality Control procedures designed to minimize cross-contamination between samples and to provide reliable laboratory results.

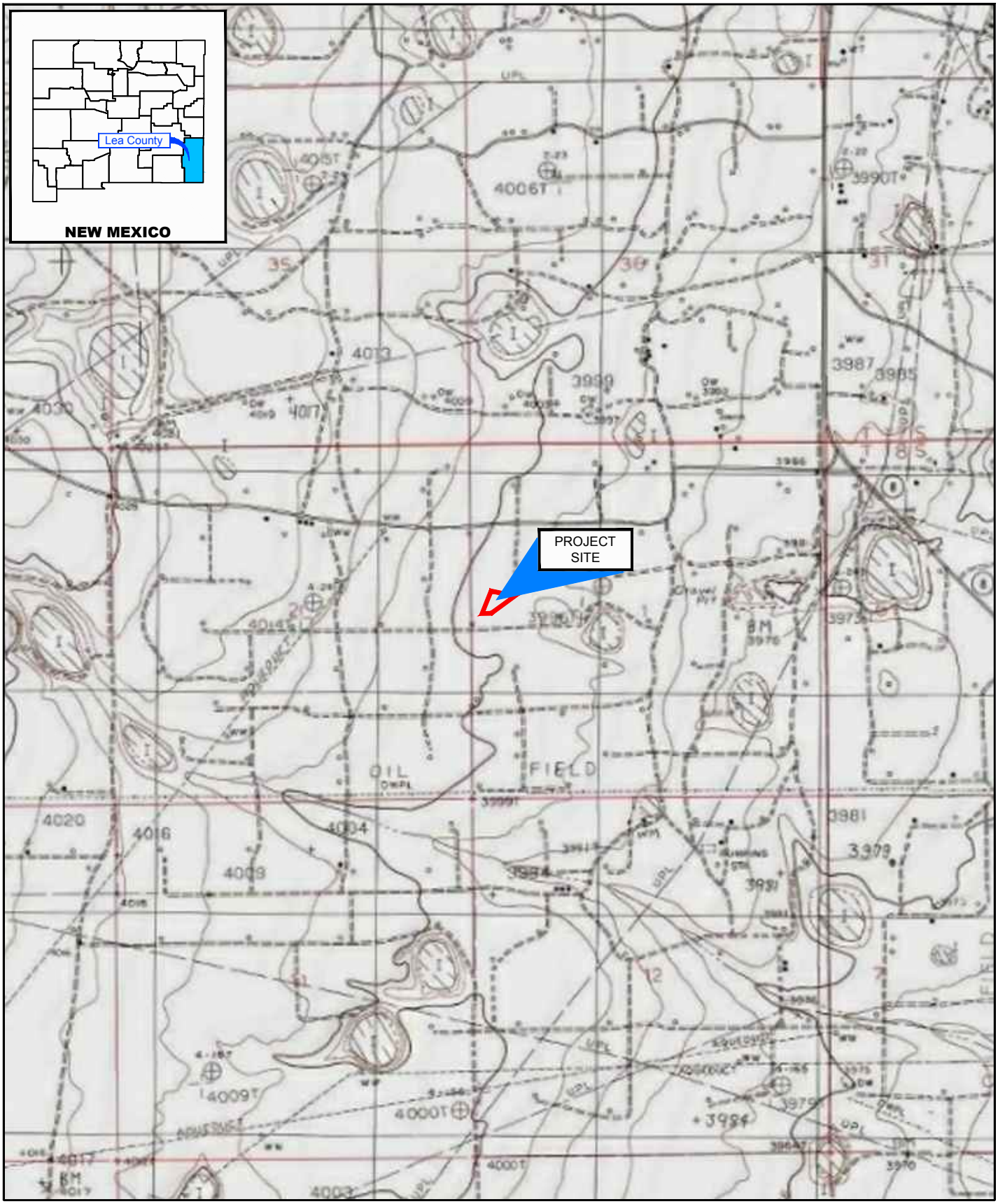
Reporting

A letter report summarizing remediation activities will be submitted. The letter report will include a Site description, project history, description of field events, a discussion of results, and recommendations (if any).

The report will include:

- A scaled Site plan showing the locations of the soil borings and other Site features;
- Soil boring logs;
- Tabulation of field screening and laboratory analytical results;
- Copies of landfill manifests; and
- Geotagged photographic documentation of field activities.

Figures



Source: USGS 7.5 Minute Quad "Buckeye and Lovington SW, New Mexico"

Lat/Long: 32.777256° North, -103.521904° West

0 1000 2000ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
BUCKEYE FMT, LEA COUNTY, NEW MEXICO
VGSAU 148 PRODUCED WATER RELEASE ASSESSMENT

11121241-00

Jun 27, 2016

SITE LOCATION MAP

FIGURE 1

CAD File: G:\CAD\Files\Eight Digit Job Numbers\1112----\11121241-CEMC-Buckeye_VGSAU 148\11121241-00(001)\11121241-00(001)GN-DL002.dwg

Source: Microsoft and Affiliated Data Providers

Lat/Long: 32.777256° North, -103.521904° West

0 50 100ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
BUCKEYE FMT, LEA COUNTY, NEW MEXICO
VGSAU 148 PRODUCED WATER RELEASE ASSESSMENT

11121241-00

Dec 21, 2016

CHLORIDE CONCENTRATION MAP FIGURE 2

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1112----\11121241-CEMC-Buckeye_VGSAU 148\11121241-00(001)\11121241-00(001)GN-DL002.dwg

Source: Microsoft and Affiliated Data Providers

Lat/Long: 32.777256° North, -103.521904° West

0 50 100ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
BUCKEYE FMT, LEA COUNTY, NEW MEXICO
VGSAU 148 PRODUCED WATER RELEASE ASSESSMENT

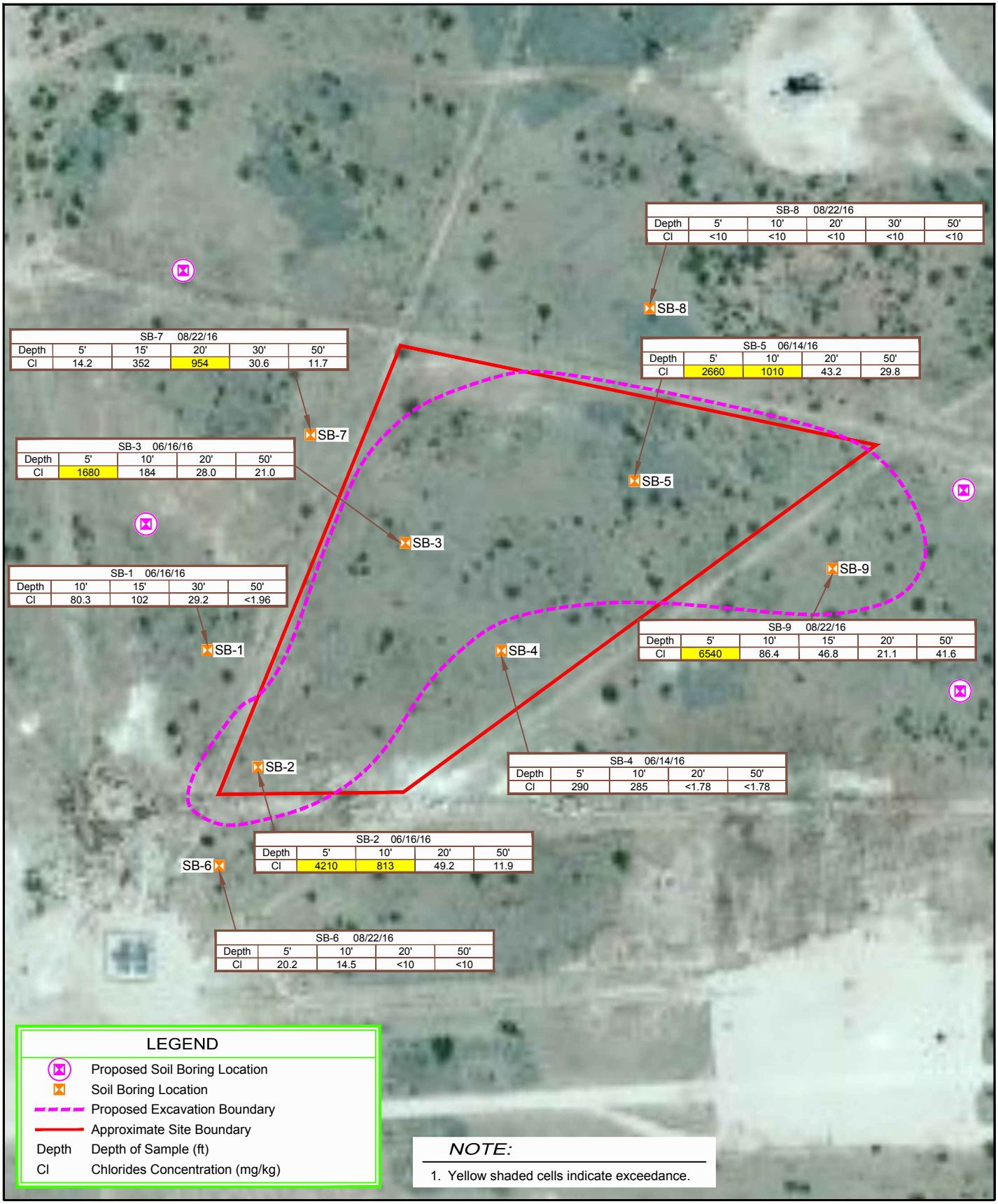
11121241-00

Sep 22, 2016

TOTAL BTEX AND TPH CONCENTRATION MAP

FIGURE 3

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1112----\11121241-CEMC-Buckeye_VGSAU 148\11121241-00(001)\11121241-00(001)GN-DL002.dwg



Source: Microsoft and Affiliated Data Providers

Lat/Long: 32.777256° North, -103.521904° West

0 50 100ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
BUCKEYE FMT, LEA COUNTY, NEW MEXICO
VGSAU 148 PRODUCED WATER RELEASE ASSESSMENT

11121241-00

Dec 21, 2016

PROPOSED SOIL BORING LOCATION EXCAVATION BOUNDARY MAP

FIGURE 4

CAD File: I:\CAD\Files\Eight Digit Job Numbers\1112----\11121241-CEMC-Buckeye_VGSAU 148\11121241-00(001)\11121241-00(001)GN-DL002.dwg

Tables

Table 1
Soil Analytical Summary - 2016
CEMC - VGSAU 148
Lea County, New Mexico

Location ID	Sample Name	Sample Date	Depth	Volatile Organic							Total Petroleum Hydrocarbons (TPH)				Wet Chemistry	
				Benzene	Ethylbenzene	m&p-Xylenes	o-Xylene	Toluene	Total BTEX	Xylenes (total)	Total Petroleum Hydrocarbons (>C28-C35)	Total Petroleum Hydrocarbons (C10-C28)	Total Petroleum Hydrocarbons (C6-C10)	Total Petroleum Hydrocarbons (C6-C35)	Moisture	Chloride
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	mg/kg
RRALs				0.2	--	--	--	--	50	--	500	500	500	--	--	500
SB-1	SB-1-10-161306	06/13/2016	10 ft BGS	0.000348 U	0.000509 U	0.00176 U	0.000877 U	0.00104 U	0.000348 U	0.000877 U	10.2 U	10.2 U	10.2 U	10.2 U	3.78	80.3
SB-1	SB-1-15-161306	06/13/2016	15 ft BGS	0.000348 U	0.000508 U	0.00176 U	0.000876 U	0.00104 U	0.000348 U	0.000876 U	10.2 U	10.2 U	10.2 U	10.2 U	3.68	102
SB-1	SB-1-30-161306	06/13/2016	30 ft BGS	0.000358 U	0.000523 U	0.00181 U	0.000901 U	0.00107 U	0.000358 U	0.000901 U	10.6 U	10.6 U	10.6 U	10.6 U	6.78	29.2
SB-1	SB-1-50-161306	06/13/2016	50 ft BGS	0.000385 U	0.000563 U	0.00195 U	0.000971 U	0.00115 U	0.000385 U	0.000971 U	11.3 U	11.3 U	11.3 U	11.3 U	13.2	1.96 U
SB-2	SB-2-5-161306	06/13/2016	5 ft BGS	0.000359 U	0.000524 U	0.00182 U	0.000904 U	0.00107 U	0.000359 U	0.000904 U	10.6 U	10.6 U	10.6 U	10.6 U	7.23	4210
SB-2	SB-2-10-161306	06/13/2016	10 ft BGS	0.000353 U	0.000516 U	0.00179 U	0.000890 U	0.00105 U	0.000353 U	0.000890 U	10.4 U	10.4 U	10.4 U	10.4 U	5.21	813
SB-2	SB-2-20-161306	06/13/2016	20 ft BGS	0.000354 U	0.000518 U	0.00180 U	0.000893 U	0.00106 U	0.000354 U	0.000893 U	10.5 U	10.5 U	10.5 U	10.5 U	5.68	49.2
SB-2	SB-2-50-161306	06/13/2016	50 ft BGS	0.000352 U	0.000514 U	0.00178 U	0.000887 U	0.00105 U	0.000352 U	0.000887 U	10.3 U	10.3 U	10.3 U	10.3 U	4.65	11.9
SB-3	SB-3-5-161306	06/13/2016	5 ft BGS	0.000350 U	0.000512 U	0.00177 U	0.000882 U	0.00104 U	0.000350 U	0.000882 U	10.3 U	10.3 U	10.3 U	10.3 U	4.76	1680
SB-3	SB-3-10-161306	06/13/2016	10 ft BGS	0.000341 U	0.000499 U	0.00173 U	0.000861 U	0.00102 U	0.000341 U	0.000861 U	10.1 U	10.1 U	10.1 U	10.1 U	1.97	184
SB-3	SB-3-20-161306	06/13/2016	20 ft BGS	0.000349 U	0.000511 U	0.00177 U	0.000880 U	0.00104 U	0.000349 U	0.000880 U	10.3 U	10.3 U	10.3 U	10.3 U	4.72	28.0
SB-3	SB-3-50-161306	06/13/2016	50 ft BGS	0.000348 U	0.000509 U	0.00177 U	0.000878 U	0.00104 U	0.000348 U	0.000878 U	10.3 U	10.3 U	10.3 U	10.3 U	3.89	21.0
SB-4	SB-4-5-161306	06/14/2016	5 ft BGS	0.000354 U	0.000517 U	0.00179 U	0.000892 U	0.00105 U	0.000354 U	0.000892 U	10.5 U	19.1	10.5 U	19.1	5.77	290
SB-4	SB-4-10-161306	06/14/2016	10 ft BGS	0.000353 U	0.000516 U	0.00179 U	0.000890 U	0.00105 U	0.000353 U	0.000890 U	10.4 U	25.3	10.4 U	25.3	5.22	285
SB-4	SB-4-30-161306	06/14/2016	30 ft BGS	0.000349 U	0.000510 U	0.00177 U	0.000879 U	0.00104 U	0.000349 U	0.000879 U	10.3 U	10.3 U	10.3 U	10.3 U	4.43	1.78 U
SB-4	SB-4-50-161306	06/14/2016	50 ft BGS	0.000349 U	0.000510 U	0.00177 U	0.000879 U	0.00104 U	0.000349 U	0.000879 U	10.3 U	10.3 U	10.3 U	10.3 U	4.01	1.78 U
SB-5	SB-5-5-161306	06/14/2016	5 ft BGS	0.000368 U	0.000537 U	0.00186 U	0.000926 U	0.00110 U	0.000368 U	0.000926 U	10.8 U	10.8 U	10.8 U	10.8 U	8.74	2660
SB-5	SB-5-10-161306	06/14/2016	10 ft BGS	0.000365 U	0.000534 U	0.00185 U	0.000921 U	0.00109 U	0.000365 U	0.000921 U	10.8 U	10.8 U	10.8 U	10.8 U	8.36	1010
SB-5	SB-5-20-161306	06/14/2016	20 ft BGS	0.000347 U	0.000507 U	0.00176 U	0.000874 U	0.00103 U	0.000347 U	0.000874 U	10.3 U	10.3 U	10.3 U	10.3 U	4.00	43.2
SB-5	SB-5-50-161306	06/14/2016	50 ft BGS	0.000349 U	0.000510 U	0.00177 U	0.000880 U	0.00104 U	0.000349 U	0.000880 U	10.3 U	10.3 U	10.3 U	10.3 U	4.08	29.8
SB-6	SB-6-082216-5	08/22/2016	5 ft BGS	--	--	--	--	--	--	--	--	--	--	--	3.21	20.2
SB-6	SB-6-082216-10	08/22/2016	10 ft BGS	--	--	--	--	--	--	--	--	--	--	--	5.83	14.5
SB-6	SB-6-082216-20	08/22/2016	20 ft BGS	--	--	--	--	--	--	--	--	--	--	--	13.6	0.858 U
SB-6	SB-6-082216-50	08/22/2016	50 ft BGS	--	--	--	--	--	--	--	--	--	--	--	5.82	0.858 U
SB-7	SB-7-082216-5	08/22/2016	5 ft BGS	--	--	--	--	--	--	--	--	--	--	--	6.51	14.2
SB-7	SB-7-082216-15	08/22/2016	15 ft BGS	--	--	--	--	--	--	--	--	--	--	--	4.53	352
SB-7	SB-7-082216-20	08/22/2016	20 ft BGS	--	--	--	--	--	--	--	--	--	--	--	7.53	954
SB-7	SB-7-082216-30	08/22/2016	30 ft BGS	--	--	--	--	--	--	--	--	--	--	--	4.08	30.6
SB-7	SB-7-082216-50	08/22/2016	50 ft BGS	--	--	--	--	--	--	--	--	--	--	--	4.39	11.7
SB-8	SB-8-082316-5	08/23/2016	5 ft BGS	--	--	--	--	--	--	--	--	--	--	--	3.12	0.858 U
SB-8	SB-8-082316-10	08/23/2016	10 ft BGS	--	--	--	--	--	--	--	--	--	--	--	6.19	0.858 U
SB-8	SB-8-082316-20	08/23/2016	20 ft BGS	--	--	--	--	--	--	--	--	--	--	--	3.72	0.858 U
SB-8	SB-8-082316-30	08/23/2016	30 ft BGS	--	--	--	--	--	--	--	--	--	--	--	5.23	0.858 U
SB-8	SB-8-082316-50	08/23/2016	50 ft BGS	--	--	--	--	--	--	--	--	--	--	--	4.46	0.858 U
SB-9	SB-9-082316-5	08/23/2016	5 ft BGS	--	--	--	--	--	--	--	--	--	--	--	10.2	6540
SB-9	SB-9-082316-10	08/23/2016	10 ft BGS	--	--	--	--	--	--	--	--	--	--	--	14.3	86.4
SB-9	SB-9-082316-15	08/23/2016	15 ft BGS	--	--	--	--	--	--	--	--	--	--	--	2.66	46.8
SB-9	SB-9-082316-20	08/23/2016	20 ft BGS	--	--	--	--	--	--	--	--	--	--	--	5.43	21.1
SB-9	SB-9-082316-50	08/23/2016	50 ft BGS	--	--	--	--	--	--	--	--	--	--	--	2.79	41.6

Notes:
1. All analytical results reported in (mg/kg) milligrams per kilogram
2. Chloride analysis by EPA Method 300.0
3. BTEX analysis by EPA Method 8021B.
4. TPH analysis by EPA Method 8015B.
5. RRALs from NMOCD (September 2011 Draft) Release Guidance Document
6. bgs- below ground surface
7. Depth reported in feet

Appendices

Appendix A
Original Form C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: Chevron USA Inc.	Contact: James A. Trujillo
Address: 15 Smith Rd., Midland, TX, 79705	Telephone No.: work: 575-704-3146 cell: 575-650-3602
Facility Name: VGSAU 148	Facility Type: Well

Surface Owner: New Mexico	Mineral Owner: New Mexico	API No. 3002530799

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North Line	Feet from the	West Line	County
D	1	18S	34E	1330		660		Lea

Closest well: **Latitude** **Longitude** -

NATURE OF RELEASE

Type of Release: Produced water release to land	Volume of Release: 153.75 BBLS	Volume Recovered: 30 BBLS
Source of Release: Fiberglass line failed	Date and Hour of Occurrence: 06/22/2015 09:30 AM	Date and Hour of Discovery 06/22/2015 09:30 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Kellie Jones	
By Whom? James A. Trujillo	Date and Hour: 06/22/2015 @ 5:26 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

A spill of 153.75 BBLS of produced water was spilled to ground due to a fiberglass line failure.

Describe Area Affected and Cleanup Action Taken.*

The area affected was the VGSAU #148 and a vacuum truck was called out to vacuum up the spill. The next step is for backhoe to excavate top layer of soil approximate 12" deep and soil samples will be taken to the laboratory to determine TPH, Benzene and Chlorides contaminants levels. In case any of the contaminants levels are still high, the spill location will be turned over to Chevron management Company (EMC) for further remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: J.R. Trujillo	OIL CONSERVATION DIVISION	
Printed Name: James A. Trujillo	Approved by Environmental Specialist:	
Title: HES Field Specialist	Approval Date:	Expiration Date:
E-mail Address: jtqo@chevron.com	Conditions of Approval:	Attached ☐
Date: 06/23/2015 Phone: 575-650-3602		

* Attach Additional Sheets If Necessary

Appendix B
Boring Logs

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-1
DATE COMPLETED: 13 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
0	CLAYEY SILT (ML); dull yellow-brown, loose, dry, with caliche fragments in matrix, no hydrocarbon odor	1.00					
2	CALICHE, light yellow-orange, weathered, dense, dry, no hydrocarbon odor						
4							1.7
6							
8							
10			10				2.3
12							
14							
16			15				1.5
18							
20	- turns light gray with moderately well cemented very-fine grained sandstone						1
22							
24	SANDSTONE; light gray to dull yellow-orange, very fine grained, moderately well cemented, dry, no hydrocarbon odor	23.00					
26	SAND (SP); light yellow-orange, very fine grained, loose, with moderately well cemented very fine grained sandstone, dry, no hydrocarbon odor to 50 feet	26.00					
28							
30			30				1.1
32							
34							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-1
DATE COMPLETED: 13 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							1.3
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.0ft BGS	50.00	50				1.7
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-2
DATE COMPLETED: 13 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
	CLAYEY SILT (ML); dull yellow-brown, loose, dry, with caliche fragments in matrix, no hydrocarbon odor	1.00					
	CALICHE, light yellow-orange, weathered, dense, dry, no hydrocarbon odor		5				3.3
			10				2.2
							1.9
			20				2
	SAND (SP); light yellow-orange, very fine grained, loose, with moderately well cemented very fine grained sandstone, dry, no hydrocarbon odor to 50 feet	23.00					1.2

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-2
DATE COMPLETED: 13 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							1.1
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.0ft BGS	50.00	50				0.7
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-3
DATE COMPLETED: 13 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
	CLAYEY SILT (ML); dull yellow-brown, loose, dry, with caliche fragments in matrix, no hydrocarbon odor	1.00					
2	CALICHE, light yellow-orange, weathered, dense, dry, no hydrocarbon odor						
4							
			5				1.6
6							
8							
10	- with moderately well cemented very fine grained sandstone to 23 feet		10				1.2
12							
14							
							1.6
16							
18							
20			20				1.8
22							
	SAND (SP); light yellow-orange, very fine grained, loose, with moderately well cemented very fine grained sandstone, dry, no hydrocarbon odor to 50 feet	23.00					
24							
26							
28							
30							2.1
32							
34							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-3
DATE COMPLETED: 13 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							2.6
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.0ft BGS	50.00	49.5				1.8
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-4
DATE COMPLETED: 14 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
	CLAYEY SILT (ML); dull yellow-brown, loose, dry, with caliche fragments in matrix, no hydrocarbon odor	1.00					
	CALICHE, light yellow-orange, weathered, dense, dry, no hydrocarbon odor		5				1.5
			10				2.1
							2.2
	- with moderately well cemented very fine grained sandstone						2.3
	SAND (SP); light yellow-orange, very fine grained, loose, with moderately well cemented very fine grained sandstone, dry, no hydrocarbon odor to 50 feet	23.00	30				1.7

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-4
DATE COMPLETED: 14 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							1.2
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.0ft BGS	50.00	50				1.5
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-5
DATE COMPLETED: 14 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
0	CLAYEY SILT (ML); dull yellow-brown, loose, dry, with caliche fragments in matrix, no hydrocarbon odor	1.00					
2	CALICHE, light yellow-orange, weathered, dense, dry, no hydrocarbon odor						
4			5				0.7
6							
8							
10			10				0.4
12							
14							0.3
16							
18							
20	- with moderately well cemented very fine grained sandstone		20				0.3
22							
24	SAND (SP); light yellow-orange, very fine grained, loose, with moderately well cemented very fine grained sandstone, dry, no hydrocarbon odor to 50 feet	23.00					
26							
28							
30							0.2
32							
34							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-5
DATE COMPLETED: 14 June 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Ferguson

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							0.1
42							
44							
46							
48							
50	END OF BOREHOLE @ 50.0ft BGS	50.00	50				0.2
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-6
DATE COMPLETED: 22 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
0	SANDY SILT (ML); dull yellow-brown, loose, dry, with some fragmented caliche in matrix, no hydrocarbon odor (native soil)	1.00					
2	CALICHE; light yellow-gray, weathered, dense, loose, dry, no hydrocarbon odor to 27 feet						
4			5				0
6							
8							
10			10				0
12							
14	- with some larger caliche nodules						0
16							
18	- with some larger caliche nodules and minor gravel-sized silty sand congolomerates						0
20			20				
22	- with moderately cemented fine to very-fine grained sandstone						0
24							
26							
28	SAND (SP); light yellow-gray, very fine-grained with moderate to well cemented very-fine grained sandstone, loose, well sorted, dry, no hydrocarbon odor to 50 feet	27.00					0
30							
32							
34							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-6
DATE COMPLETED: 22 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36	- with poorly cemented sandstone						
38							
40	- with moderately well cemented sandstone						
42							
44							
46							
48							
50	- with moderately to poorly cemented sandstone						
	END OF BOREHOLE @ 50.0ft BGS	50.00	50				
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-7
DATE COMPLETED: 22 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
	SANDY SILT (ML); dull yellow-brown, loose, dry, with some fragmented caliche in matrix, no hydrocarbon odor (native soil)	1.00					
2	CALICHE; light yellow-gray, weathered, dense, loose, dry, no hydrocarbon odor to 32 feet						
4							0
			5				
6							
8							
	- with well cemented very-fine grained sandstone						
10							0
12							
14	- with some larger caliche nodules present						0
			10				
16							
18	- with some larger caliche nodules and minor gravel-sized silty sand conglomerates						0
20			20				
22							
	- dull yellow-orange, with well cemented fine to very-fine grained sandstone to 32 feet						
24							
26							
28							
30							0
32							
	SAND (SP); dull yellow-orange, fine to very fine-grained, with poor to moderately well cemented fine to very-fine grained sandstone, loose, well sorted, dry, no hydrocarbon odor to 50 feet	32.00					
34							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-7
DATE COMPLETED: 22 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38	- with moderate to well cemented very-fine grained sandstone						1
40							
42							
44							
46							
48							
50	- with poor to moderately cemented very-fine grained sandstone						0
	END OF BOREHOLE @ 50.0ft BGS	50.00	50				
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-8
DATE COMPLETED: 23 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
0	SANDY SILT (ML); dull yellow-brown, loose, dry, with some fragmented caliche in matrix, no hydrocarbon odor (native soil)	1.00					
2	CALICHE; dull yellow-gray, weathered, dense, loose, dry, no hydrocarbon odor to 32 feet						
4			5				1.6
6							
8							
10	- light yellow-gray		10				1.2
12							
14							0.9
16							
18							
20			20				1.2
22							
24	- dull yellow gray, with small caliche nodules						0.8
26							
28							
30	- with some fine grained sand		30				1.6
32	SAND (SP); dull yellow-orange, fine to very fine-grained, with moderate to well cemented fine to very-fine grained sandstone, loose, well sorted, dry, no hydrocarbon odor to 50 feet	32.00					
34							1.3

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS ( )

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-8
DATE COMPLETED: 23 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							1.4
42							
44							0.8
46							
48							
50	- dull yellow-orange-gray, with well cemented fine to very-fine grained sandstone,		50				0.4
	END OF BOREHOLE @ 50.0ft BGS	50.00					
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-9
DATE COMPLETED: 23 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
0	SANDY SILT (ML); dull yellow-brown, loose, dry, with some fragmented caliche in matrix, no hydrocarbon odor (native soil)	1.00					
2	SAND (SW); dull yellow-orange caliche and fine grained sand, with moderate to well cemented very fine grained sandstone, loose, moderately sorted, dry, no hydrocarbon odor						
4			5				0
6							
8							
10	- poorly sorted		10				1.2
12	CALICHE; light yellow-gray, weathered, dense, loose, dry, no hydrocarbon odor to 23 feet	11.00					
14							1
16			15				
18							
20			20				1.2
22							
24	SAND (SP); dull yellow-orange, fine to very fine-grained, with moderate to well cemented fine to very-fine grained sandstone, loose, well sorted, dry, no hydrocarbon odor to 50 feet	23.00					1.5
26							
28							
30							1.1
32							
34	- with poor to moderately well cemented fine to very-fine grained sandstone						0

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (oval)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: VGSAU # 148
PROJECT NUMBER: 11121241
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: Harrison & Cooper, Inc.

HOLE DESIGNATION: SB-9
DATE COMPLETED: 23 August 2016
DRILLING METHOD: Air Rotary
FIELD PERSONNEL: J. Stoffel

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (ft)	SAMPLE PP (tsf)	SAMPLE PID (ppm)
36							
38							
40							0
42							
44							0
46							
48							
50	END OF BOREHOLE @ 50.0ft BGS	50.00	50				0
52							
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: Stratigraphy descriptions are based on drill cuttings.

LABORATORY ANALYSIS (50)

OVERBURDEN LOG 11121241 CVX VGSAU 148.GPJ CRA_CORP.GDT 7/9/16

Appendix C
Analytical Reports

Analytical Report 531735

for

GHD Services, INC- Midland

Project Manager: Chris Knight

VGSAU 148

11121241

20-JUN-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534-15-1)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

20-JUN-16

Project Manager: **Chris Knight**
GHD Services, INC- Midland
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **531735**
VGSAU 148
Project Address: Lovington, NM

Chris Knight:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 531735. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 531735 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1-10-161306	S	06-13-16 11:10	- 10 ft	531735-001
SB-1-15-161306	S	06-13-16 11:15	- 15 ft	531735-002
SB-1-30-161306	S	06-13-16 11:25	- 30 ft	531735-003
SB-1-50-161306	S	06-13-16 11:35	- 50 ft	531735-004
SB-2-5-161306	S	06-13-16 14:00	- 5 ft	531735-005
SB-2-10-161306	S	06-13-16 14:20	- 10 ft	531735-006
SB-2-20-161306	S	06-13-16 14:25	- 20 ft	531735-007
SB-2-50-161306	S	06-13-16 14:30	- 50 ft	531735-008
SB-3-5-161306	S	06-13-16 15:10	- 5 ft	531735-009
SB-3-10-161306	S	06-13-16 15:15	- 10 ft	531735-010
SB-3-20-161306	S	06-13-16 15:25	- 20 ft	531735-011
SB-3-50-161306	S	06-13-16 15:30	- 50 ft	531735-012
SB-4-5-161306	S	06-14-16 09:55	- 5 ft	531735-013
SB-4-10-161306	S	06-14-16 10:00	- 10 ft	531735-014
SB-4-30-161306	S	06-14-16 10:05	- 30 ft	531735-015
SB-4-50-161306	S	06-14-16 10:10	- 50 ft	531735-016
SB-5-5-161306	S	06-14-16 10:50	- 5 ft	531735-017
SB-5-10-161306	S	06-14-16 10:55	- 10 ft	531735-018
SB-5-20-161306	S	06-14-16 11:00	- 20 ft	531735-019
SB-5-50-161306	S	06-14-16 11:05	- 50 ft	531735-020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-001	Date Collected:	06.13.16 11.10	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	3.78
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**80.3**	10.4	mg/kg	06.16.16 15.45		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	3.78
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.6	mg/kg	06.16.16 11.13	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.6	mg/kg	06.16.16 11.13	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.6	mg/kg	06.16.16 11.13	U	1
Total TPH	PHC635	ND	15.6	mg/kg	06.16.16 11.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-130	06.16.16 11.13	
o-Terphenyl	84-15-1	107	%	70-135	06.16.16 11.13	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-001	Date Collected:	06.13.16 11.10	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	3.78
Analyst:	ARM	Date Prep:	06.15.16 17.00	Basis:	Dry Weight
Seq Number:	996300				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00156	mg/kg	06.15.16 20.02	U	1
Toluene	108-88-3	ND	0.00207	mg/kg	06.15.16 20.02	U	1
Ethylbenzene	100-41-4	ND	0.00207	mg/kg	06.15.16 20.02	U	1
m_p-Xylenes	179601-23-1	ND	0.00207	mg/kg	06.15.16 20.02	U	1
o-Xylene	95-47-6	ND	0.00311	mg/kg	06.15.16 20.02	U	1
Total Xylenes	1330-20-7	ND	0.00207	mg/kg	06.15.16 20.02	U	1
Total BTEX		ND	0.00156	mg/kg	06.15.16 20.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	80-120	06.15.16 20.02	
1,4-Difluorobenzene	540-36-3	101	%	80-120	06.15.16 20.02	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-15-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-002	Date Collected:	06.13.16 11.15	Sample Depth:	15 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	3.68
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**102**	10.4	mg/kg	06.16.16 16.09		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	3.68
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.5	mg/kg	06.16.16 13.16	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.5	mg/kg	06.16.16 13.16	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.5	mg/kg	06.16.16 13.16	U	1
Total TPH	PHC635	ND	15.5	mg/kg	06.16.16 13.16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 13.16	
o-Terphenyl	84-15-1	104	%	70-135	06.16.16 13.16	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-15-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-002	Date Collected:	06.13.16 11.15	Sample Depth:	15 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	3.68
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00155	mg/kg	06.17.16 14.06	U	1
Toluene	108-88-3	ND	0.00207	mg/kg	06.17.16 14.06	U	1
Ethylbenzene	100-41-4	ND	0.00207	mg/kg	06.17.16 14.06	U	1
m_p-Xylenes	179601-23-1	ND	0.00207	mg/kg	06.17.16 14.06	U	1
o-Xylene	95-47-6	ND	0.00311	mg/kg	06.17.16 14.06	U	1
Total Xylenes	1330-20-7	ND	0.00207	mg/kg	06.17.16 14.06	U	1
Total BTEX		ND	0.00155	mg/kg	06.17.16 14.06	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	114	%	80-120	06.17.16 14.06	
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.17.16 14.06	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-30-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-003	Date Collected:	06.13.16 11.25	Sample Depth:	30 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	6.78
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**29.2**	10.7	mg/kg	06.16.16 16.16		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	6.78
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	16.0	mg/kg	06.16.16 13.41	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	16.0	mg/kg	06.16.16 13.41	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	16.0	mg/kg	06.16.16 13.41	U	1
Total TPH	PHC635	ND	16.0	mg/kg	06.16.16 13.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.16.16 13.41	
o-Terphenyl	84-15-1	102	%	70-135	06.16.16 13.41	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-30-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-003	Date Collected:	06.13.16 11.25	Sample Depth:	30 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	6.78
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00160	mg/kg	06.16.16 20.05	U	1
Toluene	108-88-3	ND	0.00213	mg/kg	06.16.16 20.05	U	1
Ethylbenzene	100-41-4	ND	0.00213	mg/kg	06.16.16 20.05	U	1
m_p-Xylenes	179601-23-1	ND	0.00213	mg/kg	06.16.16 20.05	U	1
o-Xylene	95-47-6	ND	0.00320	mg/kg	06.16.16 20.05	U	1
Total Xylenes	1330-20-7	ND	0.00213	mg/kg	06.16.16 20.05	U	1
Total BTEX		ND	0.00160	mg/kg	06.16.16 20.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	80-120	06.16.16 20.05	
1,4-Difluorobenzene	540-36-3	99	%	80-120	06.16.16 20.05	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-004	Date Collected:	06.13.16 11.35	Sample Depth:	50 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	13.15
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	ND	11.5	mg/kg	06.16.16 16.24	U	1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	13.15
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	17.2	mg/kg	06.16.16 14.05	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	17.2	mg/kg	06.16.16 14.05	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	17.2	mg/kg	06.16.16 14.05	U	1
Total TPH	PHC635	ND	17.2	mg/kg	06.16.16 14.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 14.05	
o-Terphenyl	84-15-1	106	%	70-135	06.16.16 14.05	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-1-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-004	Date Collected:	06.13.16 11.35	Sample Depth:	50 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	13.15
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00172	mg/kg	06.17.16 14.23	U	1
Toluene	108-88-3	ND	0.00230	mg/kg	06.17.16 14.23	U	1
Ethylbenzene	100-41-4	ND	0.00230	mg/kg	06.17.16 14.23	U	1
m_p-Xylenes	179601-23-1	ND	0.00230	mg/kg	06.17.16 14.23	U	1
o-Xylene	95-47-6	ND	0.00345	mg/kg	06.17.16 14.23	U	1
Total Xylenes	1330-20-7	ND	0.00230	mg/kg	06.17.16 14.23	U	1
Total BTEX		ND	0.00172	mg/kg	06.17.16 14.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	80-120	06.17.16 14.23	
1,4-Difluorobenzene	540-36-3	106	%	80-120	06.17.16 14.23	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-005	Date Collected:	06.13.16 14.00	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	7.23
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**4210**	216	mg/kg	06.16.16 16.32		20

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	7.23
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	16.2	mg/kg	06.16.16 14.30	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	16.2	mg/kg	06.16.16 14.30	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	16.2	mg/kg	06.16.16 14.30	U	1
Total TPH	PHC635	ND	16.2	mg/kg	06.16.16 14.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.16.16 14.30	
o-Terphenyl	84-15-1	104	%	70-135	06.16.16 14.30	

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GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-005	Date Collected:	06.13.16 14.00	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	7.23
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00160	mg/kg	06.16.16 14.14	U	1
Toluene	108-88-3	ND	0.00214	mg/kg	06.16.16 14.14	U	1
Ethylbenzene	100-41-4	ND	0.00214	mg/kg	06.16.16 14.14	U	1
m_p-Xylenes	179601-23-1	ND	0.00214	mg/kg	06.16.16 14.14	U	1
o-Xylene	95-47-6	ND	0.00321	mg/kg	06.16.16 14.14	U	1
Total Xylenes	1330-20-7	ND	0.00214	mg/kg	06.16.16 14.14	U	1
Total BTEX		ND	0.00160	mg/kg	06.16.16 14.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	106	%	80-120	06.16.16 14.14	
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.16.16 14.14	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-006	Date Collected:	06.13.16 14.20	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	5.21
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**813**	52.7	mg/kg	06.16.16 16.55		5

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	5.21
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.8	mg/kg	06.16.16 14.54	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.8	mg/kg	06.16.16 14.54	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.8	mg/kg	06.16.16 14.54	U	1
Total TPH	PHC635	ND	15.8	mg/kg	06.16.16 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-130	06.16.16 14.54	
o-Terphenyl	84-15-1	107	%	70-135	06.16.16 14.54	

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GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-006	Date Collected:	06.13.16 14.20	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	5.21
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00158	mg/kg	06.16.16 14.30	U	1
Toluene	108-88-3	ND	0.00211	mg/kg	06.16.16 14.30	U	1
Ethylbenzene	100-41-4	ND	0.00211	mg/kg	06.16.16 14.30	U	1
m_p-Xylenes	179601-23-1	ND	0.00211	mg/kg	06.16.16 14.30	U	1
o-Xylene	95-47-6	ND	0.00316	mg/kg	06.16.16 14.30	U	1
Total Xylenes	1330-20-7	ND	0.00211	mg/kg	06.16.16 14.30	U	1
Total BTEX		ND	0.00158	mg/kg	06.16.16 14.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	80-120	06.16.16 14.30	
1,4-Difluorobenzene	540-36-3	102	%	80-120	06.16.16 14.30	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-20-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-007	Date Collected:	06.13.16 14.25	Sample Depth:	20 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	5.68
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.2**	10.6	mg/kg	06.16.16 17.03		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	5.68
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.9	mg/kg	06.16.16 15.19	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.9	mg/kg	06.16.16 15.19	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.9	mg/kg	06.16.16 15.19	U	1
Total TPH	PHC635	ND	15.9	mg/kg	06.16.16 15.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.16.16 15.19	
o-Terphenyl	84-15-1	104	%	70-135	06.16.16 15.19	

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GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-20-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-007	Date Collected:	06.13.16 14.25	Sample Depth:	20 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	5.68
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00158	mg/kg	06.16.16 14.46	U	1
Toluene	108-88-3	ND	0.00211	mg/kg	06.16.16 14.46	U	1
Ethylbenzene	100-41-4	ND	0.00211	mg/kg	06.16.16 14.46	U	1
m_p-Xylenes	179601-23-1	ND	0.00211	mg/kg	06.16.16 14.46	U	1
o-Xylene	95-47-6	ND	0.00317	mg/kg	06.16.16 14.46	U	1
Total Xylenes	1330-20-7	ND	0.00211	mg/kg	06.16.16 14.46	U	1
Total BTEX		ND	0.00158	mg/kg	06.16.16 14.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	80-120	06.16.16 14.46	
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.16.16 14.46	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-2-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-008	Date Collected:	06.13.16 14.30	Sample Depth:	50 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4.65
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11.9**	10.5	mg/kg	06.16.16 17.11		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.65
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.7	mg/kg	06.16.16 15.43	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.7	mg/kg	06.16.16 15.43	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.7	mg/kg	06.16.16 15.43	U	1
Total TPH	PHC635	ND	15.7	mg/kg	06.16.16 15.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	06.16.16 15.43	
o-Terphenyl	84-15-1	105	%	70-135	06.16.16 15.43	

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VGSAU 148

Sample Id:	**SB-2-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-008	Date Collected:	06.13.16 14.30	Sample Depth:	50 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4.65
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00157	mg/kg	06.16.16 15.02	U	1
Toluene	108-88-3	ND	0.00210	mg/kg	06.16.16 15.02	U	1
Ethylbenzene	100-41-4	ND	0.00210	mg/kg	06.16.16 15.02	U	1
m_p-Xylenes	179601-23-1	ND	0.00210	mg/kg	06.16.16 15.02	U	1
o-Xylene	95-47-6	ND	0.00315	mg/kg	06.16.16 15.02	U	1
Total Xylenes	1330-20-7	ND	0.00210	mg/kg	06.16.16 15.02	U	1
Total BTEX		ND	0.00157	mg/kg	06.16.16 15.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	80-120	06.16.16 15.02	
1,4-Difluorobenzene	540-36-3	101	%	80-120	06.16.16 15.02	

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VGSAU 148

Sample Id:	**SB-3-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-009	Date Collected:	06.13.16 15.10	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4.76
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1680**	105	mg/kg	06.16.16 17.19		10

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.76
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.7	mg/kg	06.16.16 16.08	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.7	mg/kg	06.16.16 16.08	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.7	mg/kg	06.16.16 16.08	U	1
Total TPH	PHC635	ND	15.7	mg/kg	06.16.16 16.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-130	06.16.16 16.08	
o-Terphenyl	84-15-1	100	%	70-135	06.16.16 16.08	

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VGSAU 148

Sample Id:	**SB-3-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-009	Date Collected:	06.13.16 15.10	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4.76
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00157	mg/kg	06.16.16 15.17	U	1
Toluene	108-88-3	ND	0.00209	mg/kg	06.16.16 15.17	U	1
Ethylbenzene	100-41-4	ND	0.00209	mg/kg	06.16.16 15.17	U	1
m_p-Xylenes	179601-23-1	ND	0.00209	mg/kg	06.16.16 15.17	U	1
o-Xylene	95-47-6	ND	0.00313	mg/kg	06.16.16 15.17	U	1
Total Xylenes	1330-20-7	ND	0.00209	mg/kg	06.16.16 15.17	U	1
Total BTEX		ND	0.00157	mg/kg	06.16.16 15.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	105	%	80-120	06.16.16 15.17	
4-Bromofluorobenzene	460-00-4	119	%	80-120	06.16.16 15.17	

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VGSAU 148

Sample Id:	**SB-3-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-010	Date Collected:	06.13.16 15.15	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	1.97
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**184**	10.2	mg/kg	06.16.16 17.27		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	1.97
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.3	mg/kg	06.16.16 16.32	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.3	mg/kg	06.16.16 16.32	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.3	mg/kg	06.16.16 16.32	U	1
Total TPH	PHC635	ND	15.3	mg/kg	06.16.16 16.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.16.16 16.32	
o-Terphenyl	84-15-1	92	%	70-135	06.16.16 16.32	

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VGSAU 148

Sample Id:	**SB-3-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-010	Date Collected:	06.13.16 15.15	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	1.97
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00153	mg/kg	06.16.16 15.34	U	1
Toluene	108-88-3	ND	0.00204	mg/kg	06.16.16 15.34	U	1
Ethylbenzene	100-41-4	ND	0.00204	mg/kg	06.16.16 15.34	U	1
m_p-Xylenes	179601-23-1	ND	0.00204	mg/kg	06.16.16 15.34	U	1
o-Xylene	95-47-6	ND	0.00305	mg/kg	06.16.16 15.34	U	1
Total Xylenes	1330-20-7	ND	0.00204	mg/kg	06.16.16 15.34	U	1
Total BTEX		ND	0.00153	mg/kg	06.16.16 15.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	80-120	06.16.16 15.34	
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.16.16 15.34	

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VGSAU 148

Sample Id:	**SB-3-20-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-011	Date Collected:	06.13.16 15.25	Sample Depth:	20 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4.72
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.0**	10.5	mg/kg	06.16.16 17.34		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.72
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.7	mg/kg	06.16.16 17.21	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.7	mg/kg	06.16.16 17.21	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.7	mg/kg	06.16.16 17.21	U	1
Total TPH	PHC635	ND	15.7	mg/kg	06.16.16 17.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 17.21	
o-Terphenyl	84-15-1	99	%	70-135	06.16.16 17.21	

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VGSAU 148

Sample Id:	**SB-3-20-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-011	Date Collected:	06.13.16 15.25	Sample Depth:	20 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4.72
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00156	mg/kg	06.16.16 16.52	U	1
Toluene	108-88-3	ND	0.00208	mg/kg	06.16.16 16.52	U	1
Ethylbenzene	100-41-4	ND	0.00208	mg/kg	06.16.16 16.52	U	1
m_p-Xylenes	179601-23-1	ND	0.00208	mg/kg	06.16.16 16.52	U	1
o-Xylene	95-47-6	ND	0.00312	mg/kg	06.16.16 16.52	U	1
Total Xylenes	1330-20-7	ND	0.00208	mg/kg	06.16.16 16.52	U	1
Total BTEX		ND	0.00156	mg/kg	06.16.16 16.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	80-120	06.16.16 16.52	
1,4-Difluorobenzene	540-36-3	103	%	80-120	06.16.16 16.52	

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VGSAU 148

Sample Id:	**SB-3-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-012	Date Collected:	06.13.16 15.30	Sample Depth:	50 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	3.89
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**21.0**	10.4	mg/kg	06.16.16 17.58		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	3.89
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.6	mg/kg	06.16.16 17.46	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.6	mg/kg	06.16.16 17.46	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.6	mg/kg	06.16.16 17.46	U	1
Total TPH	PHC635	ND	15.6	mg/kg	06.16.16 17.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.16.16 17.46	
o-Terphenyl	84-15-1	99	%	70-135	06.16.16 17.46	

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VGSAU 148

Sample Id:	**SB-3-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-012	Date Collected:	06.13.16 15.30	Sample Depth:	50 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	3.89
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00156	mg/kg	06.16.16 20.21	U	1
Toluene	108-88-3	ND	0.00208	mg/kg	06.16.16 20.21	U	1
Ethylbenzene	100-41-4	ND	0.00208	mg/kg	06.16.16 20.21	U	1
m_p-Xylenes	179601-23-1	ND	0.00208	mg/kg	06.16.16 20.21	U	1
o-Xylene	95-47-6	ND	0.00312	mg/kg	06.16.16 20.21	U	1
Total Xylenes	1330-20-7	ND	0.00208	mg/kg	06.16.16 20.21	U	1
Total BTEX		ND	0.00156	mg/kg	06.16.16 20.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	101	%	80-120	06.16.16 20.21	
4-Bromofluorobenzene	460-00-4	104	%	80-120	06.16.16 20.21	

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VGSAU 148

Sample Id:	**SB-4-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-013	Date Collected:	06.14.16 09.55	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	5.77
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**290**	10.6	mg/kg	06.16.16 18.06		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	5.77
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.9	mg/kg	06.16.16 18.10	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**19.1**	15.9	mg/kg	06.16.16 18.10		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.9	mg/kg	06.16.16 18.10	U	1
Total TPH	PHC635	**19.1**	15.9	mg/kg	06.16.16 18.10		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 18.10	
o-Terphenyl	84-15-1	102	%	70-135	06.16.16 18.10	

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VGSAU 148

Sample Id:	**SB-4-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-013	Date Collected:	06.14.16 09.55	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	5.77
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00158	mg/kg	06.17.16 14.39	U	1
Toluene	108-88-3	ND	0.00211	mg/kg	06.17.16 14.39	U	1
Ethylbenzene	100-41-4	ND	0.00211	mg/kg	06.17.16 14.39	U	1
m_p-Xylenes	179601-23-1	ND	0.00211	mg/kg	06.17.16 14.39	U	1
o-Xylene	95-47-6	ND	0.00316	mg/kg	06.17.16 14.39	U	1
Total Xylenes	1330-20-7	ND	0.00211	mg/kg	06.17.16 14.39	U	1
Total BTEX		ND	0.00158	mg/kg	06.17.16 14.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	80-120	06.17.16 14.39	
1,4-Difluorobenzene	540-36-3	99	%	80-120	06.17.16 14.39	

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VGSAU 148

Sample Id:	**SB-4-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-014	Date Collected:	06.14.16 10.00	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	5.22
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**285**	10.6	mg/kg	06.16.16 18.29		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	5.22
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.8	mg/kg	06.16.16 18.35	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	**25.3**	15.8	mg/kg	06.16.16 18.35		1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.8	mg/kg	06.16.16 18.35	U	1
Total TPH	PHC635	**25.3**	15.8	mg/kg	06.16.16 18.35		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 18.35	
o-Terphenyl	84-15-1	102	%	70-135	06.16.16 18.35	

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GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-4-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-014	Date Collected:	06.14.16 10.00	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	5.22
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00158	mg/kg	06.17.16 14.55	U	1
Toluene	108-88-3	ND	0.00211	mg/kg	06.17.16 14.55	U	1
Ethylbenzene	100-41-4	ND	0.00211	mg/kg	06.17.16 14.55	U	1
m_p-Xylenes	179601-23-1	ND	0.00211	mg/kg	06.17.16 14.55	U	1
o-Xylene	95-47-6	ND	0.00316	mg/kg	06.17.16 14.55	U	1
Total Xylenes	1330-20-7	ND	0.00211	mg/kg	06.17.16 14.55	U	1
Total BTEX		ND	0.00158	mg/kg	06.17.16 14.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	80-120	06.17.16 14.55	
1,4-Difluorobenzene	540-36-3	103	%	80-120	06.17.16 14.55	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-4-30-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-015	Date Collected:	06.14.16 10.05	Sample Depth:	30 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4.43
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	ND	10.5	mg/kg	06.16.16 18.37	U	1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.43
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.7	mg/kg	06.16.16 19.00	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.7	mg/kg	06.16.16 19.00	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.7	mg/kg	06.16.16 19.00	U	1
Total TPH	PHC635	ND	15.7	mg/kg	06.16.16 19.00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 19.00	
o-Terphenyl	84-15-1	100	%	70-135	06.16.16 19.00	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-4-30-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-015	Date Collected:	06.14.16 10.05	Sample Depth:	30 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4.43
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00156	mg/kg	06.16.16 17.55	U	1
Toluene	108-88-3	ND	0.00208	mg/kg	06.16.16 17.55	U	1
Ethylbenzene	100-41-4	ND	0.00208	mg/kg	06.16.16 17.55	U	1
m_p-Xylenes	179601-23-1	ND	0.00208	mg/kg	06.16.16 17.55	U	1
o-Xylene	95-47-6	ND	0.00312	mg/kg	06.16.16 17.55	U	1
Total Xylenes	1330-20-7	ND	0.00208	mg/kg	06.16.16 17.55	U	1
Total BTEX		ND	0.00156	mg/kg	06.16.16 17.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	80-120	06.16.16 17.55	
1,4-Difluorobenzene	540-36-3	96	%	80-120	06.16.16 17.55	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-4-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-016	Date Collected:	06.14.16 10.10	Sample Depth:	50 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4.01
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	ND	10.4	mg/kg	06.16.16 18.44	U	1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.01
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.6	mg/kg	06.16.16 19.25	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.6	mg/kg	06.16.16 19.25	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.6	mg/kg	06.16.16 19.25	U	1
Total TPH	PHC635	ND	15.6	mg/kg	06.16.16 19.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-130	06.16.16 19.25	
o-Terphenyl	84-15-1	97	%	70-135	06.16.16 19.25	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-4-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-016	Date Collected:	06.14.16 10.10	Sample Depth:	50 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4.01
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00156	mg/kg	06.16.16 18.11	U	1
Toluene	108-88-3	ND	0.00208	mg/kg	06.16.16 18.11	U	1
Ethylbenzene	100-41-4	ND	0.00208	mg/kg	06.16.16 18.11	U	1
m_p-Xylenes	179601-23-1	ND	0.00208	mg/kg	06.16.16 18.11	U	1
o-Xylene	95-47-6	ND	0.00312	mg/kg	06.16.16 18.11	U	1
Total Xylenes	1330-20-7	ND	0.00208	mg/kg	06.16.16 18.11	U	1
Total BTEX		ND	0.00156	mg/kg	06.16.16 18.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	80-120	06.16.16 18.11	
1,4-Difluorobenzene	540-36-3	103	%	80-120	06.16.16 18.11	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-017	Date Collected:	06.14.16 10.50	Sample Depth:	5 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	8.74
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**2660**	110	mg/kg	06.16.16 18.52		10

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	8.74
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	16.4	mg/kg	06.16.16 19.49	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	16.4	mg/kg	06.16.16 19.49	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	16.4	mg/kg	06.16.16 19.49	U	1
Total TPH	PHC635	ND	16.4	mg/kg	06.16.16 19.49	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-130	06.16.16 19.49	
o-Terphenyl	84-15-1	103	%	70-135	06.16.16 19.49	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-5-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-017	Date Collected:	06.14.16 10.50	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	8.74
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00164	mg/kg	06.16.16 18.27	U	1
Toluene	108-88-3	ND	0.00219	mg/kg	06.16.16 18.27	U	1
Ethylbenzene	100-41-4	ND	0.00219	mg/kg	06.16.16 18.27	U	1
m_p-Xylenes	179601-23-1	ND	0.00219	mg/kg	06.16.16 18.27	U	1
o-Xylene	95-47-6	ND	0.00329	mg/kg	06.16.16 18.27	U	1
Total Xylenes	1330-20-7	ND	0.00219	mg/kg	06.16.16 18.27	U	1
Total BTEX		ND	0.00164	mg/kg	06.16.16 18.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	80-120	06.16.16 18.27	
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.16.16 18.27	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-018	Date Collected:	06.14.16 10.55	Sample Depth:	10 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	8.36
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1010**	54.6	mg/kg	06.16.16 19.00		5

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	8.36
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	16.3	mg/kg	06.16.16 20.13	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	16.3	mg/kg	06.16.16 20.13	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	16.3	mg/kg	06.16.16 20.13	U	1
Total TPH	PHC635	ND	16.3	mg/kg	06.16.16 20.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-130	06.16.16 20.13	
o-Terphenyl	84-15-1	102	%	70-135	06.16.16 20.13	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-10-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-018	Date Collected:	06.14.16 10.55	Sample Depth:	10 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	8.36
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00163	mg/kg	06.16.16 18.43	U	1
Toluene	108-88-3	ND	0.00218	mg/kg	06.16.16 18.43	U	1
Ethylbenzene	100-41-4	ND	0.00218	mg/kg	06.16.16 18.43	U	1
m_p-Xylenes	179601-23-1	ND	0.00218	mg/kg	06.16.16 18.43	U	1
o-Xylene	95-47-6	ND	0.00327	mg/kg	06.16.16 18.43	U	1
Total Xylenes	1330-20-7	ND	0.00218	mg/kg	06.16.16 18.43	U	1
Total BTEX		ND	0.00163	mg/kg	06.16.16 18.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	80-120	06.16.16 18.43	
1,4-Difluorobenzene	540-36-3	104	%	80-120	06.16.16 18.43	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-20-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-019	Date Collected:	06.14.16 11.00	Sample Depth:	20 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**43.2**	10.4	mg/kg	06.16.16 19.08		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.6	mg/kg	06.16.16 20.37	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.6	mg/kg	06.16.16 20.37	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.6	mg/kg	06.16.16 20.37	U	1
Total TPH	PHC635	ND	15.6	mg/kg	06.16.16 20.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-130	06.16.16 20.37	
o-Terphenyl	84-15-1	102	%	70-135	06.16.16 20.37	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-20-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-019	Date Collected:	06.14.16 11.00	Sample Depth:	20 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00155	mg/kg	06.16.16 18.59	U	1
Toluene	108-88-3	ND	0.00207	mg/kg	06.16.16 18.59	U	1
Ethylbenzene	100-41-4	ND	0.00207	mg/kg	06.16.16 18.59	U	1
m_p-Xylenes	179601-23-1	ND	0.00207	mg/kg	06.16.16 18.59	U	1
o-Xylene	95-47-6	ND	0.00310	mg/kg	06.16.16 18.59	U	1
Total Xylenes	1330-20-7	ND	0.00207	mg/kg	06.16.16 18.59	U	1
Total BTEX		ND	0.00155	mg/kg	06.16.16 18.59	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	102	%	80-120	06.16.16 18.59	
1,4-Difluorobenzene	540-36-3	99	%	80-120	06.16.16 18.59	

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-020	Date Collected:	06.14.16 11.05	Sample Depth:	50 ft

Analytical Method:	Inorganic Anions by EPA 300/300.1			Prep Method:	E300P
Tech:	MNR			% Moisture:	4.08
Analyst:	MNR	Date Prep:	06.16.16 14.00	Basis:	Dry Weight
Seq Number:	996388				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**29.8**	10.4	mg/kg	06.16.16 19.16		1

Analytical Method:	TPH By SW8015B Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	4.08
Analyst:	ARM	Date Prep:	06.16.16 07.00	Basis:	Dry Weight
Seq Number:	996374				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	15.6	mg/kg	06.16.16 21.02	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	15.6	mg/kg	06.16.16 21.02	U	1
C28-C35 Oil Range Hydrocarbons	PHCG2835	ND	15.6	mg/kg	06.16.16 21.02	U	1
Total TPH	PHC635	ND	15.6	mg/kg	06.16.16 21.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	101	%	70-130	06.16.16 21.02	
o-Terphenyl	84-15-1	100	%	70-135	06.16.16 21.02	

Certificate of Analytical Results 531735

GHD Services, INC- Midland, Midland, TX

VGSAU 148

Sample Id:	**SB-5-50-161306**	Matrix:	Soil	Date Received:	06.15.16 10.55
Lab Sample Id:	531735-020	Date Collected:	06.14.16 11.05	Sample Depth:	50 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	PJB			% Moisture:	4.08
Analyst:	PJB	Date Prep:	06.16.16 10.00	Basis:	Dry Weight
Seq Number:	996446				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00156	mg/kg	06.16.16 19.17	U	1
Toluene	108-88-3	ND	0.00208	mg/kg	06.16.16 19.17	U	1
Ethylbenzene	100-41-4	ND	0.00208	mg/kg	06.16.16 19.17	U	1
m_p-Xylenes	179601-23-1	ND	0.00208	mg/kg	06.16.16 19.17	U	1
o-Xylene	95-47-6	ND	0.00312	mg/kg	06.16.16 19.17	U	1
Total Xylenes	1330-20-7	ND	0.00208	mg/kg	06.16.16 19.17	U	1
Total BTEX		ND	0.00156	mg/kg	06.16.16 19.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	118	%	80-120	06.16.16 19.17	
1,4-Difluorobenzene	540-36-3	100	%	80-120	06.16.16 19.17	

CHRONOLOGY OF HOLDING TIMES

Analytical Method : Inorganic Anions by EPA 300/300.1
Work Order #: **531735**
Date Received: 06/15/16

Client : GHD Services, INC- Midland
Project ID: 11121241

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
SB-1-10-161306	531735-001	06/13/16				06/16/16	28	3	P
SB-1-15-161306	531735-002	06/13/16				06/16/16	28	3	P
SB-1-30-161306	531735-003	06/13/16				06/16/16	28	3	P
SB-1-50-161306	531735-004	06/13/16				06/16/16	28	3	P
SB-2-5-161306	531735-005	06/13/16				06/16/16	28	3	P
SB-2-10-161306	531735-006	06/13/16				06/16/16	28	3	P
SB-2-20-161306	531735-007	06/13/16				06/16/16	28	3	P
SB-2-50-161306	531735-008	06/13/16				06/16/16	28	3	P
SB-3-5-161306	531735-009	06/13/16				06/16/16	28	3	P
SB-3-10-161306	531735-010	06/13/16				06/16/16	28	3	P
SB-3-20-161306	531735-011	06/13/16				06/16/16	28	3	P
SB-3-50-161306	531735-012	06/13/16				06/16/16	28	3	P
SB-4-5-161306	531735-013	06/14/16				06/16/16	28	2	P
SB-4-10-161306	531735-014	06/14/16				06/16/16	28	2	P
SB-4-30-161306	531735-015	06/14/16				06/16/16	28	2	P
SB-4-50-161306	531735-016	06/14/16				06/16/16	28	2	P
SB-5-5-161306	531735-017	06/14/16				06/16/16	28	2	P
SB-5-10-161306	531735-018	06/14/16				06/16/16	28	2	P
SB-5-20-161306	531735-019	06/14/16				06/16/16	28	2	P
SB-5-50-161306	531735-020	06/14/16				06/16/16	28	2	P

CHRONOLOGY OF HOLDING TIMES

Analytical Method : Percent Moisture by SM2540G
Work Order #: **531735**
Date Received: 06/15/16

Client : GHD Services, INC- Midland
Project ID: 11121241

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
SB-1-10-161306	531735-001	06/13/16				06/15/16	180	2	P
SB-1-15-161306	531735-002	06/13/16				06/15/16	180	2	P
SB-1-30-161306	531735-003	06/13/16				06/15/16	180	2	P
SB-1-50-161306	531735-004	06/13/16				06/15/16	180	2	P
SB-2-5-161306	531735-005	06/13/16				06/15/16	180	2	P
SB-2-10-161306	531735-006	06/13/16				06/15/16	180	2	P
SB-2-20-161306	531735-007	06/13/16				06/15/16	180	2	P
SB-2-50-161306	531735-008	06/13/16				06/15/16	180	2	P
SB-3-5-161306	531735-009	06/13/16				06/15/16	180	2	P
SB-3-10-161306	531735-010	06/13/16				06/15/16	180	2	P
SB-3-20-161306	531735-011	06/13/16				06/15/16	180	2	P
SB-3-50-161306	531735-012	06/13/16				06/15/16	180	2	P
SB-4-5-161306	531735-013	06/14/16				06/15/16	180	1	P
SB-4-10-161306	531735-014	06/14/16				06/15/16	180	1	P
SB-4-30-161306	531735-015	06/14/16				06/15/16	180	1	P
SB-4-50-161306	531735-016	06/14/16				06/15/16	180	1	P
SB-5-5-161306	531735-017	06/14/16				06/15/16	180	1	P
SB-5-10-161306	531735-018	06/14/16				06/15/16	180	1	P
SB-5-20-161306	531735-019	06/14/16				06/15/16	180	1	P
SB-5-50-161306	531735-020	06/14/16				06/15/16	180	1	P

CHRONOLOGY OF HOLDING TIMES

Analytical Method : TPH By SW8015B Mod
Work Order #: **531735**
Date Received: 06/15/16

Client : GHD Services, INC- Midland
Project ID: 11121241

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
SB-1-10-161306	531735-001	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-1-15-161306	531735-002	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-1-30-161306	531735-003	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-1-50-161306	531735-004	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-2-5-161306	531735-005	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-2-10-161306	531735-006	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-2-20-161306	531735-007	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-2-50-161306	531735-008	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-3-5-161306	531735-009	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-3-10-161306	531735-010	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-3-20-161306	531735-011	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-3-50-161306	531735-012	06/13/16	06/16/16	14	3	06/16/16	14	0	P
SB-4-5-161306	531735-013	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-4-10-161306	531735-014	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-4-30-161306	531735-015	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-4-50-161306	531735-016	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-5-5-161306	531735-017	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-5-10-161306	531735-018	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-5-20-161306	531735-019	06/14/16	06/16/16	14	2	06/16/16	14	0	P
SB-5-50-161306	531735-020	06/14/16	06/16/16	14	2	06/16/16	14	0	P

CHRONOLOGY OF HOLDING TIMES

Analytical Method : BTEX by EPA 8021B
Work Order #: **531735**
Date Received: 06/15/16

Client : GHD Services, INC- Midland
Project ID: 11121241

Field Sample ID	Lab Sample ID	Date Collected	Date Extracted	Max Holding Time Extracted (Days)	Time Held Extracted (Days)	Date Analyzed	Max Holding Time Analyzed (Days)	Time Held Analyzed (Days)	Q
SB-1-10-161306	531735-001	06/13/16				06/15/16	14	2	P
SB-1-15-161306	531735-002	06/13/16				06/17/16	14	4	P
SB-1-30-161306	531735-003	06/13/16				06/16/16	14	3	P
SB-1-50-161306	531735-004	06/13/16				06/17/16	14	4	P
SB-2-5-161306	531735-005	06/13/16				06/16/16	14	3	P
SB-2-10-161306	531735-006	06/13/16				06/16/16	14	3	P
SB-2-20-161306	531735-007	06/13/16				06/16/16	14	3	P
SB-2-50-161306	531735-008	06/13/16				06/16/16	14	3	P
SB-3-5-161306	531735-009	06/13/16				06/16/16	14	3	P
SB-3-10-161306	531735-010	06/13/16				06/16/16	14	3	P
SB-3-20-161306	531735-011	06/13/16				06/16/16	14	3	P
SB-3-50-161306	531735-012	06/13/16				06/16/16	14	3	P
SB-4-5-161306	531735-013	06/14/16				06/17/16	14	3	P
SB-4-10-161306	531735-014	06/14/16				06/17/16	14	3	P
SB-4-30-161306	531735-015	06/14/16				06/16/16	14	2	P
SB-4-50-161306	531735-016	06/14/16				06/16/16	14	2	P
SB-5-5-161306	531735-017	06/14/16				06/16/16	14	2	P
SB-5-10-161306	531735-018	06/14/16				06/16/16	14	2	P
SB-5-20-161306	531735-019	06/14/16				06/16/16	14	2	P
SB-5-50-161306	531735-020	06/14/16				06/16/16	14	2	P

F = These samples were analyzed outside the recommended holding time.
P = Samples analyzed within the recommended holding time.

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

GHD Services, INC- Midland

VGSAU 148

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number: 996388 Matrix: Solid Date Prep: 06.16.16
MB Sample Id: 710007-1-BLK LCS Sample Id: 710007-1-BKS LCSD Sample Id: 710007-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	232	93	228	91	90-110	2	20	mg/kg	06.16.16 15:30	

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number: 996388 Matrix: Soil Date Prep: 06.16.16
Parent Sample Id: 531735-001 MD Sample Id: 531735-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	80.3	73.4	9	20	mg/kg	06.16.16 15:53	

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number: 996388 Matrix: Soil Date Prep: 06.16.16
Parent Sample Id: 531735-011 MD Sample Id: 531735-011 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	28.0	26.3	6	20	mg/kg	06.16.16 17:42	

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number: 996388 Matrix: Soil Date Prep: 06.16.16
Parent Sample Id: 531735-001 MS Sample Id: 531735-001 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Chloride	80.3	260	311	89	80-120	mg/kg	06.16.16 16:01	

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Seq Number: 996388 Matrix: Soil Date Prep: 06.16.16
Parent Sample Id: 531735-011 MS Sample Id: 531735-011 S

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Chloride	28.0	262	251	85	80-120	mg/kg	06.16.16 17:50	

Analytical Method: Percent Moisture by SM2540G
Seq Number: 996303 Matrix: Soil
Parent Sample Id: 531735-001 MD Sample Id: 531735-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	3.78	4.41	15	20	%	06.15.16 17:55	

GHD Services, INC- Midland

VGSAU 148

Analytical Method: **Percent Moisture by SM2540G**

Seq Number: 996303 Matrix: Soil

Parent Sample Id: 531735-011 MD Sample Id: 531735-011 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.72	4.20	12	20	%	06.15.16 17:55	

Analytical Method: **TPH By SW8015B Mod** Prep Method: TX1005P

Seq Number: 996374 Matrix: Solid Date Prep: 06.16.16

MB Sample Id: 710024-1-BLK LCS Sample Id: 710024-1-BKS LCSD Sample Id: 710024-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	935	94	931	93	75-125	0	25	mg/kg	06.16.16 10:22	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	945	95	988	99	75-125	4	25	mg/kg	06.16.16 10:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	102		116		120		70-130	%	06.16.16 10:22
o-Terphenyl	106		105		108		70-135	%	06.16.16 10:22

Analytical Method: **TPH By SW8015B Mod** Prep Method: TX1005P

Seq Number: 996374 Matrix: Soil Date Prep: 06.16.16

Parent Sample Id: 531735-001 MS Sample Id: 531735-001 S MSD Sample Id: 531735-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.6	1040	902	87	904	87	75-125	0	25	mg/kg	06.16.16 12:28	
C10-C28 Diesel Range Hydrocarbons	<15.6	1040	1050	101	1060	102	75-125	1	25	mg/kg	06.16.16 12:28	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		121		70-130	%	06.16.16 12:28
o-Terphenyl	106		106		70-135	%	06.16.16 12:28

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 996300 Matrix: Solid Date Prep: 06.15.16

MB Sample Id: 709974-1-BLK LCS Sample Id: 709974-1-BKS LCSD Sample Id: 709974-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00150	0.100	0.105	105	0.101	101	70-130	4	35	mg/kg	06.15.16 17:26	
Toluene	<0.00200	0.100	0.104	104	0.101	101	70-130	3	35	mg/kg	06.15.16 17:26	
Ethylbenzene	<0.00200	0.100	0.109	109	0.107	107	71-129	2	35	mg/kg	06.15.16 17:26	
m_p-Xylenes	<0.00200	0.200	0.223	112	0.220	110	70-135	1	35	mg/kg	06.15.16 17:26	
o-Xylene	<0.00300	0.100	0.107	107	0.106	106	71-133	1	35	mg/kg	06.15.16 17:26	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		99		101		80-120	%	06.15.16 17:26
4-Bromofluorobenzene	104		114		116		80-120	%	06.15.16 17:26

GHD Services, INC- Midland

VGSAU 148

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B

Seq Number: 996446 | Matrix: Solid | Date Prep: 06.16.16

MB Sample Id: 709996-1-BLK | LCS Sample Id: 709996-1-BKS | LCSD Sample Id: 709996-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00150	0.100	0.101	101	0.0947	95	70-130	6	35	mg/kg	06.16.16 11:48	
Toluene	<0.00200	0.100	0.100	100	0.0935	94	70-130	7	35	mg/kg	06.16.16 11:48	
Ethylbenzene	<0.00200	0.100	0.105	105	0.0983	98	71-129	7	35	mg/kg	06.16.16 11:48	
m_p-Xylenes	<0.00200	0.200	0.217	109	0.204	102	70-135	6	35	mg/kg	06.16.16 11:48	
o-Xylene	<0.00300	0.100	0.103	103	0.0974	97	71-133	6	35	mg/kg	06.16.16 11:48	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	94		101		102		80-120	%	06.16.16 11:48
4-Bromofluorobenzene	99		108		108		80-120	%	06.16.16 11:48

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B

Seq Number: 996300 | Matrix: Soil | Date Prep: 06.15.16

Parent Sample Id: 531735-001 | MS Sample Id: 531735-001 S | MSD Sample Id: 531735-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00156	0.104	0.0893	86	0.0877	84	70-130	2	35	mg/kg	06.15.16 17:58	
Toluene	<0.00208	0.104	0.0901	87	0.0866	83	70-130	4	35	mg/kg	06.15.16 17:58	
Ethylbenzene	<0.00208	0.104	0.0977	94	0.0949	91	71-129	3	35	mg/kg	06.15.16 17:58	
m_p-Xylenes	<0.00208	0.208	0.203	98	0.197	95	70-135	3	35	mg/kg	06.15.16 17:58	
o-Xylene	<0.00312	0.104	0.100	96	0.0970	93	71-133	3	35	mg/kg	06.15.16 17:58	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	102		101		80-120	%	06.15.16 17:58
4-Bromofluorobenzene	119		116		80-120	%	06.15.16 17:58

Analytical Method: BTEX by EPA 8021B | Prep Method: SW5030B

Seq Number: 996446 | Matrix: Soil | Date Prep: 06.16.16

Parent Sample Id: 531735-002 | MS Sample Id: 531735-002 S | MSD Sample Id: 531735-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00154	0.103	0.0837	81	0.0967	93	70-130	14	35	mg/kg	06.16.16 12:22	
Toluene	<0.00206	0.103	0.0846	82	0.0970	93	70-130	14	35	mg/kg	06.16.16 12:22	
Ethylbenzene	<0.00206	0.103	0.0908	88	0.105	101	71-129	15	35	mg/kg	06.16.16 12:22	
m_p-Xylenes	<0.00206	0.206	0.190	92	0.220	106	70-135	15	35	mg/kg	06.16.16 12:22	
o-Xylene	<0.00309	0.103	0.0927	90	0.108	104	71-133	15	35	mg/kg	06.16.16 12:22	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		104		80-120	%	06.16.16 12:22
4-Bromofluorobenzene	117		120		80-120	%	06.16.16 12:22

CHAIN OF CUSTODY

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Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

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Xenco Quote #

Xenco Job # 531735

Client / Reporting Information

Company Name / Branch: GHD-Midland

Company Address: 2135 S Loop 250 W, Midland, TX 79703

Email: christopher.knight@ghd.com

Phone No: 512-506-8803

Project Contact: Christopher Knight

Samplers's Name John Fergerson

Project Information

Project Name/Number: VGSAU 148/11121241

Project Location: Lovington, NM

Invoice To:

PO Number:

Analytical Information

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX SW8021	TPH SW8015 (GRO, DRO, MRO)	Chloride	Moisture	Field Comments
1	SB-1-10-161306	10'	6/13/16	1110	S	1								X	✓	✓	✓	✓	Grab
2	SB-1-15-161306	15'	6/13/16	1115	S	1								X	✓	✓	✓	✓	"
3	SB-1-30-161306	30'	6/13/16	1125	S	1								X	✓	✓	✓	✓	"
4	SB-1-50-161306	50'	6/13/16	1135	S	1								X	✓	✓	✓	✓	"
5	SB-2-5-161306	5'	6/13/16	1400	S	1								X	✓	✓	✓	✓	"
6	SB-2-10-161306	10'	6/13/16	1420	S	1								X	✓	✓	✓	✓	"
7	SB-2-20-161306	20'	6/13/16	1425	S	1								X	✓	✓	✓	✓	"
8	SB-2-50-161306	50'	6/13/16	1430	S	1								X	✓	✓	✓	✓	"
9	SB-3-5-161306	5'	6/13/16	1510	S	1								X	✓	✓	✓	✓	"
10	SB-3-10-161306	10'	6/13/16	1515	S	1								X	✓	✓	✓	✓	"

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		6/15/16 1055	1	2		2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated.

Temp 4.5°C IR ID:R-8
C/F:0
Corrected Temp: 4.5°C

Final 1.000

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

www.xenco.com

Xenco Quote #

Xenco Job # 531735

Client / Reporting Information

Company Name / Branch: GHD-Midland

Company Address: 2135 S Loop 250 W, Midland, TX 79703

Email: christopher.knight@ghd.com

Phone No: 512-506-8803

Project Contact: Christopher Knight

Samplers's Name John Ferguson

Project Information

Project Name/Number: VGSAU 148/11121241

Project Location: Lovington, NM

Invoice To:

PO Number:

Analytical Information

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	BTEX SW8021	TPH SW8015 (GRO, DRO, MRO)	Chloride	Moisture						Field Comments
1	SB-3-20-161306	20'	6/13/16	1525	S	1								X	✓	✓	✓	✓						Grab
2	SB-3-50-161306	50'	6/13/16	1530	S	1								X	✓	✓	✓	✓						"
3	SB-4-5-161406	5'	6/14/16	0955	S	1								X	✓	✓	✓	✓						"
4	SB-4-10-161406	10'	6/14/16	1000	S	1								X	✓	✓	✓	✓						"
5	SB-4-30-161406	30'	6/14/16	1005	S	1								X	✓	✓	✓	✓						"
6	SB-4-50-161406	50'	6/14/16	1010	S	1								X	✓	✓	✓	✓						"
7	SB-5-5-161406	5'	6/14/16	1050	S	1								X	✓	✓	✓	✓						"
8	SB-5-10-161406	10'	6/14/16	1055	S	1								X	✓	✓	✓	✓						"
9	SB-5-20-161406	20'	6/14/16	1100	S	1								X	✓	✓	✓	✓						"
10	SB-5-50-161406	50'	6/14/16	1105	S	1								X	✓	✓	✓	✓						"

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by/Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		6/15/16 1055	1	2		2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp. Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a full...

Temp: 4.5°C IR ID:R-8
C/F:0
Corrected Temp: 4.5°C

Final 1.000

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 06/15/2016 10:55:00 AM

Work Order #: 531735

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.5
#2 *Shipping container in good condition?	**N/A**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**No**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Mary Alexis Negron
Mary Negron
Date: 06/15/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 06/16/2016

Analytical Report 535672

for

GHD Services, INC- Midland

Project Manager: Chris Knight

VGSAU 148/11121241

11121241

31-AUG-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

31-AUG-16

Project Manager: **Chris Knight**
GHD Services, INC- Midland
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **535672**
VGSAU 148/11121241
Project Address: Lovington, NM

Chris Knight:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 535672. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 535672 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 535672

GHD Services, INC- Midland, Midland, TX

VGSAU 148/11121241

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-6-082216-5'	S	08-22-16 13:30	- 5 ft	535672-001
SB-6-082216-10'	S	08-22-16 13:35	- 10 ft	535672-002
SB-6-082216-20'	S	08-22-16 13:40	- 20 ft	535672-003
SB-6-082216-50'	S	08-22-16 13:45	- 50 ft	535672-004
SB-7-082216-5'	S	08-22-16 14:30	- 5 ft	535672-005
SB-7-082216-15'	S	08-22-16 14:35	- 15 ft	535672-006
SB-7-082216-20'	S	08-22-16 14:40	- 20 ft	535672-007
SB-7-082216-30'	S	08-22-16 14:50	- 30 ft	535672-008
SB-7-082216-50'	S	08-22-16 14:45	- 50 ft	535672-009
SB-8-082316-5'	S	08-23-16 09:30	- 5 ft	535672-010
SB-8-082316-10'	S	08-23-16 09:35	- 10 ft	535672-011
SB-8-082316-20'	S	08-23-16 09:45	- 20 ft	535672-013
SB-8-082316-30'	S	08-23-16 09:55	- 30 ft	535672-015
SB-8-082316-50'	S	08-23-16 10:15	- 50 ft	535672-019
SB-9-082316-5'	S	08-23-16 10:35	- 5 ft	535672-020
SB-9-082316-10'	S	08-23-16 10:40	- 10 ft	535672-021
SB-9-082316-15'	S	08-23-16 10:45	- 15 ft	535672-022
SB-9-082316-20'	S	08-23-16 10:50	- 20 ft	535672-023
SB-9-082316-50'	S	08-23-16 11:20	- 50 ft	535672-029
SB-8-082316-15'	S	08-23-16 09:40	- 15 ft	Not Analyzed
SB-8-082316-25'	S	08-23-16 09:50	- 25 ft	Not Analyzed
SB-8-082316-35'	S	08-23-16 10:00	- 35 ft	Not Analyzed
SB-8-082316-40'	S	08-23-16 10:05	- 40 ft	Not Analyzed
SB-8-082316-45'	S	08-23-16 10:10	- 45 ft	Not Analyzed
SB-9-082316-25'	S	08-23-16 10:55	- 25 ft	Not Analyzed
SB-9-082316-30'	S	08-23-16 11:00	- 30 ft	Not Analyzed
SB-9-082316-35'	S	08-23-16 11:05	- 35 ft	Not Analyzed
SB-9-082316-40'	S	08-23-16 11:10	- 40 ft	Not Analyzed
SB-9-082316-45'	S	08-23-16 11:15	- 45 ft	Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 535672

GHD Services, INC- Midland, Midland, TX

Project Name: VGSAU 148/11121241

Project Id: 11121241
Contact: Chris Knight
Project Location: Lovington, NM

Date Received in Lab: Thu Aug-25-16 11:26 am
Report Date: 31-AUG-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	535672-001		535672-002		535672-003		535672-004		535672-005		535672-006	
	Field Id:	SB-6-082216-5'		SB-6-082216-10'		SB-6-082216-20'		SB-6-082216-50'		SB-7-082216-5'		SB-7-082216-15'	
	Depth:	5 ft		10 ft		20 ft		50 ft		5 ft		15 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-22-16 13:30		Aug-22-16 13:35		Aug-22-16 13:40		Aug-22-16 13:45		Aug-22-16 14:30		Aug-22-16 14:35	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00	
	Analyzed:	Aug-26-16 14:50		Aug-26-16 14:57		Aug-26-16 15:05		Aug-26-16 15:29		Aug-26-16 15:36		Aug-26-16 16:00	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		20.2	10.0	14.5	10.0	ND	10.0	ND	10.0	14.2	10.0	352	10.0
Percent Moisture by SM2540G	***Extracted:***												
	Analyzed:	Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3.21		5.83		13.6		5.82		6.51		4.53	

Certificate of Analysis Summary 535672

GHD Services, INC- Midland, Midland, TX

Project Name: VGSAU 148/11121241

Project Id: 11121241
Contact: Chris Knight
Project Location: Lovington, NM

Date Received in Lab: Thu Aug-25-16 11:26 am
Report Date: 31-AUG-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	535672-007		535672-008		535672-009		535672-010		535672-011		535672-013	
	Field Id:	SB-7-082216-20'		SB-7-082216-30'		SB-7-082216-50'		SB-8-082316-5'		SB-8-082316-10'		SB-8-082316-20'	
	Depth:	20 ft		30 ft		50 ft		5 ft		10 ft		20 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-22-16 14:40		Aug-22-16 14:50		Aug-22-16 14:45		Aug-23-16 09:30		Aug-23-16 09:35		Aug-23-16 09:45	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 09:00		Aug-26-16 11:30	
	Analyzed:	Aug-26-16 16:08		Aug-26-16 16:15		Aug-26-16 16:23		Aug-26-16 16:31		Aug-26-16 16:39		Aug-26-16 17:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		954	10.0	30.6	10.0	11.7	10.0	ND	10.0	ND	10.0	ND	10.0
Percent Moisture by SM2540G	***Extracted:***												
	Analyzed:	Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.53		4.08		4.39		3.12		6.19		3.72	

Certificate of Analysis Summary 535672

GHD Services, INC- Midland, Midland, TX

Project Name: VGSAU 148/11121241

Project Id: 11121241
Contact: Chris Knight
Project Location: Lovington, NM

Date Received in Lab: Thu Aug-25-16 11:26 am
Report Date: 31-AUG-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	535672-015		535672-019		535672-020		535672-021		535672-022		535672-023	
	Field Id:	SB-8-082316-30'		SB-8-082316-50'		SB-9-082316-5'		SB-9-082316-10'		SB-9-082316-15'		SB-9-082316-20'	
	Depth:	30 ft		50 ft		5 ft		10 ft		15 ft		20 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-23-16 09:55		Aug-23-16 10:15		Aug-23-16 10:35		Aug-23-16 10:40		Aug-23-16 10:45		Aug-23-16 10:50	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-26-16 11:30		Aug-26-16 11:30		Aug-26-16 11:30		Aug-26-16 11:30		Aug-26-16 11:30		Aug-26-16 11:30	
	Analyzed:	Aug-26-16 18:05		Aug-26-16 18:51		Aug-26-16 18:59		Aug-26-16 19:07		Aug-26-16 19:15		Aug-26-16 19:23	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		ND	10.0	ND	10.0	6540	100	86.4	10.0	46.8	10.0	21.1	10.0
Percent Moisture by SM2540G	***Extracted:***												
	Analyzed:	Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15		Aug-29-16 11:15	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.23		4.46		10.2		14.3		2.66		5.43	

Certificate of Analysis Summary 535672

GHD Services, INC- Midland, Midland, TX

Project Name: VGSAU 148/11121241

Project Id: 11121241
Contact: Chris Knight
Project Location: Lovington, NM

Date Received in Lab: Thu Aug-25-16 11:26 am
Report Date: 31-AUG-16
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	535672-029					
	Field Id:	SB-9-082316-50'					
	Depth:	50 ft					
	Matrix:	SOIL					
	Sampled:	Aug-23-16 11:20					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-26-16 11:30					
	Analyzed:	Aug-26-16 20:41					
	Units/RL:	mg/kg	RL				
Chloride		41.6	10.0				
Percent Moisture by SM2540G	***Extracted:***						
	Analyzed:	Aug-29-16 11:15					
	Units/RL:	%	RL				
Percent Moisture		2.79					

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

BS / BSD Recoveries

Project Name: VGSAU 148/11121241

Work Order #: 535672 **Project ID:** 11121241

Analyst: MNR **Date Prepared:** 08/26/2016 **Date Analyzed:** 08/26/2016

Lab Batch ID: 1000725 **Sample:** 713113-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	232	93	250	253	101	9	90-110	20	

Analyst: MNR **Date Prepared:** 08/26/2016 **Date Analyzed:** 08/26/2016

Lab Batch ID: 1000731 **Sample:** 713114-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	250	100	250	254	102	2	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: VGSAU 148/11121241

Work Order # : 535672 **Project ID:** 11121241

Lab Batch ID: 1000725 **QC- Sample ID:** 535668-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/26/2016 **Date Prepared:** 08/26/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	263	250	512	100	250	511	99	0	90-110	20	

Lab Batch ID: 1000725 **QC- Sample ID:** 535672-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/26/2016 **Date Prepared:** 08/26/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	257	103	250	262	105	2	90-110	20	

Lab Batch ID: 1000731 **QC- Sample ID:** 535672-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/26/2016 **Date Prepared:** 08/26/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	245	98	250	239	96	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: VGSAU 148/11121241

Work Order # : 535672 **Project ID:** 11121241

Lab Batch ID: 1000731 **QC- Sample ID:** 535672-023 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/29/2016 **Date Prepared:** 08/26/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	21.1	250	286	106	250	280	104	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: VGSAU 148/11121241

Work Order #: 535672

Lab Batch #: 1000868 **Project ID:** 11121241

Date Analyzed: 08/29/2016 11:15 **Date Prepared:** 08/29/2016 **Analyst:** WRU

QC- Sample ID: 535672-007 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture by SM2540G Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.53	7.28	3	20	

Lab Batch #: 1000868

Date Analyzed: 08/29/2016 11:15 **Date Prepared:** 08/29/2016 **Analyst:** WRU

QC- Sample ID: 535677-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture by SM2540G Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	6.47	5.73	12	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

Version: 1.%

CHAIN OF CUSTODY

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Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

www.xenco.com

Xenco Quote #

Xenco Job # 535672

Client / Reporting Information

Company Name / Branch: GHD-Midland

Company Address: 2135 S Loop 250 W, Midland, TX 79703

Email: christopher.knight@ghd.com

Phone No: 512-506-8803

Project Contact: Christopher Knight

Samplers's Name Jennifer Stoffel

Project Information

Project Name/Number: VGSAU 148/ 11121241

Project Location: Lovington, NM

Invoice To:

PO Number:

Analytical Information

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride	Percent Moisture	Field Comments
1	SB-6-082216-5'	5'	8/22	1330	S	1								X	X	X	
2	SB-6-082216-10'	10'	8/22	1335													
3	SB-6-082216-20'	20'	8/22	1340													
4	SB-6-082216-50'	50'	8/22	1345													
5	SB-7-082216-5'	5'	8/22	1430													
6	SB-7-082216-15'	15'	8/22	1435													
7	SB-7-082216-20'	20'	8/22	1440													
8	SB-7-082216-30'	30'	8/22	1450													
9	SB-7-082216-50'	50'	8/22	1445													
10	SB-8-082316-5'	5'	8/23	0930	↓	↓								↓	↓	↓	

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

Reference SSOW
If questions, please contact Project Manager

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
Jennifer Stoffel	8/26/16 1120	[illegible] 1126	2		2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X

Temp: 11.3 IR ID:R-8
Corrected Temp: 11.3

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negoti[illegible]

Final 1.000

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CHAIN OF CUSTODY

Page 2 Of 3

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Service Center - San Antonio, Texas (210-509-3334) www.xenco.com

Xenco Quote # | Xenco Job # 535672

Client / Reporting Information

Company Name / Branch: GHD-Midland

Company Address: 2135 S Loop 250 W, Midland, TX 79703

Email: christopher.knight@ghd.com | Phone No: 512-506-8803

Project Contact: Christopher Knight

Samplers's Name

Project Information

Project Name/Number: VGSAU 148/ 11121241

Project Location: Lovington, NM

Invoice To:

PO Number:

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: Chloride	Percent Moisture	Field Comments
1	SB-8-082316-10'	10'	8/23	0935	S	1								X	X	X	
2	SB-8-082316-15'	15'	8/23	0940	↓	↓								↓	↓	↓	HOLD
3	SB-8-082316-20'	20'	8/23	0945													HOLD
4	SB-8-082316-25'	25'	8/23	0950													
5	SB-8-082316-30'	30'	8/23	0955													HOLD
6	SB-8-082316-35'	35'	8/23	1000													HOLD
7	SB-8-082316-40'	40'	8/23	1005													HOLD
8	SB-8-082316-45'	45'	8/23	1010													
9	SB-8-082316-50'	50'	8/23	1015													
10	SB-9-082316-5'	5'	8/23	1035	↓	↓								↓	↓	↓	

Turnaround Time (Business days)

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- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

Reference SSOW
If questions, Please contact Project Manager

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Jordi Stoffel	8/25/16 1120		2		2
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
3	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice: X
	5		5			Cooler Temp. Temp: 1.3 Corrected Temp: 1.3 IR ID:R-8

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negoti...

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CHAIN OF CUSTODY

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Odessa, Texas (432-563-1800)
Norcross, Georgia (770-449-8800)
Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)

Xenco Quote #:
Xenco Job #: 535672

Client / Reporting Information

Company Name / Branch: GHD-Midland
Company Address: 2135 S Loop 250 W, Midland, TX 79703
Email: christopher.knight@ghd.com
Phone No: 512-506-8803
Project Contact: Christopher Knight
Samplers's Name:

Project Information

Project Name/Number: VGSAU 148/ 11121241
Project Location: Lovington, NM
Invoice To:
PO Number:

Analytical Information

Matrix Codes

S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
W = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Sample Depth	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chloride	Percent Moisture									Field Comments
1	SB-9-082316-10'	10'	8/23	1040	S	1								X	X	X									
2	SB-9-082316-15'	15'	8/23	1045	↓	↓								↓	↓	↓									
3	SB-9-082316-20'	20'	8/23	1050	↓	↓								↓	↓	↓									
4	SB-9-082316-25'	25'	8/23	1055	↓	↓								↓	↓	↓									HOLD
5	SB-9-082316-30'	30'	8/23	1100	↓	↓								↓	↓	↓									HOLD
6	SB-9-082316-35'	35'	8/23	1105	↓	↓								↓	↓	↓									HOLD
7	SB-9-082316-40'	40'	8/23	1110	↓	↓								↓	↓	↓									HOLD
8	SB-9-082316-45'	45'	8/23	1115	↓	↓								↓	↓	↓									HOLD
9	SB-9-082316-50'	50'	8/23	1120	↓	↓								↓	↓	↓									
10																									

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- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes: Reference SSOW
If questions, please contact Project manager

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1 Relinquished by Sampler: Jennifer Stoppel	8/25/16 1120	1 A Ramirez 1126	2		2
3 Relinquished by:		3	4		4
5 Relinquished by:		5	Custody Seal #	Preserved where applicable	On Ice: X; Cooler Temp.; Thermo. Corr. Factor

Temp: 11.3 IR ID:R-8
C/F:0
Corrected Temp: 11.3

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously neg

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 08/25/2016 11:26:00 AM

Work Order #: 535672

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	11.3	
#2 *Shipping container in good condition?	**N/A**	
#3 *Samples received on ice?	**Yes**	chilling in progress
#4 *Custody Seal present on shipping container/ cooler?	**N/A**	
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#6 Custody Seals intact on sample bottles?	**N/A**	
#7 *Custody Seals Signed and dated?	**N/A**	
#8 *Chain of Custody present?	**Yes**	
#9 Sample instructions complete on Chain of Custody?	**Yes**	
#10 Any missing/extra samples?	**No**	
#11 Chain of Custody signed when relinquished/ received?	**Yes**	
#12 Chain of Custody agrees with sample label(s)?	**Yes**	
#13 Container label(s) legible and intact?	**Yes**	
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**	
#15 Samples in proper container/ bottle?	**Yes**	
#16 Samples properly preserved?	**Yes**	
#17 Sample container(s) intact?	**Yes**	
#18 Sufficient sample amount for indicated test(s)?	**Yes**	
#19 All samples received within hold time?	**Yes**	
#20 Subcontract of sample(s)?	**N/A**	
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**	
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**	
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 08/25/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 08/25/2016