Jason Michelson
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July 25, 2018

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

Re: Chevron Central Vacuum Unit No. 266
2017 Soil Assessment Report
Case No. RP-3948
Lea County, New Mexico

Dear Ms. Yu,

Please find enclosed for your files copies of the following report:

- Central Vacuum Unit No. 266 – 2017 Soil Assessment Report, Unit G, Section 36, Township 17 South, Range 34 East; Lea County New Mexico.

The report was prepared by GHD Services (GHD) on behalf of Chevron Environmental Management Company (CEMC) to document on-going assessment activities throughout 2017 at the Site.

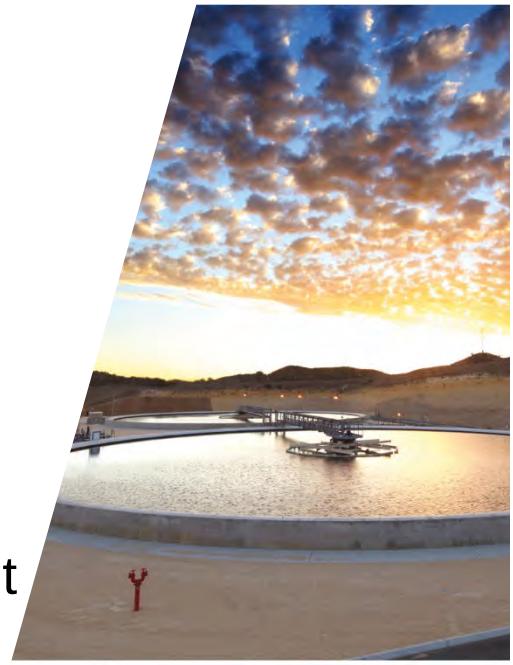
Please do not hesitate to call Scott Foord with GHD at 713-734-3090 or myself at 713-372-0289, should you have any questions.

Sincerely,

Jason Michelson

Encl. Central Vacuum Unit No. 266 – 2017 Soil Assessment Report

C.C. Amy Barnhill, Chevron/MCBU



2017 Soil Assessment Report

Central Vacuum Unit No. 266
Buckeye, New Mexico
RP-3948

Chevron Environmental Management Company

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1. Introduction

The Site is located in Unit G, Section 36, Township 17 South, Range 34 East, approximately 0.65-miles southwest of Buckeye, New Mexico, in eastern Lea County (Figure 1).

Chevron submitted an initial C-141 form (Appendix A) to the New Mexico Oil Conservation Division (NMOCD) dated January 10, 2011, describing a release of 75 barrels (bbls) of produced water with zero (0) volume being recovered. The source of the release was recorded to have been a ruptured injection line.

2. Background

Crain Environmental (Crain) conducted the initial field assessment activities at the Site in January 2011. Crain's assessment included a Site visit, shallow soil sample collection, analytical laboratory analyses and preliminary determinations of impacts to environmental media. Crain prepared a site sketch that indicated the general area of the release that is dated January 11, 2011 (see Appendix A). The field sketch indicates that produced water pooled up on the pad adjacent west of the well. Additional pooled water also ran off of the pad towards the southwest. Crain collected soil samples to assess chloride concentrations following the release. A soil analytical summary including Crain's initial sample collection is presented as Table 1.

In 2014, Chevron contracted GHD to perform a comprehensive soil assessment at the Site by implementing a soil boring program. A Site visit was performed on April 8, 2014 by GHD. During the Site visit, boring locations were flagged for utility locating purposes. In addition, the Site was walked to observe Site features; which included oversight of a geophysical Site survey by way of ground penetrating radar (GPR) to assess the presence of subsurface utility hazards. Multiple surface and subsurface hazards were identified at the Site. A Site details and utility map is presented as Figure 2.

On April 14, 2014, GHD advanced eleven soil borings to depths ranging from approximately 35-feet to 60-feet below ground surface (bgs). Results of the 2014 soil boring and sampling program indicated the presence of chloride concentrations in soil (Table 1).

In October 2014, GHD prepared and submitted a soil assessment and delineation activities report to CEMC detailing recommendations to further investigate and determine the vertical and horizontal extent of chloride impacts at the Site. CEMC concurred with the recommendations outlined in GHD's 2014 report, thus GHD returned to the Site in 2015 to execute the planned field activities.

On August 20, 2015 GHD advanced four soil borings (SB-12, SB-13, SB-14, and SB-15) to approximately 35-feet bgs and one boring (SB-16) was advanced to 90-feet bgs. Soil samples were collected for laboratory analysis from each boring (SB-12 through SB-16) at varying intervals beginning at the surface (0-feet bgs).

Samples collected from the four soil borings (SB-12, SB-14, SB-15 and SB-16) were below the Site Recommended Remedial Action Level (RRAL) for chloride concentrations (600 milligrams per kilogram (mg/kg)). Soil boring SB-13 exceeded the Site RRAL for chloride at the surface and in the

10-foot to 25-foot interval. This data from the soil boring program demonstrated that the nature and extent of chloride impacts from the release incident were minimal and the potential risk to impact groundwater is low.

All analytical data from previous soil assessment activities can be seen in Table 1 and on Figure 3. Additional assessment activities were performed during 2017 and is discussed further in this report.

3. Regulatory Framework

The NMOCD guidelines require groundwater to be analyzed for constituents of concern (COC) as defined by the New Mexico Water Quality Control Commission (NMWQCC) regulations. The NMWQCC regulations provide Human Health Standards for Groundwater. Information available on the Petroleum Recovery Research Center (PRRC) Mapping Portal and the United States Geological Survey (USGS) Current Water Database for the Nation; indicates 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; and the release Site lies more than 1,000 horizontal feet from the nearest surface water body. A monitoring well has not been advanced onsite to determine Site specific depth to groundwater, but two monitoring wells (L-14180-POD1 and POD2) were installed at a nearby location approximately 0.30 miles northeast in 2016 according to the New Mexico Office of the State Engineer (NMOSE) Points of Diversion (POD) Locations mapping database. The depth to water was reported at 126 feet bgs. Supporting documentation is included in Appendix B.

Consequently, the NMOCD total ranking criteria score is zero (0) for the Site. The anticipated Site-specific Recommended Remediation Action Levels (RRALs) to be applied to this location by the NMOCD are 10 mg/kg for benzene; 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX); 5,000 mg/kg for TPH; and an NMOCD accepted 600 mg/kg for chlorides.

Table 3.1 New Mexico Oil Conservation Division Site Assessment

Ranking Criteria	Score
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 feet)	0
Ranking Criteria Total Score	**0**
*Because the ranking criteria total score is 0, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for benzene, toluene, ethylbenzene, and xylene (BTEX), 5,000 mg/kg for total petroleum hydrocarbons (TPH), and 600 mg/kg for chlorides[1].	

1. NMOCD Guidance for Release Reporting and Corrective Action, August 13, 1993

4. Geophysical Survey of Subsurface Soil

GHD completed a geophysical survey at the Site in June 2017. The purpose of the survey was to further assess the extent of suspected chloride impacts at the Site which had been indicated during previous assessments, and to assess potential sources of these impacts. Another objective was to

assess for additional conductive anomalies (i.e., underground utilities) within the proposed survey coverage area.

4.1 Geophysical Survey Coverage

The survey coverage is presented on Figure 3. Ground cover for most of the survey area consisted of grasses and mesquite trees and shrubs. Exceptions included access roads and crushed aggregate caliche pad(s). Survey lines were spaced approximately 30 feet apart.

4.2 Geophysical Survey Methods

The EM survey was completed with an EM31 terrain conductivity meter. Prior to conducting the EM31 survey, a grid consisting of parallel lines was established over the proposed area of assessment. Readings of EM31 data were collected along 30-foot spaced grid lines over the area of assessment, with station spacings of approximately 4 feet on all grid lines. The EM31 consists of transmitter and receiver coils located at opposite ends of a rigid boom. The coil separation for the EM31 is approximately 13 feet, which yields an approximate depth of penetration of 18 feet bgs in vertical dipole mode.

During the course of the survey, data were automatically stored in an Archer 2 data logger equipped with a differential global positioning system (DGPS) receiver for position control. Both the EM31 survey data and DGPS points were collected at 1 second intervals. The DGPS locations are reported as New Mexico State Plane coordinates, North American Datum of 1983 (NAD83) Geodetic System.

Upon return from the Site, the EM31 data were downloaded to a computer and compiled for data processing and plotting. The data for the EM31 survey were then processed as a colored contour plot. The plot was superimposed on an aerial image of the Site plan, and was used to locate elevated conductivity responses indicative of chloride-impacted areas relative to the Site features. Figure 3 depicts the EM31 survey results.

4.3 EM31 Conductivity Survey Results

The colored contour conductivity plot presented on Figure 3 reveals that the highest intensity conductivity responses are colored red to purple, while areas of low response are colored blue. All remaining intermediate responses correspond to the color scale presented on the figure. Results from non-impacted areas within the survey coverage indicate that background conductivity responses were approximately 20 milliSiemens/meter (mS/m). Anomalous responses relative to background were generally 1.5 to 10 times higher, and ranged from approximately 30 to 200 mS/m.

As seen on Figure 3, the survey was completed southwest of the new well pad. Naturally vegetated areas generally yielded background responses of 20 mS/m. Several linear features were evident on the well pad, detected to the west of the new well pad, and detected along the lease road that dissects what appears to be former pits (see Figure 3). These linear features were shown as either negative or moderately elevated responses. As previously indicated, these responses indicate the location of metal pipes on or beneath the ground surface, which typically extended from pump jacks in the oil field as flow lines.

Two areas observed to be lacking natural vegetation both in the field and on aerial photography (Figure 2 and Figure 3) exhibited elevated and peak responses ranging from approximately 40 to 200 mS/m. Due to the lack of natural vegetation, the elevated EM responses, and previously collected analytical soil data from near or within the areas, it is assumed that these areas are likely former pits associated with oil and gas production.

4.4 Geophysical Survey Results

Based on the results of the geophysical assessment presented herein, the following conclusions are presented:

- The EM31 conductivity survey provided a response that indicates the horizontal extent of suspected brine impacted areas in the shallow subsurface on-Site and off-Site.
- Naturally vegetated areas within the survey grids were generally characterized by background responses of 5 to 10 mS/m.
- Several linear features consisting of negative to moderately elevated responses were measured over metal pipes on the ground surface, which typically extended from the pump jacks as flow lines.
- Peak conductivity responses in areas with little to no natural vegetation are likely former pits associated with oil and gas production.

5. Soil Boring Advancement Activities

Four soil borings were advanced at the Site to further assess the release area. Prior to mobilizing drilling equipment to the Site, the soil boring locations were pre marked and a New Mexico 811 One Call utility locate was completed at least 48 hours prior to start of work.

A secondary utility check was completed that included GPR and air knifing. High Mesa of Albuquerque, New Mexico, provided GPR services. Harrison Cooper Inc. Drilling (HCI) of Lubbock, Texas, the New Mexico licensed drilling subcontractor, provided air knife services prior to boring advancement. Each boring location was pre cleared to a depth of 5 feet bgs or until refusal by air knife prior to drilling. These activities were observed by GHD.

On October 25, 2017 a total of four soil borings (B-1, B-2, B-3, and B-4) were drilled and completed by HCI using an air rotary rig. A total depth of 50 feet bgs was reached in B-1, and a total depth of 30 feet bgs was reached in B-2, B-3, and B-4. The soil cuttings were spread on-Site and soil borings were plugged following completion with hydrated 3/8 inch bentonite hole plug.

Drill cuttings were used for logging the soil type in each of the locations. Boring locations are shown on Figure 3. Soil observed during drilling activities consisted primarily of silty sands with secondary cementation (caliche). Boring logs are included as Appendix C.

Soil samples were collected in 5 foot intervals from each of the soil borings for laboratory analysis. Soil samples for laboratory analysis were collected in laboratory prepared containers, packed on ice, and sent under chain of custody documentation to Xenco Laboratories (Xenco) of Midland, Texas. Soil samples were analyzed for chloride by Environmental Protection Agency (EPA) Method 300.

5.1 Soil Analytical Results

In general, soil borings B-1, B-2, and B-3 did not indicate the presence of chloride above the RRAL below a depth of 5 feet bgs. Chloride concentrations above the RRAL in B-3 were not observed until a depth of 25 feet bgs. However, the last soil boring collected at 30 feet bgs was also above the RRAL (741 mg/kg). A summary of soil analytical data has been included as Table 1 and is presented on Figure 3. The corresponding laboratory analytical report for soil analysis is included in Appendix D.

5.2 Investigation Derived Waste

Soil cuttings generated during October 2017 drilling activities were thin spread on-Site.

6. Conclusions and Recommendations

- The data obtained from the geophysical survey indicated the following: the EM-31 indicated the presence of two drilling pits within the area of assessment. The northern-most drilling pit is likely associated with CVU-266. However, the southern-most drilling pit is likely associated with a well located to the south of the site (Vacuum Glorieta West Unit No. 075).
- Laboratory analytical data from soil borings advanced at the Site indicates the following:
    - Chloride concentrations in the soil that are associated with the release that occurred on the pad to the west of the well have been assessed to the north, east, and south.
    - Assessment to the west is risky due to the significant number of pipelines in this area and is not recommended at this time.
    - The vertical extent of chloride concentrations in this area does not appear to extend greater than 35 feet bgs (SB-1).
    - The majority of elevated chloride concentrations are surficial and appear to be associated with the former pits.
    - Soil concentrations from the southern release appear to be minor based on laboratory data from SB-3 and SB-5.
- Based on the site sketch and site data, it does not appear that the release has affected the former pits.

Based on this information, GHD recommends the following:

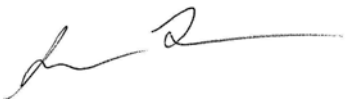
- The former pits should be closed out in accordance with the Pit Rule (19.15.29 NMAC).
- Given the significant amount of buried and surface lines on and surrounding the Site, any excavation activities in these areas will be extremely dangerous and are not advisable. GHD recommends that any future remediation at the Site be deferred until the lines are no longer in service and have been plugged and abandoned.

GHD appreciates the opportunity to provide these services. Should you have any questions, please feel free to contact the undersigned.

Submitted by:

GHD

Christine Mathews
Project Scientist/Coordinator



Scott Foord, P.G.
Project Manager

Figures

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

Lat/Long: 32.7933° North, 103.5097° West

0 1000 2000ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT #266

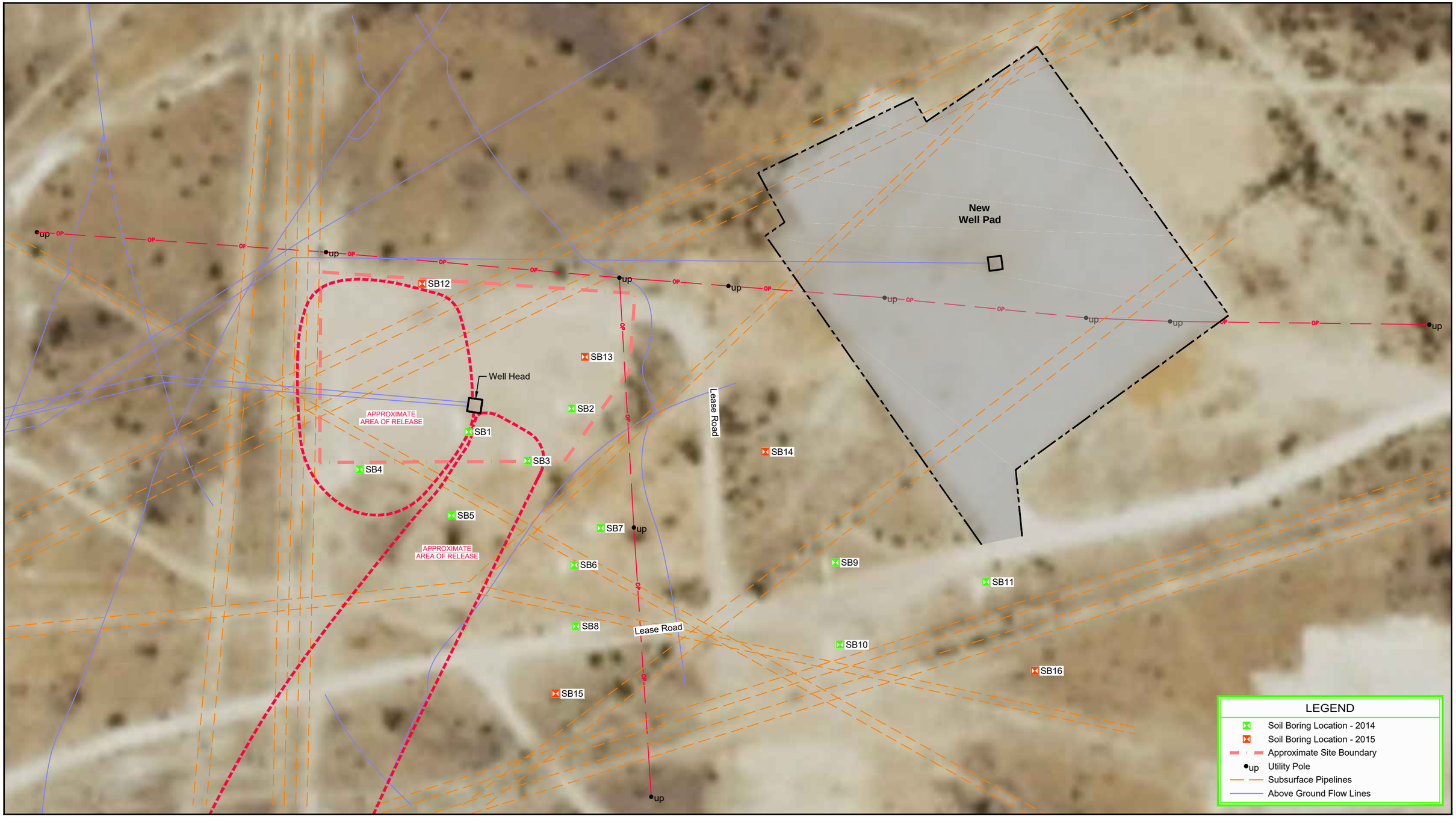
074635-00

May 4, 2018

SITE LOCATION MAP

FIGURE 1

CAD File: I:\CAD\Files\07----\074---\074635-Chevron-CVU #266\074635-00\074635-00(004)\074635-00(004)GN-DL001.dwg



Source: UDSA FSA Imagery, May 10, 2014

Lat/Long: 32.7933° North, 103.5097° West

0 40 80ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT #266

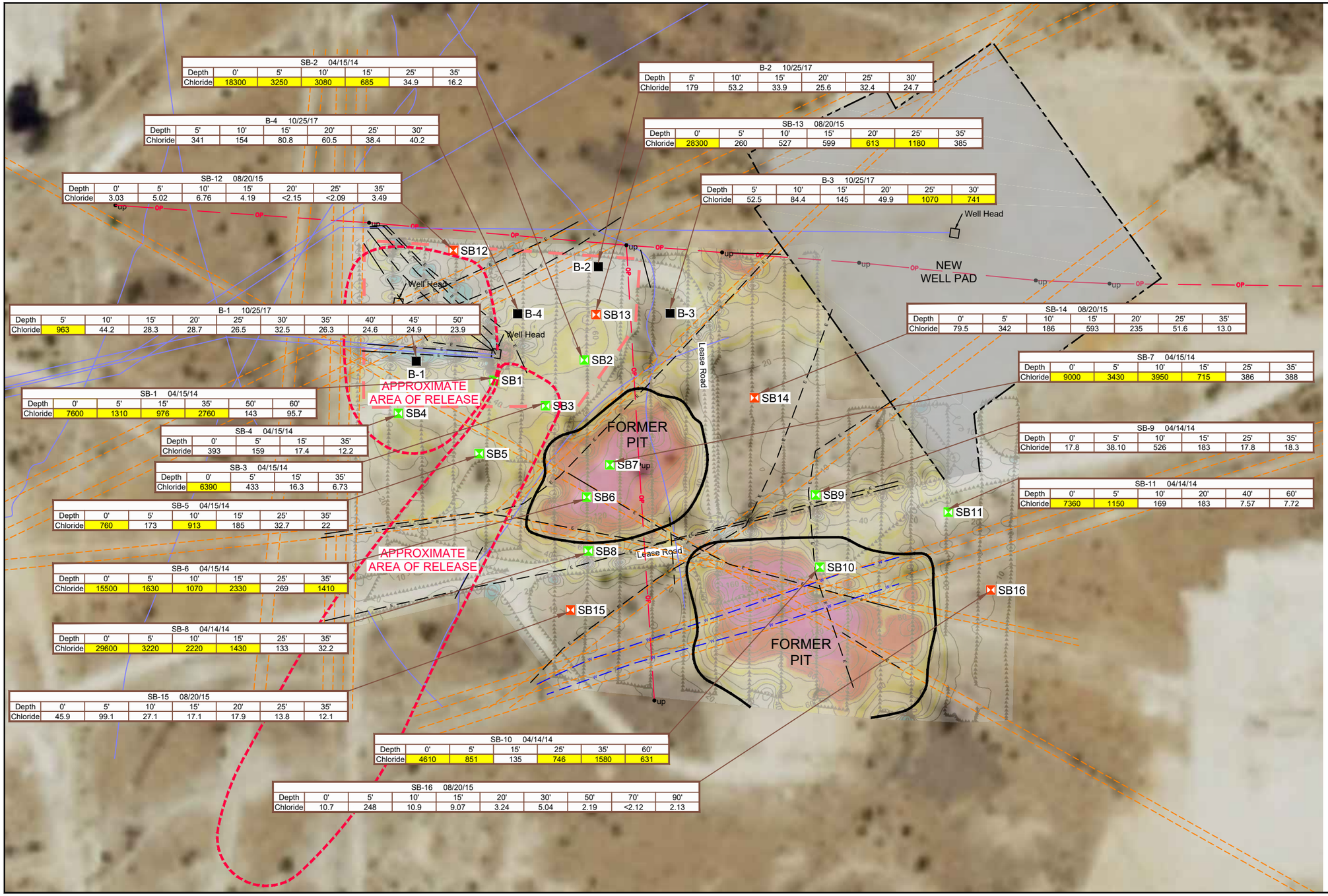
074635-00

May 7, 2018

SITE DETAILS AND UTILITIES MAP

FIGURE 2

CAD File: N:\US\Dallas\Projects\CAD\Files\07----\074---\074635-Chevron-CVU #266\074635-00\074635-00(004)\074635-00(004)GN-DL001.dwg



Source: UDSA FSA Imagery, May 10, 2014

Lat/Long: 32.7933° North, 103.5097° West

0 50 100ft

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

CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
LEA COUNTY, NEW MEXICO
CENTRAL VACUUM UNIT #266

GEOPHYSICAL SURVEY EM31 CONDUCTIVITY RESULTS AND SOIL ANALYTICAL

074635-00

May 9, 2018

FIGURE 3

CAD File: I:\CAD\Files\07-----\074---\074635-Chevron-CVU #266\074635-00\074635-00(004)\074635-00(004)GN-DL002.dwg

Tables

Table 1
Soil Analytical Summary
Central Vacuum Unit No. 266
Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recommended Remediation Action Levels			***600 (mg/kg)***
SS-1	1/19/11	6"	**70,400**
SS-1	1/18/11	1'	**3,160**
SS-1	1/18/11	2'	**912**
SS-2	1/19/11	6"	**19,200**
SS-2	1/18/11	1'	**2,400**
SS-2	1/18/11	2'	**1,810**
SS-2	1/18/11	3'	**1,520**
SS-3	1/19/11	6"	**46,400**
SS-3	1/18/11	1'	**1,730**
SS-3	1/18/11	2'	**2,400**
SS-3	1/18/11	3'	**1,410**
SS-4	1/19/11	6"	**57,600**
SS-4	1/18/11	1'	**8,000**
SS-4	1/18/11	2'	**4,880**
SS-5	1/19/11	6"	**51,200**
SS-5	1/18/11	1'	**11,400**
SS-5	1/18/11	2'	**5,440**
SS-5	1/18/11	3'	**5,360**
SS-6	1/19/11	6"	**42,400**
SS-6	1/18/11	1'	**2,200**
SS-6	1/18/11	2'	**6,160**
SS-6	1/18/11	3'	**3,200**
SB-1	4/15/14	0'	**7,600**
SB-1	4/15/14	5'	**1,310**
SB-1	4/15/14	15'	**976**
SB-1	4/15/14	35'	**2,760**
SB-1	4/15/14	50'	143
SB-1	4/15/14	60'	95.7
SB-2	4/15/14	0'	**18,300**
SB-2	4/15/14	5'	**3,250**
SB-2	4/15/14	10'	**3,080**
SB-2	4/15/14	15'	**685**
SB-2	4/15/14	25'	34.9
SB-2	4/15/14	35'	16.2
SB-3	4/15/14	0'	**6,390**
SB-3	4/15/14	5'	433
SB-3	4/15/14	15'	16.3
SB-3	4/15/14	35'	6.73
SB-4	4/15/14	0'	393
SB-4	4/15/14	5'	159
SB-4	4/15/14	15	17.4
SB-4	4/15/14	35'	12.2

Table 1
Soil Analytical Summary
Central Vacuum Unit No. 266
Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recommended Remediation Action Levels			***600 (mg/kg)***
SB-5	4/15/14	0'	**760**
SB-5	4/15/14	5'	173
SB-5	4/15/14	10'	**913**
SB-5	4/15/14	15'	185
SB-5	4/15/14	25'	32.7
SB-5	4/15/14	35'	22.0
SB-6	4/14/14	0'	**15,500**
SB-6	4/14/14	5'	**1,630**
SB-6	4/14/14	10'	**1,070**
SB-6	4/14/14	15'	**2,330**
SB-6	4/14/14	25'	269
SB-6	4/14/14	35'	**1,410**
SB-7	4/15/14	0'	**9,000**
SB-7	4/15/14	5'	**3,430**
SB-7	4/15/14	10'	**3,950**
SB-7	4/15/14	15'	**715**
SB-7	4/15/14	25'	386
SB-7	4/15/14	35'	388
SB-8	4/14/14	0'	**29,600**
SB-8	4/14/14	5'	**3,220**
SB-8	4/14/14	10'	**2,220**
SB-8	4/14/14	15'	**1,430**
SB-8	4/14/14	25'	133
SB-8	4/14/14	35'	32.2
SB-9	4/14/14	0'	17.8
SB-9	4/14/14	5'	38.1
SB-9	4/14/14	10'	526
SB-9	4/14/14	15'	183
SB-9	4/14/14	25'	17.8
SB-9	4/14/14	35'	18.3
SB-10	4/14/14	0'	**4,610**
SB-10	4/14/14	5'	**851**
SB-10	4/14/14	15'	135
SB-10	4/14/14	25'	**746**
SB-10	4/14/14	35'	**1,580**
SB-10	4/14/14	60'	**631**
SB-11	4/14/14	0'	**7,360**
SB-11	4/14/14	5'	**1,150**
SB-11	4/14/14	10'	169
SB-11	4/14/14	20'	183
SB-11	4/14/14	40'	7.57
SB-11	4/14/14	60'	7.72

Table 1
Soil Analytical Summary
Central Vacuum Unit No. 266
Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recommended Remediation Action Levels			***600 (mg/kg)***
SB-12	8/20/15	0'	3.03
SB-12	8/20/15	5'	5.02
SB-12	8/20/15	10'	6.76
SB-12	8/20/15	15'	4.19
SB-12	8/20/15	20'	<2.15
SB-12	8/20/15	25'	<2.09
SB-12	8/20/15	35'	3.49
SB-13	8/20/15	0'	**28,300**
SB-13	8/20/15	5'	260
SB-13	8/20/15	10'	527
SB-13	8/20/15	15'	599
SB-13	8/20/15	20'	**613**
SB-13	8/20/15	25'	**1,180**
SB-13	8/20/15	35'	385
SB-14	8/20/15	0'	79.5
SB-14	8/20/15	5'	342
SB-14	8/20/15	10'	186
SB-14	8/20/15	15'	593
SB-14	8/20/15	20'	235
SB-14	8/20/15	25'	51.6
SB-14	8/20/15	35'	13.0
SB-15	8/20/15	0'	45.9
SB-15	8/20/15	5'	99.1
SB-15	8/20/15	10'	27.1
SB-15	8/20/15	15'	17.1
SB-15	8/20/15	20'	17.9
SB-15	8/20/15	25'	13.8
SB-15	8/20/15	35'	12.1
SB-16	8/20/15	0'	10.7
SB-16	8/20/15	5'	248
SB-16	8/20/15	10'	10.9
SB-16	8/20/15	15'	9.07
SB-16	8/20/15	20'	3.24
SB-16	8/20/15	30'	5.04
SB-16	8/20/15	50'	2.19
SB-16	8/20/15	70'	<2.12
SB-16	8/20/15	90'	2.13

Table 1
Soil Analytical Summary
Central Vacuum Unit No. 266
Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recommended Remediation Action Levels			***600 (mg/kg)***
B-1	10/25/17	4-5'	**963**
B-1	10/25/17	9-10'	44.2
B-1	10/25/17	14-15'	28.3
B-1	10/25/17	19-20'	28.7
B-1	10/25/17	24-25'	26.5
B-1	10/25/17	29-30'	32.5
B-1	10/25/17	34-35'	26.3
B-1	10/25/17	39-40'	24.6
B-1	10/25/17	44-45'	24.9
B-1	10/25/17	49-50'	23.9
B-2	10/25/17	4-5'	179
B-2	10/25/17	9-10'	53.2
B-2	10/25/17	14-15'	33.9
B-2	10/25/17	19-20'	25.6
B-2	10/25/17	24-25'	32.4
B-2	10/25/17	29-30'	24.7
B-3	10/25/17	4-5'	52.5
B-3	10/25/17	9-10'	84.4
B-3	10/25/17	14-15'	145
B-3	10/25/17	19-20'	49.9
B-3	10/25/17	24-25'	**1,070**
B-3	10/25/17	29-30'	**714**
B-4	10/25/17	4-5'	341
B-4	10/25/17	9-10'	154
B-4	10/25/17	14-15'	80.8
B-4	10/25/17	19-20'	60.5
B-4	10/25/17	24-25'	38.4
B-4	10/25/17	29-30'	40.2

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram
2. Chloride analyses by EPA Method E300.0
3. Bolded values indicate concentrations exceeding guidance RRALs
4. bgs - below ground surface
5. Depth of samples reported in feet

Appendices

Appendix A
C-141 Form and 2011 Site Sketch

RECEIVED
By JKeyes at 9:46 am, Oct 30, 2015

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

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 (CEMC)	Contact: Rob Speer
Address: 1400 Smith Street, Houston, Texas 77002	Telephone No. (713) 372-6117
Facility Name: Central Vacuum Unit No. 266	Facility Type: Injection Well

Surface Owner: State of New Mexico	Mineral Owner: State of New Mexico	API No. 30-025-30022

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	36	17S	34 E					Lea

Latitude: 32.793447° **Longitude:** -103.509700°

NATURE OF RELEASE

Type of Release: Produced Water/Release to Land	Volume of Release: 75 bbls water	Volume Recovered: Zero (0)
Source of Release: Injection Well	Date and Hour of Occurrence: 01/06/11 and 12:00 Noon	Date and Hour of Discovery: 01/06/11 and 12:00 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Larry Johnson	
By Whom? Kim Klahsen	Date and Hour: 03/06/09 and 11:58 AM	
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.*
Visible water on location due to a rupture in the injection line. After excavation completed the investigation as to why line ruptured.

Describe Area Affected and Cleanup Action Taken.*

Area affected included well pad and down slope lease road to the southeast. The injection line was shut-in and emergency one-call was initiated for excavation and repair of ruptured line.

Initial sampling activities commenced. Results of soil sampling indicated the presence of chloride concentrations in shallow soils. In response, a comprehensive soil assessment was performed to confirm the extents of the soil impacts.

Results of the additional assessment activities are provided in the attached report.

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: Rob Speer	OIL CONSERVATION DIVISION	
Printed Name: Rob Speer	Approved by Environmental Specialist:	
Title: Project Manager	Approval Date: 10/30/2015	Expiration Date: 12/30/2015
E-mail Address: rspeer@chevron.com	Conditions of Approval: Discrete site samples. Delineate and remediate per NMOCD guidelines.	Attached ☐ IRP 3948
Date: 10-29-15 Phone: (713) 372-6117		

* Attach Additional Sheets If Necessary

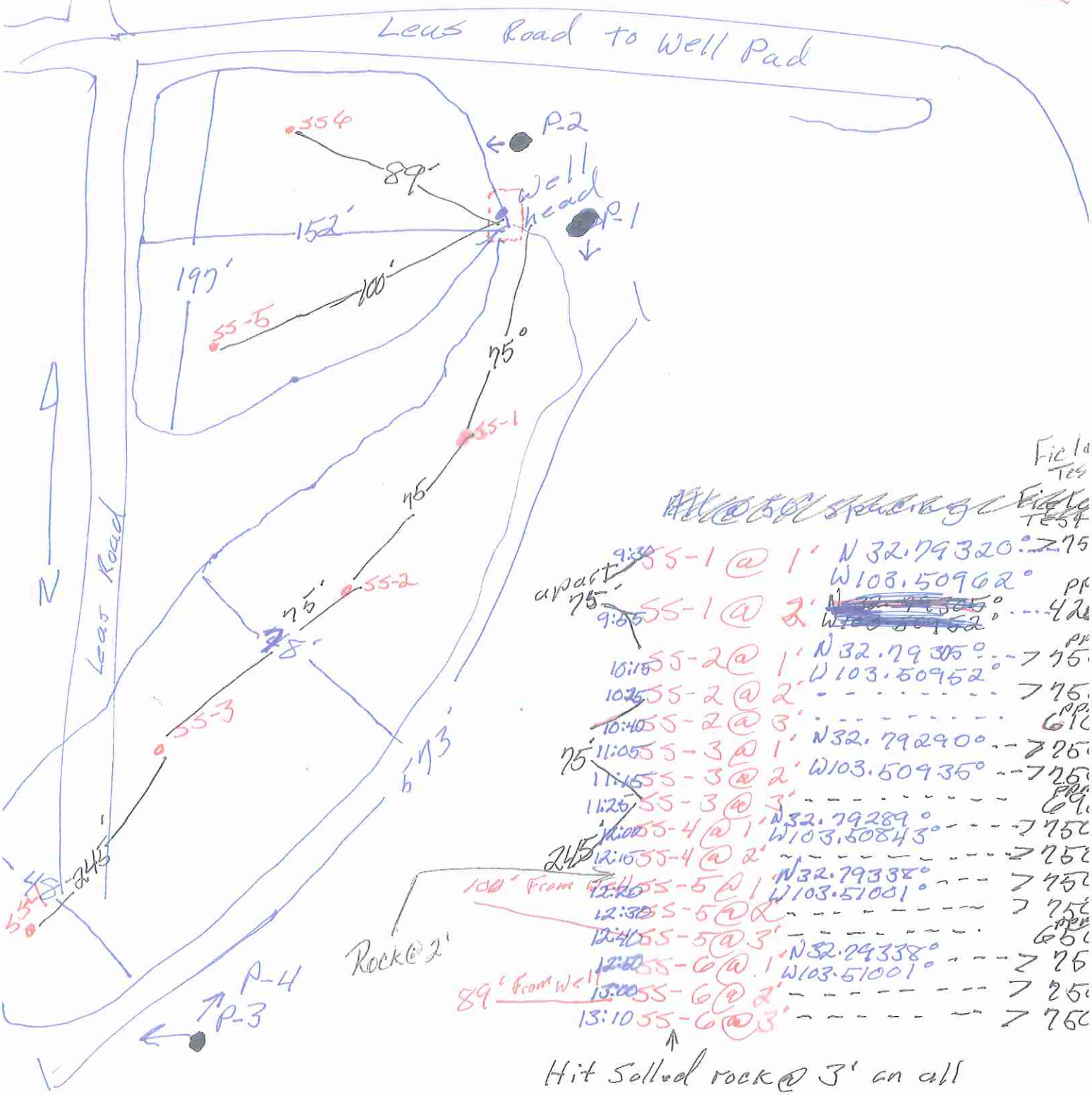
nJXK1530333917
pJXK1530334030

1-18-11

CVU # 266

Unit H, Sec. 36-T17S-R34E

A.P.I # 30-025-30022



Field Test

9:30	55-1 @ 1'	N 32.79320° W103.50962°	75
apart 75' 9:55	55-1 @ 2'	[illegible]	42
10:10	55-2 @ 1'	N 32.79305° W 103.50952°	75
10:25	55-2 @ 2'	- - - - - - - - -	75
10:40	55-2 @ 3'	- - - - - - - - -	60
75' 11:05	55-3 @ 1'	N32.79290°	75
11:15	55-3 @ 2'	W103.50935°	75
11:25	55-3 @ 3'	- - - - - - - - -	60
11:40	55-4 @ 1'	N32.79289° W103.50843°	75
12:10	55-4 @ 2'	- - - - - - - - -	75
12:20	55-5 @ 1'	N32.79338° W103.51001°	75
12:30	55-5 @ 2'	- - - - - - - - -	75
12:40	55-5 @ 3'	- - - - - - - - -	60
12:50	55-6 @ 1'	N32.79338° W103.51001°	75
13:00	55-6 @ 2'	- - - - - - - - -	75
13:10	55-6 @ 3'	- - - - - - - - -	75

Hit salted rock @ 3' on all

Appendix B
NMOSE POD Information

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2016 OCT 17 PM 1:56

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
L-14180-POD 1 (VGWU 61-MW1)	L-14180
WELL OWNER NAME(S)	**PHONE (OPTIONAL)**
ARCADIS on behalf of Chevron EMC	
WELL OWNER MAILING ADDRESS	**CITY / STATE / ZIP**
2929 Briarpark Drive, Suite 300	Houston / TX / 77042

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	47	47.48	N
	LONGITUDE	103	30	26.73	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1731	Kenny Cooper	Harrison & Cooper, Inc (DBA HCI Drilling)

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
09/20/16	09/20/16	231'	234'	

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 126.15'

DRILLING FLUID: ☐ AIR ☑ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	92	7.875	Riser-PVC	FlushJoint	4"	Sch40	
92	231	7.875	Screen-PVC	FlushJoint	4"	Sch40	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	85	7.875	Neat Cement Grout	~16	Mixed/Poured
85	89	7.875	Bentonite Chips	~1.5	Poured
89	234	7.875	Sand-8/16	~36	Poured

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 10/29/15)

FILE NUMBER	L-14180	POD NUMBER		TRN NUMBER	591768
LOCATION	18.23E.36.2.2.4			Monitor	PAGE 1 OF 2

STATE ENGINEERS OFFICE
ROSWELL, NEW MEXICO

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	L 14180 POD1	4	2	2	36	17S	34E	639756	3629715

Driller License: 1731 **Driller Company:** HARRISON & COOPER, INC (WD-1731)

Driller Name: COOPER, KENNY

Drill Start Date:	09/20/2016	**Drill Finish Date:**	09/20/2016	**Plug Date:**	
Log File Date:	10/17/2016	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	55 GPM
Casing Size:	4.00	**Depth Well:**	231 feet	**Depth Water:**	126 feet

Casing Perforations:	Top	Bottom
	92	231

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	15	15	Caliche	Y N	
15	25	10	Calichewith Tan Sand	Y N	
25	54	29	White SandyCaliche	Y N	
54	54.5	.5	Sandstone	Y N	
54.5	62	7.5	SandyCaliche	Y N	
62	90	28	RedBrown Sand	Y N	
90	110	20	PaleBrown CementedSand	Y N	
110	122	12	Light Brown Sand	Y N	
122	138	16	SandyBrown Clay	Y N	
138	141	3	RedBrown SandyClay	Y N	
141	143	3	TanSandandCaliche	Y N	
143	160	17	Brown Sand	Y N	
160	180	20	Sandwith SmallGravels	Y N	
180	200	20	Brown Sand	Y N	
200	210	10	Light Brown Sand	Y N	
210	218	8	Light Brown SandyClay	Y N	
218	230	9	LargeGravelswith Light Brown Sand	Y N	
230	234	4	RedBed	Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☑ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 55

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2016 OCT 17 PM 1:59

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Pumping water level 132.90'

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jarod Michalsky

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Kenny Cooper — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

10/06/16 — DATE

FOR OSE INTERNAL USE 2016 OCT 17 PM 1:33

WR-20 WELL RECORD & LOG (Version 10/29/2015)

FILE NUMBER	L-14180	POD NUMBER	1	TRN NUMBER	591768
LOCATION	17S.34E.36.222.4		MONITOR		PAGE 2 OF 2

STATE ENGINEER OFFICE

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

STATE ENGINEER OFFICE
ROSWELL, NEW MEXICO
2016 OCT 17 PM 1:59

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
L-14180-POD 2 (VGWU 61-MW2)	L-14180
WELL OWNER NAME(S)	PHONE (OPTIONAL)
ARCADIS on behalf of Chevron EMC	
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
2929 Briarpark Drive, Suite 300	Houston / TX / 77042

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	47	48.10	N
	LONGITUDE	103	30	25.76	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1731	Kenny Cooper	Harrison & Cooper, Inc (DBA HCI Drilling)

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
09/19/16	09/20/16	233'	235'	

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 125.95'

DRILLING FLUID: ☐ AIR ☑ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☑ ROTARY ☐ HAMMER ☐ CABLE TOOL ☐ OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	73	7.875	Riser-PVC	FlushJoint	4"	Sch40	
73	233	7.875	Screen-PVC	FlushJoint	4"	Sch40	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	65	7.875	Neat Cement Grout	~11	Mixed/Poured
65	70	7.875	Bentonite Chips	~1.5	Poured
70	235	7.875	Sand-8/16	~37	Poured

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 10/29/15)

FILE NUMBER	L-14180	POD NUMBER	2	TRN NUMBER	591768
LOCATION	T15S.R34E.36.2.2.4			monitor	PAGE 1 OF 2

2016 OCT 12 P1:09
STATE ENGINEER'S OFFICE

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	15	15	Caliche	Y N	
15	25	10	Calichewith Tan Sand	Y N	
25	54	29	White SandyCaliche	Y N	
54	54.5	.5	Sandstone	Y N	
54.5	62	7.5	SandyCaliche	Y N	
62	90	28	RedBrown Sand	Y N	
90	110	20	PaleBrown CementedSand	Y N	
110	122	12	Light Brown Sand	Y N	
122	138	16	SandyBrown Clay	Y N	
138	141	3	RedBrown SandyClay	Y N	
141	143	3	Tan SandandCaliche	Y N	
143	160	17	Brown Sand	Y N	
160	180	20	Sandwith Small Gravels	Y N	
180	200	20	Brown Sand	Y N	
200	210	10	Light Brown Sand	Y N	
210	218	8	Light Brown SandyClay	Y N	
218	234	9	LargeGravelswith Light Brown Sand	Y N	
234	235	1	RedBed	Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☑ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 55

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Pumping water level 133.17'

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jarod Michalsky

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Kenny Cooper — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

10/06/16 — DATE

STATE ENGINEER OFFICE ROSWELL, NEW MEXICO 2016 OCT 17 PM 1:59

2016 OCT 12 PM 1:39

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 10/29/2015)

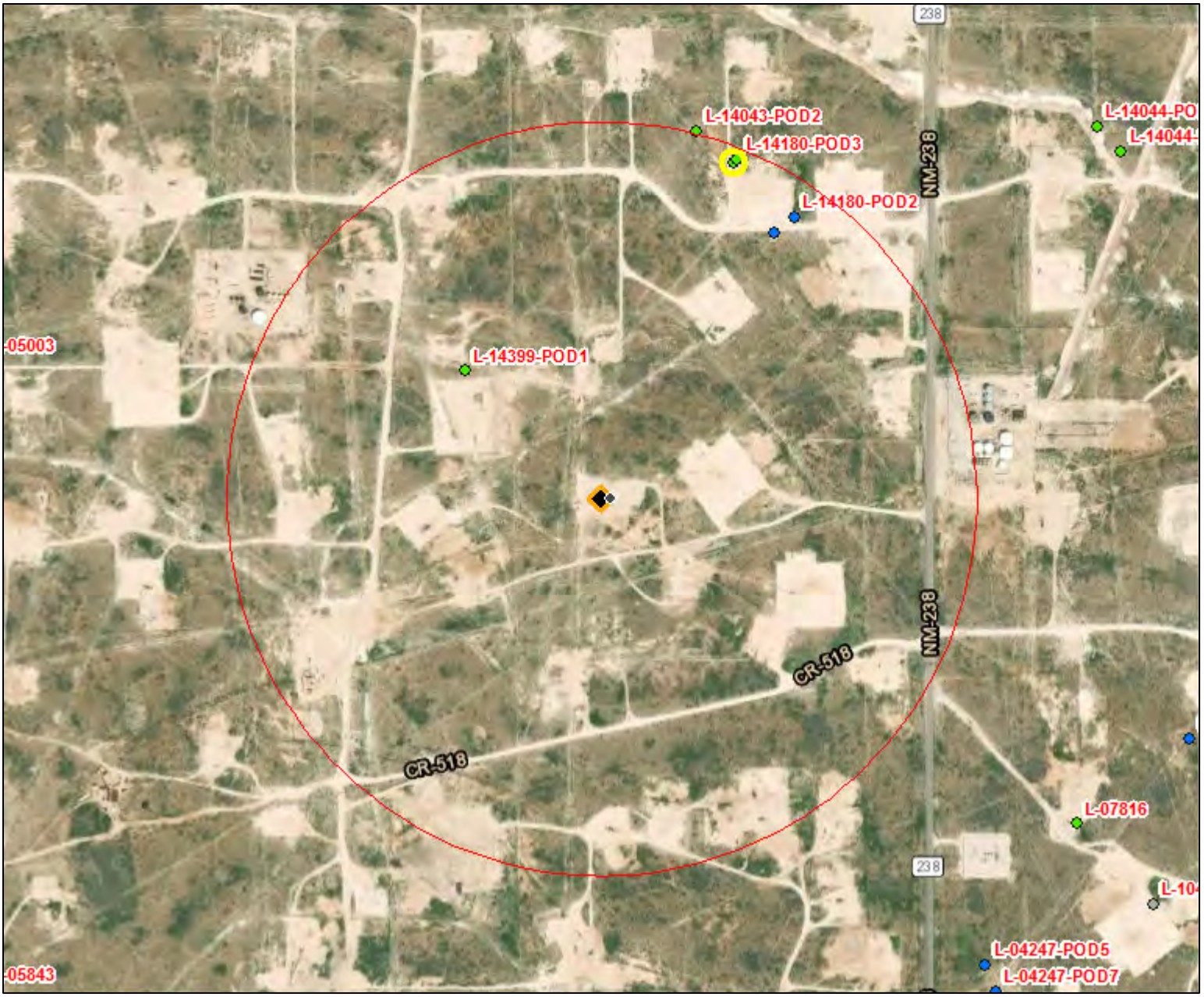
FILE NUMBER	L-14180	POD NUMBER	2	TRN NUMBER	591768
LOCATION	LTS.34E.36.2.2.4			Monitor	PAGE 2 OF 2

New Mexico Office of the State Engineer
Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Twn	Rng	(NAD83 UTM in meters) X	Y
	L 14180 POD2	4	2	2	36	17S	34E	639781	3629735

Driller License:	1731	**Driller Company:**	HARRISON & COOPER, INC (WD-1731)		
Driller Name:	COOPER, KENNY				
Drill Start Date:	09/19/2016	**Drill Finish Date:**	09/20/2016	**Plug Date:**	
Log File Date:	10/17/2016	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	55 GPM
Casing Size:	4.00	**Depth Well:**	233 feet	**Depth Water:**	126 feet

Casing Perforations:	Top	Bottom
	73	233



Coordinates

UTM - NAD 83 (m) - Zone 13

Easting 639537.581

Northing 3629371.848

State Plane - NAD 83 (f) - Zone E

Easting 794401.458

Northing 653373.639

Degrees Minutes Seconds

Latitude 32 : 47 : 36.430917

Longitude -103 : 30 : 35.340179

Location pulled from New Map Point

Spatial Information

County: Lea

Groundwater Basin: Lea County

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant

Restrictions:

NA

PLSS Description

SENESWNE Qtr of Sec 36 of 017S 034E

Derived from CADNSDI- Qtr Sec. locations are calculated and are only approximations

File Number: L-14043-POD1

Owner: RICE OPERATING COMPANY

Purpose: MON

Author:

NEW MEXICO OFFICE OF THE STATE ENGINEER

1:9,028

ft

0 185 370 740

N

7/10/2018

Source: DigitalGlobe

Date: 9/6/2017

Resolution (m): 0.5

Accuracy (m): 10.16

0.3 Miles Buffer

User Defined Point

Selected POD

OSE District Boundary

GIS WATERS PODs

Other

Active

Pending

OSE Conveyances

Acequia

Arroyo

Canal

Connector

Creek

Culvert

Ditch

Drain

Lateral

Pipe

River

Wash

Other

Appendix C
Boring Logs

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU 266
PROJECT NUMBER: 074635
CLIENT: CHEVRON
LOCATION: BUCKEYE, NEW MEXICO

HOLE DESIGNATION: B-1
DATE COMPLETED: 25 October 2017
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: R. JONES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE CHLORIDE (mg/kg/RL)
0	CALICHE, light brown, dry						
2							
4				X			963 / 4.94
6							
8							
9.00	SM-SILTY SAND/CALICHE, light brown, dry			X			44.2 / 5.00
10							
12							
14				X			28.3 / 5.00
16							
18							
19.00	SM-SILTY SAND, some caliche, light brown, dry			X			28.7 / 4.90
20							
22							
24.00	SM-SILTY SAND/CALICHE, light brown, dry			X			26.5 / 4.98
24							
26							
28							
29.00	CALICHE, dry			X			32.5 / 4.99
30							
32							
34							
34.00	SM-SILTY SAND, some caliche, light brown, dry			X			26.3 / 4.91

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 074635-WI.GPJ GHD_Corp 8/5/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU 266
PROJECT NUMBER: 074635
CLIENT: CHEVRON
LOCATION: BUCKEYE, NEW MEXICO

HOLE DESIGNATION: B-1
DATE COMPLETED: 25 October 2017
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: R. JONES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE CHLORIDE (mg/kg/RL)
36							
38							
40				X			24.6 / 4.94
42							
44				X			24.9 / 4.99
46							
48							
50	SM-SILTY SAND, light brown, dry	49.00		X			23.9 / 4.99
52	END OF BOREHOLE @ 50.0ft BGS	50.00					
54							
56							
58							
60							
62							
64							
66							
68							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

OVERBURDEN LOG 074635-WI.GPJ GHD_Corp 8/5/18

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU 266
PROJECT NUMBER: 074635
CLIENT: CHEVRON
LOCATION: BUCKEYE, NEW MEXICO

HOLE DESIGNATION: B-2
DATE COMPLETED: 25 October 2017
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: R. JONES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE CHLORIDE (mg/kg/RL)
0	CALICHE, light brown, dry						
2							
4				X			179 / 4.94
6							
8							
9.00	SM-SILTY SAND/CALICHE, light brown, dry			X			53.2 / 4.94
10							
12							
14				X			33.9 / 4.97
16							
18							
19.00	SM-SILTY SAND, some caliche, light brown, dry			X			25.6 / 4.95
20							
22							
24				X			32.4 / 4.99
26							
28							
30				X			24.7 / 4.90
30.00	END OF BOREHOLE @ 30.0ft BGS						
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU 266
PROJECT NUMBER: 074635
CLIENT: CHEVRON
LOCATION: BUCKEYE, NEW MEXICO

HOLE DESIGNATION: B-3
DATE COMPLETED: 25 October 2017
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: R. JONES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE CHLORIDE (mg/kg/RL)
0	CALICHE, light brown, dry						
2							
4				X			52.5 / 4.94
6							
8							
9.00	SM-SILTY SAND/CALICHE, light brown, dry			X			84.4 / 4.90
10							
12							
14				X			145 / 4.96
16							
18							
19.00	SM-SILTY SAND, some caliche, light brown, slightly damp			X			49.9 / 4.99
20							
22							
24				X			1070 / 5.00
26							
28							
30				X			714 / 4.98
30.00	END OF BOREHOLE @ 30.0ft BGS						
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

STRATIGRAPHIC LOG
(OVERBURDEN)

PROJECT NAME: CVU 266
PROJECT NUMBER: 074635
CLIENT: CHEVRON
LOCATION: BUCKEYE, NEW MEXICO

HOLE DESIGNATION: B-4
DATE COMPLETED: 25 October 2017
DRILLING METHOD: AIR ROTARY
FIELD PERSONNEL: R. JONES

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft	SAMPLE NUMBER	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE 'N' VALUE	SAMPLE CHLORIDE (mg/kg/RL)
0	CALICHE, light brown, dry						
2							
4				X			341 / 24.7
6							
8							
9.00	SM-SILTY SAND/CALICHE, light brown, dry			X			154 / 4.93
10							
12							
14.00	CALICHE, light brown, dry			X			80.8 / 4.97
16							
18							
19.00	SM-SILTY SAND, some caliche, light brown, dry			X			60.5 / 5.00
20							
22							
24				X			38.4 / 4.98
26							
28							
30				X			40.2 / 4.99
30.00	END OF BOREHOLE @ 30.0ft BGS						
32							
34							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

Appendix D
Soil Analytical Report

Certificate of Analysis Summary 566619

GHD Services, INC- Midland, Midland, TX

Project Name: CVU 266

Project Id: 074635
Contact: Bernie Bockisch
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-25-17 02:10 pm
Report Date: 07-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566619-001		566619-002		566619-003		566619-004		566619-005		566619-006	
	Field Id:	B-1-S-4-5-171025		B-1-S-9-10-171025		B-1-S-14-15-171025		B-1-S-19-20-171025		B-1-S-24-25-171025		B-1-S-29-30-171025	
	Depth:	4-5		9-10		14-15		19-20		24-25		29-30	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-17 10:55		Oct-25-17 10:58		Oct-25-17 11:01		Oct-25-17 11:04		Oct-25-17 11:07		Oct-25-17 11:10	
Chloride by EPA 300	***Extracted:***	Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00	
	Analyzed:	Nov-03-17 19:26		Nov-03-17 19:53		Nov-03-17 20:02		Nov-03-17 20:10		Nov-03-17 20:19		Nov-03-17 20:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		963	4.94	44.2	5.00	28.3	5.00	28.7	4.90	26.5	4.98	32.5	4.99
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.31	1.00	9.85	1.00	16.2	1.00	8.52	1.00	4.79	1.00	2.74	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566619

GHD Services, INC- Midland, Midland, TX

Project Name: CVU 266

Project Id: 074635
Contact: Bernie Bockisch
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-25-17 02:10 pm
Report Date: 07-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566619-007		566619-008		566619-009		566619-010		566619-011		566619-012	
	Field Id:	B-1-S-34-35-171025		B-1-S-39-40-171025		B-1-S-44-45-171025		B-1-S-49-50-171025		B-4-S-4-5-171025		B-4-S-9-10-171025	
	Depth:	34-35		39-40		44-45		49-50		4-5		9-10	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-17 11:13		Oct-25-17 11:16		Oct-25-17 11:19		Oct-25-17 11:22		Oct-25-17 11:45		Oct-25-17 11:48	
Chloride by EPA 300	***Extracted:***	Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00	
	Analyzed:	Nov-03-17 21:30		Nov-03-17 20:55		Nov-03-17 21:03		Nov-03-17 21:12		Nov-03-17 21:21		Nov-03-17 21:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		26.3	4.91	24.6	4.94	24.9	4.99	23.9	4.99	341	24.7	154	4.93
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.25	1.00	5.39	1.00	4.84	1.00	3.67	1.00	7.02	1.00	5.14	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566619

GHD Services, INC- Midland, Midland, TX

Project Name: CVU 266

Project Id: 074635
Contact: Bernie Bockisch
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-25-17 02:10 pm
Report Date: 07-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566619-013		566619-014		566619-015		566619-016		566619-017		566619-018	
	Field Id:	B-4-S-14-15-171025		B-4-S-19-20-171025		B-4-S-24-25-171025		B-4-S-29-30-171025		B-2-S-4-5-171025		B-2-S-9-10-171025	
	Depth:	14-15		19-20		24-25		29-30		4-5		9-10	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-17 11:51		Oct-25-17 11:54		Oct-25-17 11:57		Oct-25-17 12:00		Oct-25-17 12:20		Oct-25-17 12:23	
Chloride by EPA 300	***Extracted:***	Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 09:00		Nov-03-17 09:00	
	Analyzed:	Nov-03-17 22:05		Nov-03-17 22:32		Nov-03-17 22:41		Nov-03-17 22:49		Nov-03-17 13:50		Nov-03-17 14:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		80.8	4.97	60.5	5.00	38.4	4.98	40.2	4.99	179	4.94	53.2	4.94
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.38	1.00	4.10	1.00	2.99	1.00	3.86	1.00	4.99	1.00	2.22	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566619

GHD Services, INC- Midland, Midland, TX

Project Name: CVU 266

Project Id: 074635
Contact: Bernie Bockisch
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-25-17 02:10 pm
Report Date: 07-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	566619-019		566619-020		566619-021		566619-022		566619-023		566619-024	
	Field Id:	B-2-S-14-15-171025		B-2-S-19-20-171025		B-2-S-24-25-171025		B-2-S-29-30-171025		B-3-S-4-5-171025		B-3-S-9-10-171025	
	Depth:	14-15		19-20		24-25		29-30		4-5		9-10	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-17 12:26		Oct-25-17 12:29		Oct-25-17 12:32		Oct-25-17 12:35		Oct-25-17 12:50		Oct-25-17 12:53	
Chloride by EPA 300	***Extracted:***	Nov-03-17 09:00		Nov-03-17 09:00		Nov-03-17 09:00		Nov-03-17 09:00		Nov-03-17 09:00		Nov-03-17 09:00	
	Analyzed:	Nov-03-17 14:25		Nov-03-17 14:52		Nov-03-17 15:01		Nov-03-17 15:10		Nov-03-17 15:18		Nov-03-17 15:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		33.9	4.97	25.6	4.95	32.4	4.99	24.7	4.90	52.5	4.94	84.4	4.90
Percent Moisture	***Extracted:***												
	Analyzed:	Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-27-17 10:00		Oct-30-17 11:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3.64	1.00	5.32	1.00	6.25	1.00	4.43	1.00	29.8	1.00	12.6	1.00

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 566619

GHD Services, INC- Midland, Midland, TX

Project Name: CVU 266

Project Id: 074635
Contact: Bernie Bockisch
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-25-17 02:10 pm
Report Date: 07-NOV-17
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	566619-025		566619-026		566619-027		566619-028		566619-029	
	Field Id:	B-3-S-14-15-171025		B-3-S-19-20-171025		B-3-S-24-25-171025		B-3-S-29-30-171025		DUP-1--171025	
	Depth:	14-15		19-20		24-25		29-30		0-0	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-25-17 12:56		Oct-25-17 12:59		Oct-25-17 13:02		Oct-25-17 13:05		Oct-25-17 00:00	
Chloride by EPA 300	***Extracted:***	Nov-03-17 09:00		Nov-03-17 09:00		Nov-03-17 12:00		Nov-03-17 12:00		Nov-03-17 12:00	
	Analyzed:	Nov-03-17 15:36		Nov-03-17 15:45		Nov-03-17 22:58		Nov-03-17 23:07		Nov-03-17 23:16	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		145	4.96	49.9	4.99	1070	5.00	714	4.98	90.3	4.92
Percent Moisture	***Extracted:***										
	Analyzed:	Oct-30-17 11:00		Oct-30-17 11:00		Oct-30-17 11:00		Oct-30-17 11:00		Oct-30-17 11:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.77	1.00	13.1	1.00	38.4	1.00	38.2	1.00	4.44	1.00

Mike Kimmel
Client Services Manager

Analytical Report 566619

for

GHD Services, INC- Midland

Project Manager: Bernie Bockisch

CVU 266

074635

07-NOV-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

07-NOV-17

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

Reference: XENCO Report No(s): **566619**
CVU 266
Project Address: Lea Co, NM

Bernie Bockisch:

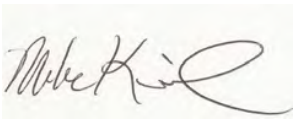
We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 566619. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory 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. 566619 will be filed for 45 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,



Mike Kimmel
Client Services Manager

Sample Cross Reference 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
B-1-S-4-5-171025	S	10-25-17 10:55	4 - 5	566619-001
B-1-S-9-10-171025	S	10-25-17 10:58	9 - 10	566619-002
B-1-S-14-15-171025	S	10-25-17 11:01	14 - 15	566619-003
B-1-S-19-20-171025	S	10-25-17 11:04	19 - 20	566619-004
B-1-S-24-25-171025	S	10-25-17 11:07	24 - 25	566619-005
B-1-S-29-30-171025	S	10-25-17 11:10	29 - 30	566619-006
B-1-S-34-35-171025	S	10-25-17 11:13	34 - 35	566619-007
B-1-S-39-40-171025	S	10-25-17 11:16	39 - 40	566619-008
B-1-S-44-45-171025	S	10-25-17 11:19	44 - 45	566619-009
B-1-S-49-50-171025	S	10-25-17 11:22	49 - 50	566619-010
B-4-S-4-5-171025	S	10-25-17 11:45	4 - 5	566619-011
B-4-S-9-10-171025	S	10-25-17 11:48	9 - 10	566619-012
B-4-S-14-15-171025	S	10-25-17 11:51	14 - 15	566619-013
B-4-S-19-20-171025	S	10-25-17 11:54	19 - 20	566619-014
B-4-S-24-25-171025	S	10-25-17 11:57	24 - 25	566619-015
B-4-S-29-30-171025	S	10-25-17 12:00	29 - 30	566619-016
B-2-S-4-5-171025	S	10-25-17 12:20	4 - 5	566619-017
B-2-S-9-10-171025	S	10-25-17 12:23	9 - 10	566619-018
B-2-S-14-15-171025	S	10-25-17 12:26	14 - 15	566619-019
B-2-S-19-20-171025	S	10-25-17 12:29	19 - 20	566619-020
B-2-S-24-25-171025	S	10-25-17 12:32	24 - 25	566619-021
B-2-S-29-30-171025	S	10-25-17 12:35	29 - 30	566619-022
B-3-S-4-5-171025	S	10-25-17 12:50	4 - 5	566619-023
B-3-S-9-10-171025	S	10-25-17 12:53	9 - 10	566619-024
B-3-S-14-15-171025	S	10-25-17 12:56	14 - 15	566619-025
B-3-S-19-20-171025	S	10-25-17 12:59	19 - 20	566619-026
B-3-S-24-25-171025	S	10-25-17 13:02	24 - 25	566619-027
B-3-S-29-30-171025	S	10-25-17 13:05	29 - 30	566619-028
DUP-1--171025	S	10-25-17 00:00	0 - 0	566619-029

Client Name: GHD Services, INC- Midland

Project Name: CVU 266

Project ID: *074635*
Work Order Number(s): *566619*

Report Date: *07-NOV-17*
Date Received: *10/25/2017*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3032435 Chloride by EPA 300

Lab Sample ID 566619-007 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 566619-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -027, -028, -029.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-4-5-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-001	Date Collected:	10.25.17 10.55	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**963**	4.94	mg/kg	11.03.17 19.26		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-9-10-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-002	Date Collected:	10.25.17 10.58	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**44.2**	5.00	mg/kg	11.03.17 19.53		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-14-15-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-003	Date Collected:	10.25.17 11.01	Sample Depth:	14 - 15
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.3**	5.00	mg/kg	11.03.17 20.02		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-19-20-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-004	Date Collected:	10.25.17 11.04	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**28.7**	4.90	mg/kg	11.03.17 20.10		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-24-25-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-005	Date Collected:	10.25.17 11.07	Sample Depth:	24 - 25
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.5**	4.98	mg/kg	11.03.17 20.19		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-29-30-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-006	Date Collected:	10.25.17 11.10	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**32.5**	4.99	mg/kg	11.03.17 20.46		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-34-35-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-007	Date Collected:	10.25.17 11.13	Sample Depth:	34 - 35
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**26.3**	4.91	mg/kg	11.03.17 21.30		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-39-40-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-008	Date Collected:	10.25.17 11.16	Sample Depth:	39 - 40
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.6**	4.94	mg/kg	11.03.17 20.55		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-44-45-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-009	Date Collected:	10.25.17 11.19	Sample Depth:	44 - 45
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.9**	4.99	mg/kg	11.03.17 21.03		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-1-S-49-50-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-010	Date Collected:	10.25.17 11.22	Sample Depth:	49 - 50
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**23.9**	4.99	mg/kg	11.03.17 21.12		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-4-S-4-5-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-011	Date Collected:	10.25.17 11.45	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**341**	24.7	mg/kg	11.03.17 21.21		5

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-4-S-9-10-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-012	Date Collected:	10.25.17 11.48	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**154**	4.93	mg/kg	11.03.17 21.56		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-4-S-14-15-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-013	Date Collected:	10.25.17 11.51	Sample Depth:	14 - 15
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**80.8**	4.97	mg/kg	11.03.17 22.05		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-4-S-19-20-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-014	Date Collected:	10.25.17 11.54	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**60.5**	5.00	mg/kg	11.03.17 22.32		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-4-S-24-25-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-015	Date Collected:	10.25.17 11.57	Sample Depth:	24 - 25
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**38.4**	4.98	mg/kg	11.03.17 22.41		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-4-S-29-30-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-016	Date Collected:	10.25.17 12.00	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**40.2**	4.99	mg/kg	11.03.17 22.49		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-2-S-4-5-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-017	Date Collected:	10.25.17 12.20	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**179**	4.94	mg/kg	11.03.17 13.50		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-2-S-9-10-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-018	Date Collected:	10.25.17 12.23	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**53.2**	4.94	mg/kg	11.03.17 14.17		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-2-S-14-15-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-019	Date Collected:	10.25.17 12.26	Sample Depth:	14 - 15
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**33.9**	4.97	mg/kg	11.03.17 14.25		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-2-S-19-20-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-020	Date Collected:	10.25.17 12.29	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**25.6**	4.95	mg/kg	11.03.17 14.52		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-2-S-24-25-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-021	Date Collected:	10.25.17 12.32	Sample Depth:	24 - 25
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**32.4**	4.99	mg/kg	11.03.17 15.01		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-2-S-29-30-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-022	Date Collected:	10.25.17 12.35	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**24.7**	4.90	mg/kg	11.03.17 15.10		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-3-S-4-5-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-023	Date Collected:	10.25.17 12.50	Sample Depth:	4 - 5
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**52.5**	4.94	mg/kg	11.03.17 15.18		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-3-S-9-10-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-024	Date Collected:	10.25.17 12.53	Sample Depth:	9 - 10
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**84.4**	4.90	mg/kg	11.03.17 15.27		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-3-S-14-15-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-025	Date Collected:	10.25.17 12.56	Sample Depth:	14 - 15
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**145**	4.96	mg/kg	11.03.17 15.36		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-3-S-19-20-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-026	Date Collected:	10.25.17 12.59	Sample Depth:	19 - 20
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 09.00	Basis:	Wet Weight
Seq Number:	3032358				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**49.9**	4.99	mg/kg	11.03.17 15.45		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-3-S-24-25-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-027	Date Collected:	10.25.17 13.02	Sample Depth:	24 - 25
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1070**	5.00	mg/kg	11.03.17 22.58		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**B-3-S-29-30-171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-028	Date Collected:	10.25.17 13.05	Sample Depth:	29 - 30
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**714**	4.98	mg/kg	11.03.17 23.07		1

Certificate of Analytical Results 566619

GHD Services, INC- Midland, Midland, TX

CVU 266

Sample Id:	**DUP-1--171025**	Matrix:	Soil	Date Received:	10.25.17 14.10
Lab Sample Id:	566619-029	Date Collected:	10.25.17 00.00	Sample Depth:	0 - 0
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MNV			% Moisture:	
Analyst:	MNV	Date Prep:	11.03.17 12.00	Basis:	Wet Weight
Seq Number:	3032435				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**90.3**	4.92	mg/kg	11.03.17 23.16		1

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

QC Summary 566619

GHD Services, INC- Midland

CVU 266

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032358 Matrix: Solid Date Prep: 11.03.17
MB Sample Id: 7633753-1-BLK LCS Sample Id: 7633753-1-BKS LCSD Sample Id: 7633753-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	251	100	251	100	90-110	0	20	mg/kg	11.03.17 11:28	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032435 Matrix: Solid Date Prep: 11.03.17
MB Sample Id: 7633758-1-BLK LCS Sample Id: 7633758-1-BKS LCSD Sample Id: 7633758-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	239	96	242	97	90-110	1	20	mg/kg	11.03.17 19:08	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032358 Matrix: Soil Date Prep: 11.03.17
Parent Sample Id: 566619-017 MS Sample Id: 566619-017 S MSD Sample Id: 566619-017 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	179	247	427	100	427	100	90-110	0	20	mg/kg	11.03.17 13:59	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032358 Matrix: Soil Date Prep: 11.03.17
Parent Sample Id: 567279-007 MS Sample Id: 567279-007 S MSD Sample Id: 567279-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	136	250	387	100	387	100	90-110	0	20	mg/kg	11.03.17 11:55	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032435 Matrix: Soil Date Prep: 11.03.17
Parent Sample Id: 566619-001 MS Sample Id: 566619-001 S MSD Sample Id: 566619-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	963	247	1200	96	1200	96	90-110	0	20	mg/kg	11.03.17 19:35	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3032435 Matrix: Soil Date Prep: 11.03.17
Parent Sample Id: 566619-007 MS Sample Id: 566619-007 S MSD Sample Id: 566619-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.3	246	244	88	245	89	90-110	0	20	mg/kg	11.03.17 21:39	X

QC Summary 566619

GHD Services, INC- Midland

CVU 266

Analytical Method: **Percent Moisture**
Seq Number: 3031772 Matrix: Solid
MB Sample Id: 3031772-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	10.27.17 10:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031775 Matrix: Solid
MB Sample Id: 3031775-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	10.27.17 10:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031777 Matrix: Solid
MB Sample Id: 3031777-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<1.00	%	10.30.17 11:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031772 Matrix: Soil
Parent Sample Id: 566503-051 MD Sample Id: 566503-051 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	12.9	11.5	11	20	%	10.27.17 10:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031772 Matrix: Soil
Parent Sample Id: 566619-005 MD Sample Id: 566619-005 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.79	4.90	2	20	%	10.27.17 10:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031775 Matrix: Soil
Parent Sample Id: 566619-015 MD Sample Id: 566619-015 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	2.99	3.21	7	20	%	10.27.17 10:00	

QC Summary 566619

GHD Services, INC- Midland

CVU 266

Analytical Method: **Percent Moisture**
Seq Number: 3031775 Matrix: Soil
Parent Sample Id: 566619-023 MD Sample Id: 566619-023 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	29.8	32.9	10	20	%	10.27.17 10:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031777 Matrix: Soil
Parent Sample Id: 566619-024 MD Sample Id: 566619-024 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	12.6	10.8	15	20	%	10.30.17 11:00	

Analytical Method: **Percent Moisture**
Seq Number: 3031777 Matrix: Soil
Parent Sample Id: 566621-016 MD Sample Id: 566621-016 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	5.33	5.22	2	20	%	10.30.17 11:00	

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Page 1 Of 3

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Xenco Job # 516161619

Client / Reporting Information

Company Name / Branch: GHD / Albuquerque

Company Address: 6121 Indian School Road NE #200, Albuquerque, NM 87110

Email: Chris.Knight@ghd.com

Phone No: 512-506-8803

Project Contact: Bernard.Bockisch@ghd.com

Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU 266 / 074635

Project Location: Lea County, NM

Invoice To:

PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = 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	Chloride	Moisture	Field Comments
1	B-1-S-4-5-171025	4-5	10/25	1055	S	1								1			
2	B-1-S-9-10-171025	9-10		1058	S	1								1			
3	B-1-S-14-15-171025	14-15		1101	S	1								1			
4	B-1-S-19-20-171025	19-20		1104	S	1								1			
5	B-1-S-24-25-171025	24-25		1107	S	1								1			
6	B-1-S-29-30-171025	29-30		1110	S	1								1			
7	B-1-S-34-35-171025	34-35		1113	S	1								1			
8	B-1-S-39-40-171025	39-40		1116	S	1								1			
9	B-1-S-44-45-171025	44-45		1119	S	1								1			
10	B-1-S-49-50-171025	49-50	↓	1122	S	1								1			

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 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

FED

Notes:

Temp: 2.5 IR ID:R-8

CF:(0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: 2.3

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

	Relinquished by:	Date Time:	Received By:
1	Rebecca Jones	10/25-1410	1
2	Relinquished By:	Date Time:	Received By: 10/26 11:15
3	Relinquished by:	Date Time:	Received By:
4	Relinquished By:	Date Time:	Received By:
5	Relinquished by:	Date Time:	Received By:

Custody Seal # | Preserved where applicable | On Ice ✓ | Cooler Temp. 3.2 | Thermo. Corr. Factor

CHAIN OF CUSTODY

Page 2 Of 3

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job #

Client / Reporting Information

Company Name / Branch: GHD / Albuquerque
Company Address: 6121 Indian School Road NE #200, Albuquerque, NM 87110
Email: Chris.Knight@ghd.com
Phone No: 512-506-8803
Project Contact: Bernard.Bockisch@ghd.com
Samplers's Name Rebecca Jones

Project Information

Project Name/Number: CVU 266 / 074635
Project Location: Lea County, NM
Invoice To:
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = 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	Chloride	Moisture	Field Comments
1	B-4-S-4-5-171025	4-5	10/25	1145	S	1								1			
2	B-4-S-9-10-171025	9-10		1148	S	1								1			
3	B-4-S-14-15-171025	14-15		1151	S	1								1			
4	B-4-S-19-20-171025	19-20		1154	S	1								1			
5	B-4-S-24-25-171025	24-25		1157	S	1								1			
6	B-4-S-29-30-171025	29-30		1200	S	1								1			
7	B-2-S-4-5-171025	4-5		1220	S	1								1			
8	B-2-S-9-10-171025	9-10		1223	S	1								1			
9	B-2-S-14-15-171025	14-15		1226	S	1								1			
10	B-2-S-19-20-171025	19-20	↓	1229	S	1								1			

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Notes:

Temp: 2.5
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.3

IR ID:R-8

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	Rebecca Jones	10/25-1910	1	2		2 10/26 11:15
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 ☐ Cooler Temp. 3.2 Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

CHAIN OF CUSTODY

Page 3 Of #3

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1	~~SB~~-2-S-24-25-171025	24-25	10/25	1232	S	1								1			
2	~~SB~~-2-S-29-30-171025	29-30		1235	S	1								1			
3	B-3-S-4-5-171025	4-5		1250	S	1								1			
4	B-3-S-9-10-171025	9-10		1253	S	1								1			
5	B-3-S-14-15-171025	14-15		1256	S	1								1			
6	B-3-S-19-20-171025	19-20		1259	S	1								1			
7	B-3-S-24-25-171025	24-25		1302	S	1								1			
8	B-3-S-29-30-171025	29-30		1305	S	1								1			
9	DUP-1-171025	—	↓	—	S	1								1			
10					S	1								1			

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Notes:

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(6-23: +0.2°C)
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	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3			3	4		4
	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp / Thermo. Corr. Factor
5			5		☐	☒ 3.2°C

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 10/25/2017 02:10:00 PM

Work Order #: 566619

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)?	3.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 10/26/2017

Checklist reviewed by: Kelsey Brooks Date: 10/26/2017