Robert Speer
Portfolio Manager,
Upstream Business Unit
Remediation Team

Chevron Environmental Management Company
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Cell (713) 301-7274
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February 2, 2017

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

Re: LPU 59 Site Assessment Report

Dear Ms. Yu:

Please find enclosed for your files copies of the following report for the Lovington Paddock Unit #59 produced water release project site.

- *LPU 59 – 2016 Soil Assessment and Delineation Report, Unit G - Section 1 – Township 17 South – Range 36 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 40 bbls of produced water from a failed valve. Soil sampling in the release area indicate that vertical and horizontal delineation of Chlorides and hydrocarbon components has been achieved at the site.

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

Site Assessment Report

Lovington Paddock Unit 59
Produced Water Release
Lea County, New Mexico

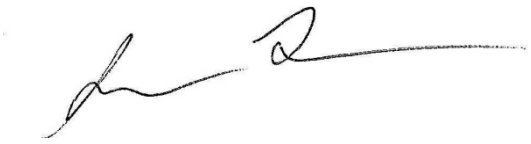
Chevron Environmental Management Company

GHD | 6320 Rothway Street Suite 100 Houston Texas 77040
073819 | Report No 4 | January 2017

Site Assessment Report

Lovington Paddock Unit 59
Produced Water Release
Lea County, New Mexico

Chevron Environmental Management Company



Scott Foord, P.G.

Project Manager

Bernard Bockisch

Senior Project Manager

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

073819 | Report No 4 | January 2017

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1. Introduction

On behalf of Chevron Environmental Management Company (CEMC), GHD Services Inc. (GHD - formerly Conestoga-Rovers & Associates) prepared this report summarizing site assessment activities at the Lovington Paddock Unit (LPU) 59 site (hereafter referred to as the "Site"). The Site is located approximately 5 miles southeast of Lovington in Lea County, New Mexico in Unit G, Section 1, Township 17 South, Range 36 East. The land surface is owned by the City of Lovington and the minerals are managed by the State of New Mexico. The location of the Site is identified on the vicinity map of Figure 1 and the aerial map of Figure 2. Site details are shown on Figure 3.

Monitoring well MW-1 was installed in October 2016 to assess potential groundwater impact in follow-up to previous soil analytical results collected and reported during previous assessments in 2010 through 2012 which indicated chloride concentrations extending vertically to a depth of at least 70 feet below ground surface (ft bgs).

2. Background

According to historical records provided to GHD, an estimated 40 barrels (10 barrels recovered) produced water release from a pipe in a valve box occurred at this location on June 4, 2006. The approximate affected area was estimated at 200 feet x 200 feet. According to the Petroleum Recovery Research Center database and the New Mexico Office of the State Engineer (NMOSE), the historical depth to groundwater from water wells in the immediate area averaged approximately 64 ft bgs. A water well map is provided in in Appendix B.

3. Remediation Standards

The NMOCD Ranking Criteria for soil and corresponding Recommended Remedial Action Levels (RRALs) established by NMOCD are summarized in the table below.

***New Mexico Oil Conservation Division Site Assessment*[1]**	
Depth to Ground Water (50 ft - 99 ft)	10
Wellhead Protection Area (>1000 ft from water source, >200 ft from domestic source)	0
Distance to Surface Body Water (>1000 horizontal ft)	0
Ranking Criteria Total Score	**10***
Because the ranking criteria total score is 10, NMOCD established RRALs for soil are **10 ppm for benzene, 50 ppm for BTEX, 1000 ppm for total TPH, and 250 ppm for chlorides.*	

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

The NMOCD provides guidance for remediation of contaminants of oil field wastes or products in *Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993)*. The guidance requires remediation of groundwater to the human health standards of the New Mexico Water Quality Control Commission (NMWQCC) set forth in New Mexico Administrative Code 20.6.2.3103. Standards for benzene, toluene, ethylbenzene, xylenes (BTEX) and chloride are listed below.

Analyte	*NMWQCC Groundwater Standard (mg/L)*
Benzene	0.01
Toluene	0.75
Ethylbenzene	0.75
Total Xylenes	0.62
Chloride	250

NMWQCC groundwater standards do not include total petroleum hydrocarbons (TPH).

4. Soil Assessment

Shallow soil samples were collected from the impacted area in July 2010 from six hand augered sample locations (AH-1, AH-2, AH-3, AH-4, AH-5, and AH-6) at sampling intervals of 0 to 0.5 ft bgs, and in August 2010 from six locations in a sample trench (T-1, T-2, T-3, T-4, T-5, and T-6) at sample intervals of 0 to 1 ft bgs. Sample analyses included TPH, BTEX, and chlorides from the July 2010 sampling event and chlorides only during the August 2010 sampling event. TPH and BTEX concentrations were below laboratory detection limits in the upper sample intervals from the hand augered locations (0 to 0.5 ft) and therefore were not analyzed for at the deeper intervals collected from the trench samples. Chloride results from both intervals collected at locations AH-2, AH-4, T-2, T-3, T-4, T-5, and T-6 exceeded the RRAL of 250 milligrams per kilogram (mg/kg) for chlorides.

In May 2011, GHD subcontractor Harrison Cooper, Inc. (HCI) advanced five soil borings (SB-1, SB-2, SB-3, SB-4, and SB-5) utilizing an air-rotary drilling rig to depths of 20 to 40 ft bgs, and soil samples were collected at five-foot intervals within each of the five soil borings. Samples were placed in laboratory-supplied sample containers on ice, labeled, and submitted to ALS Environmental laboratory in Houston, Texas for analysis of chlorides by EPA Method 300.0.

Laboratory analytical results indicated that the vertical extent of chloride impact was not yet defined in borings SB-2 and SB-3. On June 27, 2012, GHD and CEMC met at the NMOCD District 1 Hobbs office to discuss the path forward for the Site. The NMOCD requested that additional assessment be completed to further evaluate the vertical extent of chloride impacts.

In December 2012, under the supervision of GHD, HCI advanced two additional borings (SB-2b and SB-3b) utilizing an air-rotary drilling rig to depths of 70 ft bgs. Soil samples were collected from 40 to 70 ft bgs at 10-ft intervals in an effort to delineate the vertical extent of chloride impacts to soil. Samples were placed in laboratory-supplied sample containers on ice, labeled, and submitted to Lancaster Labs in Lancaster, Pennsylvania for analysis of chlorides by EPA Method 300.0. Groundwater was not encountered in either boring. Following completion of activities, the borings were backfilled with hydrated bentonite pellets to the ground surface.

4.1 Soil Analytical Results

Analytical results associated with the soil boring activities of 2011 and 2012 are discussed in the following section. Analytical results are presented in Table 1, shown in map view on Figure 4, and are summarized below:

- Samples from SB-1, SB-4 & SB-5 demonstrated chloride concentrations below the site specific RRAL of 250 mg/kg for chlorides to a depth of 20 feet bgs.
- Samples from SB-2 exhibited chloride concentrations above the 250 mg/kg RRAL in all sample intervals collected ranging from 9-10 ft to 39-40 ft, with concentrations ranging from 312 mg/kg (9-10 ft) to 1,260 mg/kg (19-20 ft).
- Boring SB-2b exhibited chloride concentrations exceeding the RRAL in two sample intervals (49-50 ft at 606 mg/kg and 59-60 ft at 618 mg/kg).
- Samples from SB-3 consistently exceeded the RRAL for chloride at depths extending from 9 to 20 ft bgs, with concentrations ranging from 338 mg/kg (19-20) ft to 436 mg/kg (9-10 ft).
- Boring SB-3b exhibited chloride concentrations exceeding the RRAL in all sample intervals collected (49-50 ft at 2,210 mg/kg, 59-60 ft at 1,750 mg/kg, and 69-70 ft at 1,690 mg/kg).

Laboratory analytical reports are provided in Appendix D.

5. Groundwater Assessment

Vertical delineation of chloride impact was not achieved in soil boring SB-3b at a depth of 70 ft bgs. As such, installation and sampling of a monitoring well was required to determine whether groundwater was impacted at the Site.

5.1 Monitoring Well Installation

Monitoring well MW-1 was installed on October 7, 2016 in the impacted area at a location near former SB-3b (Figure 4). MW-1 was installed east of SB-3b due to multiple above ground flowlines in the area limiting drill rig access. The groundwater gradient is believed to be west to east at the Site based on historical gauging data collected at the Lovington Water Plant Site, Case No. 1R394, OGRID No. 4323, located approximately 600 ft north of the Site.

Prior to mobilizing drilling equipment to the Site, the boring location was marked and utility notifications were submitted. The boring location was cleared with a hydroexcavator to a depth of 1.5 ft bgs before refusal was encountered in caliche soil. A mud-rotary drilling rig operated by GHD subcontractor White Drilling Company, a New Mexico-licensed water well driller, advanced the boring to a total depth of 235 ft bgs. During drilling, a GHD geologist observed soil cuttings at 10-ft intervals and recorded subsurface lithology on boring logs. No soil samples were collected for laboratory analysis. Groundwater was encountered during drilling at a depth of 101 ft bgs.

MW-1 was completed with four-inch diameter, schedule 40 polyvinyl chloride (PVC) casing, 130 ft of 0.010-inch PVC slotted screen, a 20/40 sand filter pack overlain by a bentonite seal extending up to 10 ft bgs and riser casing extending above the ground surface. The well was completed at the surface with a stick-up protective casing set in an approximate 2 ft by 2 ft concrete pad. The well was developed by bailing and pumping.

The well was developed by removal of water to clear the well casing and annulus of sediment. Turbid water was removed with a 3-inch diameter bailer. After bailing, well development was completed by pumping at 6 to 7 gallons per minute with a submersible pump. Approximately 385 gallons of water were removed during well development.

The boring log, well construction diagram, and the State Well Report are included in Appendix C. If determined necessary, the well will be professionally surveyed at a later date.

Soil cuttings, drilling fluids and well development water were contained in a lined roll-off mudbox. The drill cuttings/fluids and development water were transported as non-hazardous, exploration and production (E&P) exempt waste to a CEMC-approved disposal facility (i.e., Sundance Services, Inc. near Eunice New Mexico). Waste management documentation is provided in Appendix E.

5.2 Groundwater Sampling

Groundwater gauging was conducted and the vertical conductivity profile was assessed through the water column prior to sampling activities. Equipment was decontaminated prior to gauging or sampling. The water level was measured to the nearest hundredth of a foot and conductivity was measured at 5-ft intervals within the water column. The static water level was measured at a depth of 102.60 feet below the casing rim, which corresponds to approximately 10 feet below the top of the well screen. The results of the conductivity profile are summarized on Table 3.

The well was then sampled using a Hydrasleeve sampler. The groundwater sample was collected after the Hydrasleeve was lowered to the depth of the highest conductivity measurement (i.e., 170 ft below the casing rim). The sampler was removed from the well and the sample was placed in laboratory-supplied containers and chilled on ice in an insulated cooler. The sample was delivered under chain-of-custody documentation to Xenco Laboratories of Midland, Texas for analysis of BTEX by EPA method 8021B, TPH by Method SW8015B and chloride by EPA method 300.1.

5.3 Groundwater Analytical Results

No BTEX or TPH constituents were detected at concentrations above laboratory reporting limits. Chloride was detected at a concentration of 117 milligrams per liter (mg/L) which is below the 250 mg/L standard.

Groundwater analytical results for BTEX, TPH and chloride are summarized in Table 2 in reference to NMWQCC standards. The laboratory analytical report is provided in Appendix D.

6. Conclusions

Analytical results associated with assessment activities conducted in 2011 and 2012 indicated that the horizontal extent of chloride impact in soil had not been fully delineated. Based on recent groundwater sampling results, the vertical extent of chloride concentrations extends to at least 70 ft bgs but does not extend to groundwater which was encountered during drilling at 101 ft bgs. As such, vertical assessment of chloride concentrations appears to have been achieved at the Site.

7. Path Forward

Based on the ground water sampling results obtained from MW-1, the following tasks are recommended by GHD:

- Conduct one additional confirmation groundwater sampling event.

- If no impact to groundwater is confirmed, submit a request to the NMOCD to plug and abandon MW-1.
- Over-excavate the impacted area to a total depth of approximately 4 ft bgs. Excavation activities will be performed without compromising existing surface structures (i.e., existing flow lines, etc.).
- Transport and dispose of excavated soils as non-hazardous, E&P exempt waste to a CEMC-approved disposal facility (i.e., Sundance Services, Inc.).
- Install a 20-mil polyethylene liner in the excavated area and backfill the remaining excavation with clean materials.
- Construction-affected areas of the release site will be graded to match surface contours and seeded using Bureau of Land Management approved seed mixtures.
- Submit a final C-141 form (spill release) to the NMOCD detailing completion of work activities.

Figures

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

Lat/Long: 32.8657° North, 103.3060° West

0 1000 2000ft

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

CEMC
LEA COUNTY, NEW MEXICO
LPU #59

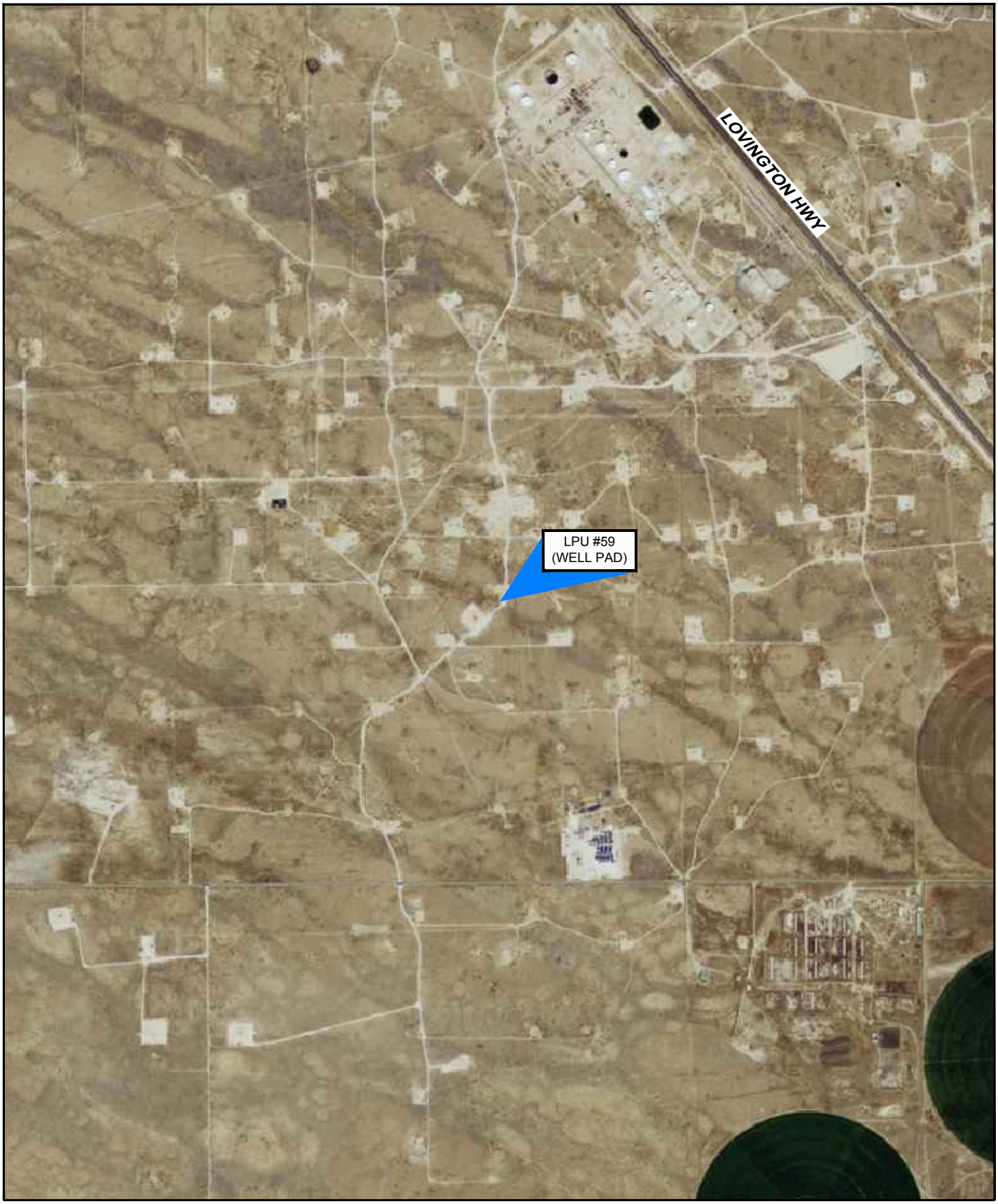
073819-00

Jan 26, 2017

SITE VICINITY MAP

FIGURE 1

CAD File: I:\CAD\Files\07----\073---\073819-CEMC-LPU #59\073819-00\073819-00(004)\073819-00(004)GN-DL001.dwg



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

Lat/Long: 32.8657° North, 103.3060° West

0 500 1500ft

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

CEMC
LEA COUNTY, NEW MEXICO
LPU #59

073819-00

Jan 26, 2017

SITE LOCATION MAP

FIGURE 2

CAD File: I:\CAD\Files\07----\073---\073819-CEMC-LPU #59\073819-00\073819-00(004)\073819-00(004)GN-DL001.dwg

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

Lat/Long: 32.8657° North, 103.3060° West

0 20 40ft

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

CEMC
LEA COUNTY, NEW MEXICO
LPU #59

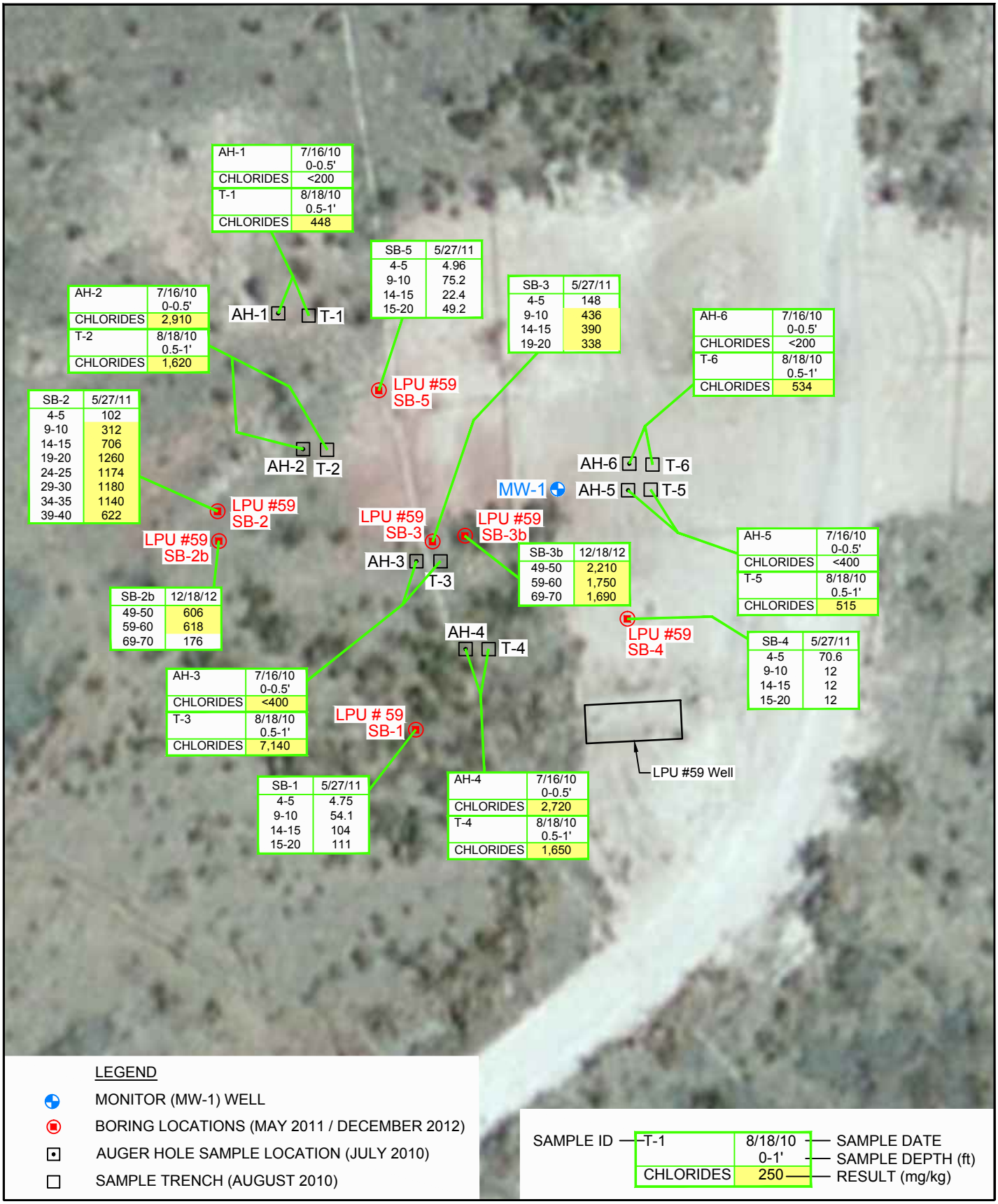
073819-00

Jan 26, 2017

SITE MAP

FIGURE 3

CAD File: I:\CAD\Files\07----\073---\073819-CEMC-LPU #59\073819-00\073819-00(004)\073819-00(004)GN-DL001.dwg



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

Lat/Long: 32.8657° North, 103.3060° West

0 20 40ft

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

CEMC
LEA COUNTY, NEW MEXICO
LPU #59

SOIL BORING LOCATIONS AND CHLORIDE RESULTS MAP

073819-00

Jan 26, 2017

FIGURE 4

CAD File: I:\CAD\Files\07----\073---\073819-CEMC-LPU #59\073819-00\073819-00(004)\073819-00(004)GN-DL001.dwg

Tables

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
LOVINGTON PADDOCK UNIT 59
LEA COUNTY, NEW MEXICO

Sample ID	Depth (feet)	Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	TPH			Chlorides
								DRO	GRO	GRO/DRO	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NMOCD Recommended Remediation Action Levels (Total Ranking Score = 10)			**10**	**---**	**---**	**---**	**50**	**---**	**---**	**1000**	**250**
AH-1	0-0.5	7/6/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	<200
T-1	0.5-1	8/18/10	--	--	--	--	--	--	--	--	448
AH-2	0-0.5	7/6/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	**2,910**
T-2	0.5-1	8/18/10	--	--	--	--	--	--	--	--	**1,620**
AH-3	0-0.5	7/6/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	<400
T-3	0.5-1	8/18/10	--	--	--	--	--	--	--	--	**7,140**
AH-4	0-0.5	7/6/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	**2,720**
T-4	0.5-1	8/18/10	--	--	--	--	--	--	--	--	**1650**
AH-5	0-0.5	7/6/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	<400
T-5	0.5-1	8/18/10	--	--	--	--	--	--	--	--	**515**
AH-6	0-0.5	7/6/10	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<2.00	<50.0	<200
T-6	0.5-1	8/18/10	--	--	--	--	--	--	--	--	**534**
SB-1	4-5	5/26/11	--	--	--	--	--	--	--	--	4.75
	9-10	5/26/11	--	--	--	--	--	--	--	--	54.1
	14-15	5/26/11	--	--	--	--	--	--	--	--	104
	19-20	5/26/11	--	--	--	--	--	--	--	--	111
SB-2	4-5	5/26/11	--	--	--	--	--	--	--	--	102
	9-10	5/26/11	--	--	--	--	--	--	--	--	312
	14-15	5/26/11	--	--	--	--	--	--	--	--	**706**
	19-20	5/26/11	--	--	--	--	--	--	--	--	**1,260**
	24-25	5/26/11	--	--	--	--	--	--	--	--	**1,174**
	29-30	5/26/11	--	--	--	--	--	--	--	--	**1,180**
	34-35	5/26/11	--	--	--	--	--	--	--	--	**1,140**
	39-40	5/26/11	--	--	--	--	--	--	--	--	**622**
SB-2B	49-50	12/18/12	--	--	--	--	--	--	--	--	**606**
	59-60	12/18/12	--	--	--	--	--	--	--	--	**618**
	69-70	12/18/12	--	--	--	--	--	--	--	--	176
SB-3	4-5	5/26/11	--	--	--	--	--	--	--	--	148
	9-10	5/26/11	--	--	--	--	--	--	--	--	436
	14-15	5/26/11	--	--	--	--	--	--	--	--	390
	19-20	5/26/11	--	--	--	--	--	--	--	--	338
SB-3b	49-50	12/18/12	--	--	--	--	--	--	--	--	**2,210**
	59-60	12/18/12	--	--	--	--	--	--	--	--	**1,750**
	69-70	12/18/12	--	--	--	--	--	--	--	--	**1,690**
SB-4	4-5	5/26/11	--	--	--	--	--	--	--	--	70.6
	9-10	5/26/11	--	--	--	--	--	--	--	--	12.0
	14-15	5/26/11	--	--	--	--	--	--	--	--	12.0
	19-20	5/26/11	--	--	--	--	--	--	--	--	12.0
SB-5	4-5	5/26/11	--	--	--	--	--	--	--	--	4.96
	9-10	5/26/11	--	--	--	--	--	--	--	--	75.2
	14-15	5/26/11	--	--	--	--	--	--	--	--	22.4
	19-20	5/26/11	--	--	--	--	--	--	--	--	49.2

Notes:
- Bold concentrations above lab reporting limits.
- Highlighted cells indicated concentrations exceeding regulatory limits
- "--" indicates not analyzed or not applicable
- BTEX analyses by EPA Method 8021B.
- TPH analyzed by EPA Method SW8015B Mod.
- Chlorides analyzed by EPA Method 300.0

TABLE 2

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
LOVINGTON PADDOCK UNIT 59
UNIT F, SECTION 1-T17S-R36E, LEA COUNTY, NEW MEXICO

Well ID	*Date*	*Benzene*	*Toluene*	*Ethylbenzene*	*Total Xylenes*	*TPH GRO*	*TPH DRO*	*Chloride*
NMWQCC Standards		***0.01 mg/L***	***0.75 mg/L***	***0.75 mg/L***	***0.62 mg/L***	***-- mg/L***	***-- mg/L***	***250 mg/L***
MW-1	10/19/16	<0.002	<0.002	<0.002	<0.002	<1.50	<1.50	**117**

NOTES:
NMWQCC - New Mexico Water Quality Control Commission
'mg/L' indicates milligrams per liter
- BTEX analysis by EPA Method 8021B.
- TPH analysis by Method SW8015B.
- Chlorides analyzed by EPA Method 300.1

TABLE 3

Conductivity Profile Results 2016
LOVINGTON PADDOCK UNIT 59
UNIT F, SECTION 1-T17S-R36E, LEA COUNTY, NEW MEXICO

Well: MW-1
Date: 10/19/2016

Depth	Conductivity	Temperature
102.6		
105	743	19.2
110	738	19.1
115	741	19.0
120	776	19.0
125	807	19.0
130	852	19.0
135	846	19.0
140	841	19.0
145	837	19.0
150	835	19.0
155	857	19.0
160	871	19.1
165	885	19.1
170	887	19.1
175	884	19.2
180	883	19.2
185	878	19.2
190	882	19.2
195	878	19.4
200	877	19.5
205	875	19.5
210	873	19.5
215	867	19.5
220	864	19.7
225	863	19.7
230	858	19.9
233.06	806	19.9

NOTES:
Depth - feet below top of casing
Conductivity - microseimens per centimeter
Temperature - degrees Celsius

Appendices

Appendix A
Form C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company Chevron USA Inc.	Contact Wayne Minchew
Address HCR 60 Box 423 Lovington, NM 88260	Telephone No. 505-396-4414
Facility Name Lovington Paddock	Facility Type Injection Well # 59

API# 30025 03826 0000

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	1	17S	36E					LEA

51' Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 40 bbls	Volume Recovered 10 bbls
Source of Release Injection trunk line	Date and Hour of Occurrence 06-04-06 1430	Date and Hour of Discovery 06-04-06 1430
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Pat Capperton	
By Whom? Larry Ridenour	Date and Hour 06-05-06 0820	
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.*

Leak in pipe at valve box, where LPU #59 tees off 3" FG trunkline.

Describe Area Affected and Cleanup Action Taken.*

Along pipeline right of way in pasture.
Replaced nipple with stainless steel nipple.

Received JUN 2006 Hobbs OCD

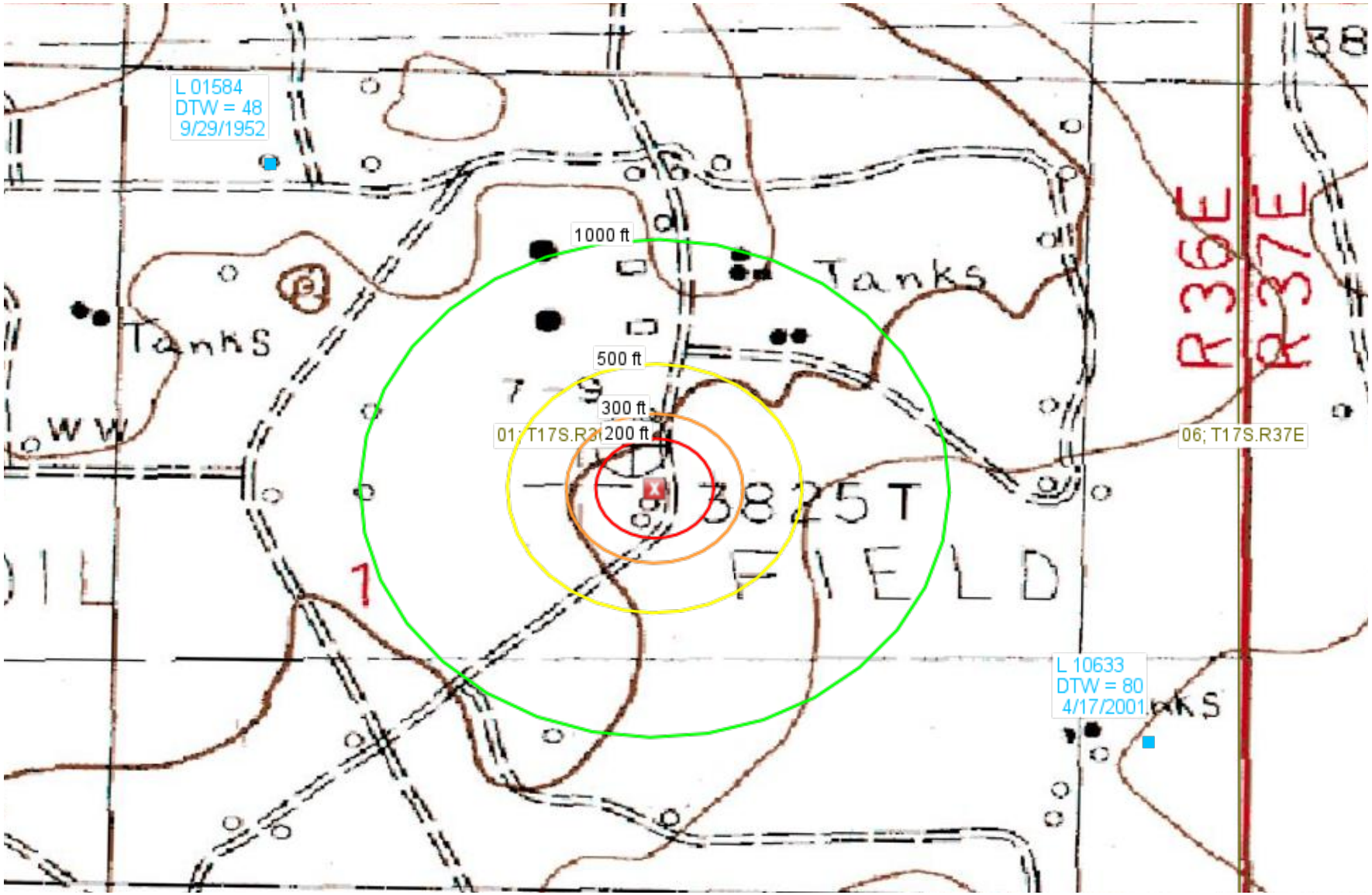
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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: Larry Ridenour	OIL CONSERVATION DIVISION Approved by District Supervisor: Paul Kautz	
Printed Name: Larry Ridenour		
Title: Operations Representative	Approval Date: 6-12-06	Expiration Date: ENVIRONMENTAL ENGINEER
E-mail Address: lridenour@chevron.com	Conditions of Approval: Delineate C-T, TPM, BTEX	Attached ☐
Date: 6/6/06 Phone: 505-396-4414		

* Attach Additional Sheets If Necessary

Incident - nPAC0616540406
Application - pPAC0616540562

Appendix B
Water Well Map



Petroleum Recovery Research Center	LPU #59	Figure:
	Chevron Environmental Managment Company	Jul 12, 2011

Appendix C
MW-1 Boring Log and State Well Report

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Lovington Paddock Unit 59
PROJECT NUMBER: 73819
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: White Drilling Company

HOLE DESIGNATION: MW-1
DATE COMPLETED: 12 October 2016
DRILLING METHOD: Mud Rotary
FIELD PERSONNEL: J. Schnable

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE PP (tsf)
0	LIMESTONE, tan						
4	CALICHE	4.00	Cement (12 bags)				
25	SAND, brown, with caliche fragments - with caliche fragments to to 31 feet - with sandstone to 44 feet - brown and tan to 44 feet	25.00					
45	- brown		4-inch SCH 40 PVC riser Hole Plug Bentonite Chips (20 bags)				
49	SANDSTONE, brown - pink-brown to 55 feet	49.00					
55	SAND, brown, with layers of tan sandstone	55.00					
60	SANDSTONE, brown and tan	60.00					

NOTES: Stratigraphy descriptions are based on drill cuttings.
WATER FOUND ▽ 10/10/16

OVERBURDEN LOG 073819 LPU-59.GPJ CRA_CORP.GDT 10/1/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

PROJECT NAME: Lovington Paddock Unit 59
PROJECT NUMBER: 73819
CLIENT: Chevron Environmental Management Company
LOCATION: Lea County, New Mexico
DRILLING COMPANY: White Drilling Company

HOLE DESIGNATION: MW-1
DATE COMPLETED: 12 October 2016
DRILLING METHOD: Mud Rotary
FIELD PERSONNEL: J. Schnable

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE PP (tsf)
105							
110	SAND, brown, with layers of brown and tan sandsone	110.00					
		112.00					
115	CLAYEY SAND, brown						
	SANSTONE, brown	117.00					
120							
125							
130							
135							
140	SAND, brown, with layers of brown and tan sandsone	140.00					
145	- with clayey sand and sandstone layers to 170 feet						
150							
155							
160			Filter pack 20/40 sieve (71 bags) 4-inch SCH 40 PVC screen 0.010 slot				
165							
170							
175							
180							
185							
190	- with gravel up to 5 mm to 200 feet						
195							

NOTES: Stratigraphy descriptions are based on drill cuttings.
WATER FOUND ▽ 10/10/16

OVERBURDEN LOG 073819 LPU-59.GPJ CRA_CORP.GDT 10/1/17

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

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PROJECT NUMBER: 73819
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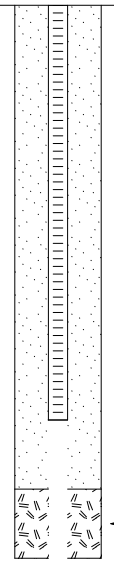
LOCATION: Lea County, New Mexico
DRILLING COMPANY: White Drilling Company

HOLE DESIGNATION: MW-1
DATE COMPLETED: 12 October 2016
DRILLING METHOD: Mud Rotary
FIELD PERSONNEL: J. Schnable

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	Monitoring Well	SAMPLE DEPTH (ft)	SAMPLE INTERVAL	SAMPLE REC (%)	SAMPLE PP (tsf)
205	- with clayey sand to 216 feet						
210							
215	- with gravel						
220	CLAYEY SAND, red-brown, with pea gravel	218.00					
225	GRAVEL, yellow-green, white, brick red; granules and pebbles up to 15 mm diameter, mostly quartzite, very poorly cemented	226.00					
230	SILTY CLAY, gray-brown	230.00					
235							
240	END OF BOREHOLE @ 240.0ft BGS	240.00					
245							
250							
255							
260							
265							
270							
275							
280							
285							
290							
295							



WELL DETAILS
Screened interval:
90.00 to 230.00ft BGS
Length: 140ft
Slot Size: 0.010
Material: PVC
Seal:
10.00 to 85.00ft BGS
Material: Bentonite 3/8-inch chips
Sand Pack:
85.00 to 240.00ft BGS
Material: 20/40 sieve sand

BOREHOLE DIAMETER 7.875

NOTES: Stratigraphy descriptions are based on drill cuttings.
WATER FOUND ▽ 10/10/16

OVERBURDEN LOG 073819 LPU-59.GPJ CRA_CORP.GDT 10/1/17

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER)	OSE FILE NUMBER(S)
MW-1	L-14207
WELL OWNER NAME(S)	PHONE (OPTIONAL)
Chevron Midcontinent LP	
WELL OWNER MAILING ADDRESS	CITY / STATE / ZIP
1400 Smith Street RM 07086	Houston / TX / 77002

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	51	56.81	N
LONGITUDE	103	18	21.40	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

LPU 59

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1456	John W. White	White Drilling Company, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/7/2016	10/12/2016	240.0		100.0

COMPLETED WELL IS: ○ ARTESIAN ○ DRY HOLE ◉ SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT): 100.0

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)
0.0	90.0	7 7/8	Sch. 40 PVC Riser	Threads	4.0	1/4"	
90.0	230.0	7 7/8	Sch. 40 PVC Screen	Threads	4.0	1/4"	.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
235.0	85.0	7 7/8	20/40 Sand	60/Sacks	Handmix
85.0	10.0	7 7/8	Bentonite Chips	20/Sacks	Handmix
10.0	0.0	7 7/8	Cement	12/Sacks	Handmix

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

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)
0.0	.5	.5	Brown clay w/caliche mix	○ Y ◉ N	
.5	4.0	3.5	Tan limestone	○ Y ◉ N	
4.0	25.0	21.0	Caliche	○ Y ◉ N	
25.0	31.0	6.0	Brown sand w/caliche	○ Y ◉ N	
31.0	34.0	3.0	Brown sand w/sandstone	○ Y ◉ N	
34.0	44.0	10.0	Brown and tan sand/sandstone	○ Y ◉ N	
44.0	49.0	5.0	Brown sand	○ Y ◉ N	
49.0	50.0	1.0	Brown sandstone w/layers of brown sand	○ Y ◉ N	
50.0	55.0	5.0	Pinkish brown sandstone "firm"	○ Y ◉ N	
55.0	60.0	5.0	Brown sand w/tan sandstone mixed	○ Y ◉ N	
60.0	110.0	50.0	Brown and tan sandstone	◉ Y ○ N	
110.0	112.0	2.0	Brown sand w/tan and brown sandstone	◉ Y ○ N	
112.0	117.0	5.0	Brown clayey sand	◉ Y ○ N	
117.0	140.0	23.0	Brown sandstone	◉ Y ○ N	
140.0	170.0	30.0	Brown sand/clayey sand w/sandstone steaks	◉ Y ○ N	
170.0	190.0	20.0	Brown sand	◉ Y ○ N	
190.0	200.0	10.0	Brown sand w/small gravel	◉ Y ○ N	
200.0	216.0	16.0	Brown sand/clayey sand	◉ Y ○ N	
216.0	218.0	2.0	Brown sand w/gravel	◉ Y ○ N	
218.0	226.0	8.0	Reddish brown clayey sand w/small gravel	◉ Y ○ N	
226.0	240.0	14.0	Gravel/grayish brown clay/clayey sand	◉ Y ○ N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: ○ PUMP ○ AIR LIFT ○ BAILER ○ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm):

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:

Fill from 235'-240' with soil cuttings

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

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:

SIGNATURE OF DRILLER / PRINT SIGNEE NAME

10·21·16
DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/08/2012)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

Appendix D
Certified Analytical Reports

20-Jun-2011

James Ornelas
Conestoga-Rovers & Associates
2135 S Loop 250 West
Midland, TX 79703

Tel: (412) 686-0086
Fax: (432) 686-0186

Re: Lovington Paddock #59 Work Order: **1106023**

Dear James,

ALS Environmental received 40 samples on 01-Jun-2011 09:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 41.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Patricia L. Lynch

Electronically approved by: Makenzie L. Henderson

Patricia L. Lynch
Project Manager

Certificate No: T104704231-09A-TX

ALS Environmental

Date: 20-Jun-11

Client: Conestoga-Rovers & Associates
Project: Lovington Paddock #59
Work Order: **1106023**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1106023-01	LPU#59 SB-1 4'-5'	Soil		5/26/2011 15:10	6/1/2011 09:00	☐
1106023-02	LBU#59 SB-1 9'-10'	Soil		5/26/2011 15:12	6/1/2011 09:00	☐
1106023-03	LPU#59 SB-1 14'-15'	Soil		5/26/2011 15:14	6/1/2011 09:00	☐
1106023-04	LPU#59 SB-1 19'-20'	Soil		5/26/2011 15:16	6/1/2011 09:00	☐
1106023-05	LPU#59 SB-1 24'-25'	Soil		5/26/2011 15:18	6/1/2011 09:00	☐
1106023-06	LPU#59 SB-1 29'-30'	Soil		5/26/2011 15:20	6/1/2011 09:00	☐
1106023-07	LPU#59 SB-1 34'-35'	Soil		5/26/2011 15:22	6/1/2011 09:00	☐
1106023-08	LPU#59 SB-1 39'-40'	Soil		5/26/2011 15:24	6/1/2011 09:00	☐
1106023-09	LPU#59 SB-2 4'-5'	Soil		5/26/2011 15:34	6/1/2011 09:00	☐
1106023-10	LPU#59 SB-2 9'-10'	Soil		5/26/2011 15:36	6/1/2011 09:00	☐
1106023-11	LPU#59 SB-2 14'-15'	Soil		5/26/2011 15:38	6/1/2011 09:00	☐
1106023-12	LPU#59 SB-2 19'-20'	Soil		5/26/2011 15:40	6/1/2011 09:00	☐
1106023-13	LPU#59 SB-2 24'-25'	Soil		5/26/2011 15:42	6/1/2011 09:00	☐
1106023-14	LPU#59 SB-2 29'-30'	Soil		5/26/2011 15:44	6/1/2011 09:00	☐
1106023-15	LPU#59 SB-2 34'-35'	Soil		5/26/2011 15:46	6/1/2011 09:00	☐
1106023-16	LPU#59 SB-2 39'-40'	Soil		5/26/2011 15:48	6/1/2011 09:00	☐
1106023-17	LPU#59 SB-3 4'-5'	Soil		5/26/2011 16:00	6/1/2011 09:00	☐
1106023-18	LPU#59 SB-3 9'-10'	Soil		5/26/2011 16:02	6/1/2011 09:00	☐
1106023-19	LPU#59 SB-3 14'-15'	Soil		5/26/2011 16:04	6/1/2011 09:00	☐
1106023-20	LPU#59 SB-3 19'-20'	Soil		5/26/2011 16:06	6/1/2011 09:00	☐
1106023-21	LPU#59 SB-3 24'-25'	Soil		5/26/2011 16:08	6/1/2011 09:00	☐
1106023-22	LPU#59 SB-3 29'-30'	Soil		5/26/2011 16:10	6/1/2011 09:00	☐
1106023-23	LPU#59 SB-3 34'-35'	Soil		5/26/2011 16:12	6/1/2011 09:00	☐
1106023-24	LPU#59 SB-3 39'-40'	Soil		5/26/2011 16:14	6/1/2011 09:00	☐
1106023-25	LPU#59 SB-4 4'-5'	Soil		5/26/2011 16:50	6/1/2011 09:00	☐
1106023-26	LPU#59 SB-4 9'-10'	Soil		5/26/2011 16:52	6/1/2011 09:00	☐
1106023-27	LPU#59 SB-4 14'-15'	Soil		5/26/2011 16:54	6/1/2011 09:00	☐
1106023-28	LPU#59 SB-4 19'-20'	Soil		5/26/2011 16:56	6/1/2011 09:00	☐
1106023-29	LPU#59 SB-4 24'-25'	Soil		5/26/2011 16:58	6/1/2011 09:00	☐
1106023-30	LPU#59 SB-4 29'-30'	Soil		5/26/2011 17:00	6/1/2011 09:00	☐
1106023-31	LPU#59 SB-4 34'-35'	Soil		5/26/2011 17:02	6/1/2011 09:00	☐
1106023-32	LPU#59 SB-4 39'-40'	Soil		5/26/2011 17:04	6/1/2011 09:00	☐
1106023-33	LPU#59 SB-5 4'-5'	Soil		5/26/2011 17:20	6/1/2011 09:00	☐
1106023-34	LPU#59 SB-5 9'-10'	Soil		5/26/2011 17:22	6/1/2011 09:00	☐
1106023-35	LPU#59 SB-5 14'-15'	Soil		5/26/2011 17:24	6/1/2011 09:00	☐
1106023-36	LPU#59 SB-5 19'-20'	Soil		5/26/2011 17:26	6/1/2011 09:00	☐
1106023-37	LPU#59 SB-5 24'-25'	Soil		5/26/2011 17:28	6/1/2011 09:00	☐
1106023-38	LPU#59 SB-5 29'-30'	Soil		5/26/2011 17:30	6/1/2011 09:00	☐
1106023-39	LPU#59 SB-5 34'-35'	Soil		5/26/2011 17:32	6/1/2011 09:00	☐

Client: Conestoga-Rovers & Associates
Project: Lovington Paddock #59
Work Order: **1106023**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1106023-40	LPU#59 SB-5 39'-40'	Soil		5/26/2011 17:34	6/1/2011 09:00	☐

Client:	Conestoga-Rovers & Associates
Project:	Lovington Paddock #59
Work Order:	1106023

Case Narrative

Batch 53269 Chloride: MS/MSD is for an unrelated sample.

All samples on hold for SB-2 were assigned per James Ornelas of CRA.

ALS Environmental

Date: *20-Jun-11*

Client: Conestoga-Rovers & Associates

Project: Lovington Paddock #59 **Work Order:** 1106023

Sample ID: LPU#59 SB-1 4'-5' **Lab ID:** 1106023-01

Collection Date: 5/26/2011 03:10 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**4.75**	J	**4.92**	**mg/Kg**	1	6/7/2011 10:54 PM
Surr: Selenate (surr)	*90.4*		*85-115*	*%REC*	1	6/7/2011 10:54 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**5.64**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LBU#59 SB-1 9'-10'	**Lab ID:**	1106023-02
Collection Date:	5/26/2011 03:12 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**54.1**		**5.00**	**mg/Kg**	1	6/8/2011 11:12 AM
Surr: Selenate (surr)	*91.9*		*85-115*	*%REC*	1	6/8/2011 11:12 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**7.75**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-1 14'-15'	**Lab ID:**	1106023-03
Collection Date:	5/26/2011 03:14 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**104**		**4.94**	**mg/Kg**	1	6/7/2011 11:52 PM
Surr: Selenate (surr)	*92.8*		*85-115*	*%REC*	1	6/7/2011 11:52 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**7.53**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-1 19'-20'	**Lab ID:**	1106023-04
Collection Date:	5/26/2011 03:16 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**111**		**4.99**	**mg/Kg**	1	6/8/2011 12:07 AM
Surr: Selenate (surr)	*88.9*		*85-115*	*%REC*	1	6/8/2011 12:07 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**7.28**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 4'-5'	**Lab ID:**	1106023-09
Collection Date:	5/26/2011 03:34 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**102**		**4.95**	**mg/Kg**	1	6/8/2011 12:21 AM
Surr: Selenate (surr)	*91.6*		*85-115*	*%REC*	1	6/8/2011 12:21 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.06**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 9'-10'	**Lab ID:**	1106023-10
Collection Date:	5/26/2011 03:36 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**312**		**4.97**	**mg/Kg**	1	6/8/2011 01:05 AM
Surr: Selenate (surr)	*89.5*		*85-115*	*%REC*	1	6/8/2011 01:05 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**7.22**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 14'-15'	**Lab ID:**	1106023-11
Collection Date:	5/26/2011 03:38 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**706**		**4.96**	**mg/Kg**	1	6/8/2011 01:20 AM
Surr: Selenate (surr)	*92.1*		*85-115*	*%REC*	1	6/8/2011 01:20 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.86**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 19'-20'	**Lab ID:**	1106023-12
Collection Date:	5/26/2011 03:40 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**1,260**		**24.9**	**mg/Kg**	5	6/8/2011 12:14 PM
Surr: Selenate (surr)	*97.3*		*85-115*	*%REC*	5	6/8/2011 12:14 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.92**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 24'-25'	**Lab ID:**	1106023-13
Collection Date:	5/26/2011 03:42 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/16/2011**	Analyst: **TDW**
Chloride	**1,170**		**24.7**	**mg/Kg**	5	6/17/2011 11:28 AM
Surr: Selenate (surr)	*102*		*85-115*	*%REC*	5	6/17/2011 11:28 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.05**		**0.0100**	**wt%**	1	6/16/2011 10:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 29'-30'	**Lab ID:**	1106023-14
Collection Date:	5/26/2011 03:44 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/16/2011**	Analyst: **TDW**
Chloride	**1,180**		**24.9**	**mg/Kg**	5	6/17/2011 11:50 AM
Surr: Selenate (surr)	*103*		*85-115*	*%REC*	5	6/17/2011 11:50 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**7.04**		**0.0100**	**wt%**	1	6/16/2011 10:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 34'-35'	**Lab ID:**	1106023-15
Collection Date:	5/26/2011 03:46 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/16/2011**	Analyst: **TDW**
Chloride	**1,140**		**24.8**	**mg/Kg**	5	6/17/2011 12:11 PM
Surr: Selenate (surr)	*103*		*85-115*	*%REC*	5	6/17/2011 12:11 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.74**		**0.0100**	**wt%**	1	6/16/2011 10:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-2 39'-40'	**Lab ID:**	1106023-16
Collection Date:	5/26/2011 03:48 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/16/2011**	Analyst: **TDW**
Chloride	**622**		**4.98**	**mg/Kg**	1	6/16/2011 07:55 PM
Surr: Selenate (surr)	*104*		*85-115*	*%REC*	1	6/16/2011 07:55 PM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**3.92**		**0.0100**	**wt%**	1	6/16/2011 10:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-3 4'-5'	**Lab ID:**	1106023-17
Collection Date:	5/26/2011 04:00 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**148**		**4.94**	**mg/Kg**	1	6/8/2011 01:49 AM
Surr: Selenate (surr)	*93.1*		*85-115*	*%REC*	1	6/8/2011 01:49 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**2.52**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-3 9'-10'	**Lab ID:**	1106023-18
Collection Date:	5/26/2011 04:02 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**436**		**4.98**	**mg/Kg**	1	6/8/2011 02:03 AM
Surr: Selenate (surr)	*91.7*		*85-115*	*%REC*	1	6/8/2011 02:03 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.73**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-3 14'-15'	**Lab ID:**	1106023-19
Collection Date:	5/26/2011 04:04 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**390**		**4.95**	**mg/Kg**	1	6/8/2011 11:45 AM
Surr: Selenate (surr)	*89.8*		*85-115*	*%REC*	1	6/8/2011 11:45 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**6.11**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-3 19'-20'	**Lab ID:**	1106023-20
Collection Date:	5/26/2011 04:06 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**338**		**4.99**	**mg/Kg**	1	6/8/2011 02:32 AM
Surr: Selenate (surr)	*94.0*		*85-115*	*%REC*	1	6/8/2011 02:32 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**6.86**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-4 4'-5'	**Lab ID:**	1106023-25
Collection Date:	5/26/2011 04:50 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**70.6**		**4.90**	**mg/Kg**	1	6/8/2011 02:47 AM
Surr: Selenate (surr)	*93.8*		*85-115*	*%REC*	1	6/8/2011 02:47 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.85**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-4 9'-10'	**Lab ID:**	1106023-26
Collection Date:	5/26/2011 04:52 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**12.0**		**4.99**	**mg/Kg**	1	6/8/2011 03:02 AM
Surr: Selenate (surr)	*92.6*		*85-115*	*%REC*	1	6/8/2011 03:02 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**6.07**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-4 14'-15'	**Lab ID:**	1106023-27
Collection Date:	5/26/2011 04:54 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**12.0**		**4.93**	**mg/Kg**	1	6/8/2011 03:16 AM
Surr: Selenate (surr)	*90.6*		*85-115*	*%REC*	1	6/8/2011 03:16 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.88**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-4 19'-20'	**Lab ID:**	1106023-28
Collection Date:	5/26/2011 04:56 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**12.0**		**4.94**	**mg/Kg**	1	6/8/2011 04:00 AM
Surr: Selenate (surr)	*90.7*		*85-115*	*%REC*	1	6/8/2011 04:00 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.98**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-5 4'-5'	**Lab ID:**	1106023-33
Collection Date:	5/26/2011 05:20 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**4.96**		**4.91**	**mg/Kg**	1	6/8/2011 04:14 AM
Surr: Selenate (surr)	*87.8*		*85-115*	*%REC*	1	6/8/2011 04:14 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**3.05**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-5 9'-10'	**Lab ID:**	1106023-34
Collection Date:	5/26/2011 05:22 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**75.2**		**4.98**	**mg/Kg**	1	6/8/2011 04:29 AM
Surr: Selenate (surr)	*89.6*		*85-115*	*%REC*	1	6/8/2011 04:29 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**7.33**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-5 14'-15'	**Lab ID:**	1106023-35
Collection Date:	5/26/2011 05:24 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**22.4**		**4.99**	**mg/Kg**	1	6/8/2011 04:43 AM
Surr: Selenate (surr)	*92.9*		*85-115*	*%REC*	1	6/8/2011 04:43 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**6.93**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *20-Jun-11*

Client:	Conestoga-Rovers & Associates		
Project:	Lovington Paddock #59	**Work Order:**	1106023
Sample ID:	LPU#59 SB-5 19'-20'	**Lab ID:**	1106023-36
Collection Date:	5/26/2011 05:26 PM	**Matrix:**	SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ANIONS - EPA 300.0 (1993)			**E300**		Prep Date: **6/7/2011**	Analyst: **TDW**
Chloride	**49.2**		**4.99**	**mg/Kg**	1	6/8/2011 04:58 AM
Surr: Selenate (surr)	*92.3*		*85-115*	*%REC*	1	6/8/2011 04:58 AM
MOISTURE			**SW3550**			Analyst: **KAH**
Percent Moisture	**4.65**		**0.0100**	**wt%**	1	6/2/2011 11:30 AM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

QC BATCH REPORT

Batch ID: **52990** Instrument ID **ICS2100** Method: **E300**

MBLK Sample ID: **WBLKS3-060711-52990** Units: **mg/Kg** Analysis Date: **6/7/2011 10:11 PM**

Client ID: Run ID: **ICS2100_110607B** SeqNo: **2416269** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0								
Surr: Selenate (surr)	*49.01*	1.0	*50*	0	*98*	*85-115*	0			

LCS Sample ID: **WLCSS3-060711-52990** Units: **mg/Kg** Analysis Date: **6/7/2011 10:25 PM**

Client ID: Run ID: **ICS2100_110607B** SeqNo: **2416270** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	200.1	5.0	200	0	100	90-110	0			
Surr: Selenate (surr)	*48.79*	1.0	*50*	0	*97.6*	*85-115*	0			

LCSD Sample ID: **WLCSDS3-060711-52990** Units: **mg/Kg** Analysis Date: **6/7/2011 10:40 PM**

Client ID: Run ID: **ICS2100_110607B** SeqNo: **2416271** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	207.7	5.0	200	0	104	90-110	200.1	3.72	20	
Surr: Selenate (surr)	*46.98*	1.0	*50*	0	*94*	*85-115*	48.79	*3.78*	*20*	

MS Sample ID: **1106023-01AMS** Units: **mg/Kg** Analysis Date: **6/7/2011 11:09 PM**

Client ID: **LPU#59 SB-1 4'-5'** Run ID: **ICS2100_110607B** SeqNo: **2416273** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	94.91	4.9	98.43	4.754	91.6	75-125	0			
Surr: Selenate (surr)	*43.06*	0.98	*49.21*	0	*87.5*	*80-120*	0			

MS Sample ID: **1106023-36AMS** Units: **mg/Kg** Analysis Date: **6/8/2011 05:12 AM**

Client ID: **LPU#59 SB-5 19'-20'** Run ID: **ICS2100_110607B** SeqNo: **2416298** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	142.3	5.0	99.8	49.22	93.2	75-125	0			
Surr: Selenate (surr)	*43.22*	1.0	*49.9*	0	*86.6*	*80-120*	0			

MSD Sample ID: **1106023-01AMSD** Units: **mg/Kg** Analysis Date: **6/7/2011 11:23 PM**

Client ID: **LPU#59 SB-1 4'-5'** Run ID: **ICS2100_110607B** SeqNo: **2416274** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	107.6	4.9	98.43	4.754	104	75-125	94.91	12.5	20	
Surr: Selenate (surr)	*41.95*	0.98	*49.21*	0	*85.2*	*80-120*	43.06	*2.62*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1106023
Project: Lovington Paddock #59

QC BATCH REPORT

Batch ID: **52990** Instrument ID **ICS2100** Method: **E300**

MSD Sample ID: **1106023-36AMSD** Units: **mg/Kg** Analysis Date: **6/8/2011 05:27 AM**

Client ID: **LPU#59 SB-5 19'-20'** Run ID: **ICS2100_110607B** SeqNo: **2416299** Prep Date: **6/7/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	165.5	5.0	99.8	49.22	116	75-125	142.3	15.1	20	
Surr: Selenate (surr)	*43.57*	1.0	*49.9*	0	*87.3*	*80-120*	43.22	*0.805*	*20*	

The following samples were analyzed in this batch:

1106023-01A	1106023-02A	1106023-03A
1106023-04A	1106023-09A	1106023-10A
1106023-11A	1106023-12A	1106023-17A
1106023-18A	1106023-19A	1106023-20A
1106023-25A	1106023-26A	1106023-27A
1106023-28A	1106023-33A	1106023-34A
1106023-35A	1106023-36A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1106023
Project: Lovington Paddock #59

QC BATCH REPORT

Batch ID: **53269** Instrument ID **ICS3K2** Method: **E300**

MBLK Sample ID: **WBLKS2-061611-53269** Units: **mg/Kg** Analysis Date: **6/16/2011 05:01 PM**
Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427284** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0								
Surr: Selenate (surr)	*49.87*	1.0	*50*	0	*99.7*	*85-115*	0			

LCS Sample ID: **WLCSS2-061611-53269** Units: **mg/Kg** Analysis Date: **6/16/2011 05:23 PM**
Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427285** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	208.8	5.0	200	0	104	90-110	0			
Surr: Selenate (surr)	*56.64*	1.0	*50*	0	*113*	*85-115*	0			

LCSD Sample ID: **WLCSDS2-061611-53269** Units: **mg/Kg** Analysis Date: **6/16/2011 05:45 PM**
Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427288** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	208.8	5.0	200	0	104	90-110	208.8	0.0287	20	
Surr: Selenate (surr)	*57.01*	1.0	*50*	0	*114*	*85-115*	56.64	*0.651*	*20*	

MS Sample ID: **1106026-39AMS** Units: **mg/Kg** Analysis Date: **6/16/2011 11:32 PM**
Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427328** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1888	5.0	99.21	1819	69.5	75-125	0			SEO
Surr: Selenate (surr)	*55.38*	0.99	*49.6*	0	*112*	*80-120*	0			

MS Sample ID: **1106026-40AMS** Units: **mg/Kg** Analysis Date: **6/17/2011 12:37 AM**
Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427332** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1572	4.9	98.23	1500	73.8	75-125	0			SEO
Surr: Selenate (surr)	*53.13*	0.98	*49.12*	0	*108*	*80-120*	0			

MSD Sample ID: **1106026-39AMSD** Units: **mg/Kg** Analysis Date: **6/16/2011 11:54 PM**
Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427329** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1887	5.0	99.21	1819	68.4	75-125	1888	0.0615	20	SEO
Surr: Selenate (surr)	*55.12*	0.99	*49.6*	0	*111*	*80-120*	55.38	*0.467*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1106023
Project: Lovington Paddock #59

QC BATCH REPORT

Batch ID: **53269** Instrument ID **ICS3K2** Method: **E300**

MSD Sample ID: **1106026-40AMSD** Units: **mg/Kg** Analysis Date: **6/17/2011 01:42 AM**

Client ID: Run ID: **ICS3K2_110616A** SeqNo: **2427336** Prep Date: **6/16/2011** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	1572	4.9	98.23	1500	73.9	75-125	1572	0.00562	20	SEO
Surr: Selenate (surr)	*53.21*	0.98	*49.12*	0	*108*	*80-120*	53.13	*0.148*	*20*	

The following samples were analyzed in this batch: 1106023-13A 1106023-14A 1106023-15A 1106023-16A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1106023
Project: Lovington Paddock #59

QC BATCH REPORT

Batch ID: **R110811** Instrument ID **Balance1** Method: **SW3550**

DUP Sample ID: **1106023-36ADUP** Units: **wt%** Analysis Date: **6/2/2011 11:30 AM**

Client ID: **LPU#59 SB-5 19'-20'** Run ID: **BALANCE1_110602E** SeqNo: **2410894** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	4.753	0.010	0	0	0	0-0	4.649	2.2	20	

The following samples were analyzed in this batch:

1106023-01A	1106023-02A	1106023-03A
1106023-04A	1106023-09A	1106023-10A
1106023-11A	1106023-12A	1106023-17A
1106023-18A	1106023-19A	1106023-20A
1106023-25A	1106023-26A	1106023-27A
1106023-28A	1106023-33A	1106023-34A
1106023-35A	1106023-36A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1106023
Project: Lovington Paddock #59

QC BATCH REPORT

Batch ID: **R111505** Instrument ID **Balance1** Method: **SW3550**

DUP Sample ID: **1106473-07ADUP** Units: **wt%** Analysis Date: **6/16/2011 10:30 AM**

Client ID: Run ID: **BALANCE1_110616B** SeqNo: **2426049** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture	18.7	0.010	0	0	0	0-0	19.22	2.73	20	

The following samples were analyzed in this batch:

1106023-13A 1106023-14A 1106023-15A
1106023-16A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental

Date: 20-Jun-11

Client: Conestoga-Rovers & Associates
Project: Lovington Paddock #59
WorkOrder: **1106023**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
mg/Kg	Milligrams per Kilogram
wt%	

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Chain of Custody Form

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COC ID: 33508

1106023

CRA-MID: Conestoga-Rovers & Associates

Project: Lovington Paddock #59

ALS Project Manager:

Customer Information		Project Information			
Purchase Order		Project Name	Lovington Paddock #59	A	Anions (300) Cl
Work Order		Project Number	073817	B	Moisture
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	
Send Report To	James Ornelas	Invoice Attn	James Ornelas	D	
Address	6320 Rothway Ste. 100	Address	6320 Rothway, Suite 100	E	
				F	
City/State/Zip	Houston, TX 77040	City/State/Zip	Houston, TX 77040	G	
Phone	(713) 734-3090	Phone	(713) 734-3090	H	
Fax	(713) 264-6130	Fax	(713) 734-3391	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description			Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	LPU#59	SB-1	4'-5'	5/26/11	1510				X	X									
2	LPU#59	SB-1	9'-10'	" "	1512				X	X									
3	LPU#59	SB-1	14'-15'	" "	1514				X	X									
4	LPU#59	SB-1	19'-20'	" "	1516				X	X									
5	LPU#59	SB-1	24'-25'	" "	1518						HOLD								X
6	LPU#59	SB-1	29'-30'	" "	1520						HOLD								X
7	LPU#59	SB-1	34'-35'	" "	1522						HOLD								X
8	LPU#59	SB-1	39'-40'	" "	1524						HOLD								X
9	LPU#59	SB-2	4'-5'	" "	1534				X	X									
10	LPU#59	SB-2	9'-10'	" "	1536				X	X									

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box)
☑ Std 10 WK Days ☐ 5 WK Days ☐ 3 WK Days ☐ 24 Hour ☐ Other ____

Results Due Date:

Relinquished by:	Date: 5/31/11	Time: 1600	Received by:	Notes: 10 Day TAT.
Relinquished by:	Date:	Time:	Received by (Laboratory):	6/1/11 0900
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.
	-

QC Package: (Check One Box Below)
☑ Level I Std QC ☐ TRRP CheckList
☐ Level II Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
3. The Chain of Custody is a legal document. All information must be completed accurately.

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COC ID: 33507

☐ ALS Environmental
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1106025

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Lovington Paddock #59	A	Anions (300) Cl
Work Order		Project Number	073817	B	Moisture
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	
Send Report To	James Ornelas	Invoice Attn	James Ornelas	D	
Address	3320 Rothway Ste. 100	Address	6320 Rothway, Suite 100	E	
				F	
City/State/Zip	Houston, TX 77040	City/State/Zip	Houston, TX 77040	G	
Phone	(713) 734-3090	Phone	(713) 734-3090	H	
Fax	(713) 264-6138	Fax	(713) 734-3391	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	LPU #59 SB-2 14'-15'	5/20/11	1538				X	X									
2	LPU #59 SB-2 19'-20'	" "	1546				X	X									
3	LPU #59 SB-2 24'-25'	" "	1542					Please HOLD									X
4	LPU #59 SB-2 29'-30'	" "	1544						HOLD								X
5	LPU #59 SB-2 34'-35'	" "	1546						HOLD								X
6	LPU #59 SB-2 39'-40'	" "	1548						HOLD								X
7	LPU #59 SB-3 4'-5'	" "	1600				X	X									
8	LPU #59 SB-3 9'-10'	" "	1602				X	X									
9	LPU #59 SB-3 14'-15'	" "	1604				X	X									
10	LPU #59 SB-3 19'-20'	" "	1606				X	X									

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box)
☑ Std 10 WK Days ☐ 5 WK Days ☐ 3 WK Days ☐ 24 Hour ☐ Other ____

Results Due Date:

Relinquished by:	Date: 5/21/11	Time: 1600	Received by:	Notes: 10 Day TAT.
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/1/11 0900	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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COC ID: 33506

☐ ALS Environmental
3352 128th Ave.
Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1106523

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Lovington Paddock #59	A	Anions (300) Cl
Work Order		Project Number	073817	B	Moisture
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	
Send Report To	James Ornelas	Invoice Attn	James Ornelas	D	
Address	6320 Rothway Ste. 100	Address	6320 Rothway, Suite 100	E	
				F	
City/State/Zip	Houston, TX 77040	City/State/Zip	Houston, TX 77040	G	
Phone	(713) 734-3090	Phone	(713) 734-3090	H	
Fax	(713) 264-6138	Fax	(713) 734-3391	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description			Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	LPU#59	SB-3	24'-25'	5/26/11	1608					HOLD									X
2	LPU#59	SB-3	29'-30'	" "	1610					HOLD									X
3	LPU#59	SB-3	34'-35'	" "	1612					HOLD									X
4	LPU#59	SB-3	39'-40'	" "	1614					HOLD									X
5	LPU #59	SB-4	4'-5'	" "	1650				X	X									
6	LPU #59	SB-4	9'-10'	" "	1652				X	X									
7	LPU #59	SB-4	14'-15'	" "	1654				X	X									
8	LPU #59	SB-4	19'-20'	" "	1656				X	X									
9	LPU #59	SB-4	24'-25'	" "	1658					HOLD									X
10	LPU #59	SB-4	29-30'	" "	1700					HOLD									X

Sampler(s) Please Print & Sign

Shipment Method

Required Turnaround Time: (Check Box)
☑ Std 10 WK Days ☐ 5 WK Days ☐ Other ____ ☐ 2 WK Days ☐ 24 Hour

Results Due Date:

	Date:	Time:	
Relinquished by:	5/31/11	1600	Received by:
Relinquished by:	Date:	Time:	Received by (Laboratory): 6/1/11 0900
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):

Notes: 10 Day TAT.

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP Checklist
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

ote: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
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COC ID: 33505

☐ ALS Environmental
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Holland, MI 49424-9263
Tel: +1 616 399 6070
Fax: +1 616 399 6185

ALS Project Manager: | ALS Work Order #: 1106053

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	Lovington Paddock #59	A	Anions (300) Cl
Work Order		Project Number	073817	B	Moisture
Company Name	Conestoga-Rovers & Associates	Bill To Company	Conestoga-Rovers & Associates	C	
Send Report To	James Ornelas	Invoice Attn	James Ornelas	D	
Address	6320 Rothway Ste. 100	Address	6320 Rothway, Suite 100	E	
				F	
City/State/Zip	Houston, TX 77040	City/State/Zip	Houston, TX 77040	G	
Phone	(713) 734-3090	Phone	(713) 734-3090	H	
Fax	(713) 264-6138	Fax	(713) 734-3391	I	
e-Mail Address		e-Mail Address		J	

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	LPU #59 SB-4 34'-35'	5/26/11	1702				X	X	HOLD								X
2	LPU #59 SB-4 39'-40'	5/26/11	1704				X	X	HOLD								X
3	LPU #59 SB-5 4'-5'	" "	1720				X	X									
4	LPU #59 SB-5 9'-10'	" "	1722				X	X									
5	LPU #59 SB-5 14'-15'	" "	1724				X	X									
6	LPU #59 SB-5 19'-20'	" "	1726				X	X									
7	LPU #59 SB-5 24'-25'	" "	1728					HOLD									X
8	LPU #59 SB-5 29'-30'	" "	1730					HOLD									X
9	LPU #59 SB-5 34'-35'	" "	1732					HOLD									X
10	LPU #59 SB-5 39'-40'	" "	1734					HOLD									X

Sampler(s) Please Print & Sign: [signature]

Shipment Method:

Required Turnaround Time: (Check Box) ☑ Std 10 WK Days ☐ 5 WK Days ☐ 2 WK Days ☐ 24 Hour ☐ Other ____

Results Due Date:

Relinquished by: [signature]	Date: 5/31/11	Time: 1600	Received by:	Notes: 10 Day TAT.
Relinquished by:	Date:	Time:	Received by (Laboratory): [signature] 6/1/11 0900	
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

Cooler ID	Cooler Temp.

QC Package: (Check One Box Below)
☑ Level II Std QC ☐ TRRP CheckList
☐ Level III Std QC/Raw Data ☐ TRRP Level IV
☐ Level IV SW846/CLP
☐ Other / EDD ____

Preservative Key: 1-HCl 2-HNO_3 3-H_2SO_4 4-NaOH 5-$Na_2S_2O_3$ 6-$NaHSO_4$ 7-Other 8-4°C 9-5035

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ALS Environmental

Sample Receipt Checklist

Client Name: **CRA-MID** Date/Time Received: **01-Jun-11 09:00**

Work Order: **1106023** Received by: **RDH**

Checklist completed by Raymond N Gamboa (eSignature) 01-Jun-11 (Date) Reviewed by: Patricia L. Lynch (eSignature) 02-Jun-11 (Date)

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.6c, 3.1c	002	
Cooler(s)/Kit(s):	3414, 7074		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

This portion can be removed for Recipient's records.

Date 5/31/11 FedEx Tracking Number 874196691552

1106023

Sender's Name James Ornelas Phone

Company CRA

Address 2135 S Loop 250 West Dept/Floor/Suite/Room

City Midland State TX ZIP 79703

Your Internal Billing Reference

ALS Environmental
10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Date:
Name:
Company:

CUSTODY SEAL 3414
Time:
JO

Seal Broken By: RNP
Date: 6/1/11

PRIORITY OVERNIGHT WED

Emp# 790085 00:44 01JUN11

Deliver By: 01JUN11

TRK# 7955 3855 7709 FORM 0681

IAH

77099 -TX-US

43 SGRA

ALS Environmental
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Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

CUSTODY SEAL 1574
Date:
Time:
Name:
Company:
JO

Seal Broken By: RNP
Date: 6/1/11

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

January 06, 2013

Project: LPU #59

Submittal Date: 12/20/2012
Group Number: 1358064
PO Number: 4052429
Release Number: LEA COUNTY, NM
State of Sample Origin: NM

Client Sample Description	Lancaster Labs (LLI) #
SB-2b-50' Grab Soil	6903401
SB-2b-60' Grab Soil	6903402
SB-2b-70' Grab Soil	6903403
SB-3b-50' Grab Soil	6903404
SB-3b-60' Grab Soil	6903405
SB-3b-70' Grab Soil	6903406

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO Conestoga-Rovers & Associates Attn: Chris Knight

Respectfully Submitted,

Wendy A. Kozma
Principal Specialist Group Leader

(717) 556-7257

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Analysis Report

Sample Description: SB-2b-50' Grab Soil
LPU #59

LLI Sample # SW 6903401
LLI Group # 1358064
Account # 11713

Project Name: LPU #59

Collected: 12/18/2012 10:09 by JL

Submitted: 12/20/2012 10:55
Reported: 01/06/2013 09:36

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/kg**	**mg/kg**	
07333	Chloride by IC (solid)	16887-00-6	606	207	20
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	4.5	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07333	Chloride by IC (solid)	EPA 300.0	1	12361361201B	12/29/2012 01:51	Christopher D Meeks	20
01352	Deionized Water Extraction	EPA 300.0	1	12361361201B	12/26/2012 07:05	Nancy J Shoop	1
00111	Moisture	SM20 2540 G	1	12356820006B	12/21/2012 22:39	Scott W Freisher	1

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Analysis Report

Sample Description: SB-2b-60' Grab Soil
LPU #59

LLI Sample # SW 6903402
LLI Group # 1358064
Account # 11713

Project Name: LPU #59

Collected: 12/18/2012 10:15 by JL

Submitted: 12/20/2012 10:55
Reported: 01/06/2013 09:36

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/kg**	**mg/kg**	
07333	Chloride by IC (solid)	16887-00-6	618	209	20
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	4.9	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07333	Chloride by IC (solid)	EPA 300.0	1	12361361201B	12/29/2012 02:07	Christopher D Meeks	20
01352	Deionized Water Extraction	EPA 300.0	1	12361361201B	12/26/2012 07:05	Nancy J Shoop	1
00111	Moisture	SM20 2540 G	1	12356820006B	12/21/2012 22:39	Scott W Freisher	1

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Analysis Report

Sample Description: SB-2b-70' Grab Soil
LPU #59

LLI Sample # SW 6903403
LLI Group # 1358064
Account # 11713

Project Name: LPU #59

Collected: 12/18/2012 10:24 by JL

Submitted: 12/20/2012 10:55
Reported: 01/06/2013 09:36

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/kg**	**mg/kg**	
07333	Chloride by IC (solid)	16887-00-6	176	104	10
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	5.2	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07333	Chloride by IC (solid)	EPA 300.0	1	12361361201B	12/29/2012 02:22	Christopher D Meeks	10
01352	Deionized Water Extraction	EPA 300.0	1	12361361201B	12/26/2012 07:05	Nancy J Shoop	1
00111	Moisture	SM20 2540 G	1	12356820006B	12/21/2012 22:39	Scott W Freisher	1

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Analysis Report

Sample Description: SB-3b-50' Grab Soil
LPU #59

LLI Sample # SW 6903404
LLI Group # 1358064
Account # 11713

Project Name: LPU #59

Collected: 12/18/2012 10:59 by JL

Submitted: 12/20/2012 10:55
Reported: 01/06/2013 09:36

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/kg**	**mg/kg**	
07333	Chloride by IC (solid)	16887-00-6	2,210	1,060	100
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	5.9	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07333	Chloride by IC (solid)	EPA 300.0	1	13003003201A	01/04/2013 15:43	Christopher D Meeks	100
01352	Deionized Water Extraction	EPA 300.0	1	13003003201A	01/03/2013 07:25	Nancy J Shoop	1
00111	Moisture	SM20 2540 G	1	12356820006B	12/21/2012 22:39	Scott W Freisher	1

Sample Description: SB-3b-60' Grab Soil
LPU #59

LLI Sample # SW 6903405
LLI Group # 1358064
Account # 11713

Project Name: LPU #59

Collected: 12/18/2012 11:06 by JL

Submitted: 12/20/2012 10:55
Reported: 01/06/2013 09:36

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/kg**	**mg/kg**	
07333	Chloride by IC (solid)	16887-00-6	1,750	527	50
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	5.5	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07333	Chloride by IC (solid)	EPA 300.0	1	13003003201A	01/04/2013 19:13	Christopher D Meeks	50
01352	Deionized Water Extraction	EPA 300.0	1	13003003201A	01/03/2013 07:25	Nancy J Shoop	1
00111	Moisture	SM20 2540 G	1	12361820002A	12/27/2012 09:14	William C Schwebel	1

Sample Description: SB-3b-70' Grab Soil
LPU #59

LLI Sample # SW 6903406
LLI Group # 1358064
Account # 11713

Project Name: LPU #59

Collected: 12/18/2012 11:14 by JL

Submitted: 12/20/2012 10:55
Reported: 01/06/2013 09:36

Conestoga-Rovers & Associates
13091 Pond Springs Road
Austin TX 78729

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Dilution Factor
Wet Chemistry	**EPA 300.0**		**mg/kg**	**mg/kg**	
07333	Chloride by IC (solid)	16887-00-6	1,690	521	50
Wet Chemistry	**SM20 2540 G**		**%**	**%**	
00111	Moisture	n.a.	5.1	0.50	1

"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.

General Sample Comments

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07333	Chloride by IC (solid)	EPA 300.0	1	13003003201A	01/04/2013 19:29	Christopher D Meeks	50
01352	Deionized Water Extraction	EPA 300.0	1	13003003201A	01/03/2013 07:25	Nancy J Shoop	1
00111	Moisture	SM20 2540 G	1	12361820002A	12/27/2012 09:14	William C Schwebel	1

Quality Control Summary

Client Name: Conestoga-Rovers & Associates Group Number: 1358064
Reported: 01/06/13 at 09:36 AM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 12361361201B	Sample number(s): 6903401-6903403							
Chloride by IC (solid)	N.D.	10.0	mg/kg	108		90-110		
Batch number: 13003003201A	Sample number(s): 6903404-6903406							
Chloride by IC (solid)	N.D.	10.0	mg/kg	108		90-110		
Batch number: 12356820006B	Sample number(s): 6903401-6903404							
Moisture				100		99-101		
Batch number: 12361820002A	Sample number(s): 6903405-6903406							
Moisture				100		99-101		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 12361361201B	Sample number(s): 6903401-6903403 UNSPK: P903393 BKG: P903393								
Chloride by IC (solid)	101 (2)		90-110			83.8	96.5	14 (1)	20
Batch number: 13003003201A	Sample number(s): 6903404-6903406 UNSPK: 6903404 BKG: 6903404								
Chloride by IC (solid)	-5166 (2)		90-110			2,080	1,300	46* (1)	20
Batch number: 12356820006B	Sample number(s): 6903401-6903404 BKG: 6903401								
Moisture						4.5	4.6	0	13
Batch number: 12361820002A	Sample number(s): 6903405-6903406 BKG: P902022								
Moisture						20.1	18.3	9	13

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Chevron Generic Analysis Request/Chain of Custody

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For Lancaster Laboratories use only
Acct. # 11713 Group # 1358064 Sample # 6903401-06
Instructions on reverse side correspond with circled numbers.

1 of 1

SCR #: 129056

① Client Information

Facility #: LPU #59
WBS: UWDOL-M1015-SFH
Site Address: Unit G, Sec. 1, T17S, R36E, Lea Co., NM
Chevron PM: Kegan Boyer
Lead Consultant: Conestoga-Rovers & Assoc.
Consultant/Office: CRA - Midland
Consultant Project Mgr.: Ryan Kainer
Consultant Phone #: 432-686-0086
Sampler: JOE LEWANDOWSKI

④ Matrix: Sediment ☐ Ground ☐ Surface ☐ Potable ☐ NPDES ☐ Air ☐ Soil ☒ Water Oil

⑤ Analyses Requested: BTEX + MTBE 8021 ☐ 8260 ☐ Naphth ☐; 8260 full scan; Oxygenates; TPHG; TPHD Silica Gel Cleanup ☐; Lead Total ☐ Diss. ☐ Method; VPH/EPH Method; Chlorides (300); Moisture (SM20 2540G); Hold

☐ Results in Dry Weight
☐ J value reporting needed
☐ Must meet lowest detection limits possible for 8260 compounds
☐ 8021 MTBE Confirmation
☐ Confirm MTBE + Naphthalene
☐ Confirm highest hit by 8260
☐ Confirm all hits by 8260
☐ Run ______ oxy's on highest hit
☐ Run ______ oxy's on all hits

② Sample Identification	Date Collected	Time Collected	③ Grab	Composite	Soil	Water	Oil	Total Number of Containers	Chlorides (300)	Moisture (SM20 2540G)	Hold	⑥ Remarks
SB-2b-40-45'	12/18/12	1006	X		X			1	X	X	X	
SB-2b-45-50'	↓	1009	X		X			1	X	X		
SB-2b-50-55'		1012	X		X			1	X	X	X	
SB-2b-55-60'		1015	X		X			1	X	X		
SB-2b-60-65'		1019	X		X			1	X	X	X	
SB-2b-65-70'		1024	X		X			1	X	X		
SB-3b-40-45'		1055	X		X			1	X	X	X	
SB-3b-45-50'		1059	X		X			1	X	X		
SB-3b-50-55'		1103	X		X			1	X	X	X	
SB-3b-55-60'		1106	X		X			1	X	X		
SB-3b-60-65'		1110	X		X			1	X	X	X	
SB-3b-65-70'	↓	1114	X		X			1	X	X		
JRL 12/18/12												

⑦ Turnaround Time Requested (TAT) (please circle)
(Standard) 5 day 4 day
72 hour 48 hour 24 hour

⑧ Data Package Options (please circle if required)
Type I - Full Type VI (Raw Data) Alaska/Type III

Relinquished by	Date	Time	Received by	Date	Time
[signature]	10-2-12	0830			
[signature]	12/19/12	1200			
Relinquished by Commerical Carrier: UPS ____ FedEx X ____ Other ______			[signature]	12/20/12	1055

Temperature Upon Receipt 1.6 °C
Custody Seals Intact? (Yes) No
⑨

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

Analytical Report 538952

for

GHD Services, INC- Midland

Project Manager: William Foord

CEMCLPU-59

073819

26-OCT-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

26-OCT-16

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

Reference: XENCO Report No(s): **538952**
CEMCLPU-59
Project Address: Lovington NM

William Foord:

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) 538952. 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. 538952 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 538952

GHD Services, INC- Midland, Midland, TX

CEMCLPU-59

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1-W-161019	W	10-19-16 10:15		538952-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results 538952

GHD Services, INC- Midland, Midland, TX

CEMCLPU-59

Sample Id: **MW-1-W-161019** Matrix: Ground Water Date Received:10.19.16 16.30

Lab Sample Id: 538952-001 Date Collected: 10.19.16 10.15

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Tech: MNR % Moisture:

Analyst: MNR Date Prep: 10.24.16 11.40

Seq Number: 3002599

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**117**	2.50	mg/L	10.24.16 11.40		5

Analytical Method: TPH By SW8015B Mod Prep Method: TX1005P

Tech: ARM % Moisture:

Analyst: ARM Date Prep: 10.25.16 11.00

Seq Number: 3002701

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
C6-C10 Gasoline Range Hydrocarbons	C6C10GRO	ND	1.50	mg/L	10.25.16 17.42	U	1
C10-C28 Diesel Range Hydrocarbons	C10C28DRO	ND	1.50	mg/L	10.25.16 17.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	111	%	70-135	10.25.16 17.42	
o-Terphenyl	84-15-1	120	%	70-135	10.25.16 17.42	

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

Tech: PJB % Moisture:

Analyst: PJB Date Prep: 10.20.16 12.00

Seq Number: 3002494

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	ND	0.00200	mg/L	10.20.16 13.20	U	1
Toluene	108-88-3	ND	0.00200	mg/L	10.20.16 13.20	U	1
Ethylbenzene	100-41-4	ND	0.00200	mg/L	10.20.16 13.20	U	1
m,p-Xylenes	179601-23-1	ND	0.00200	mg/L	10.20.16 13.20	U	1
o-Xylene	95-47-6	ND	0.00200	mg/L	10.20.16 13.20	U	1
Total Xylenes	1330-20-7	ND	0.00200	mg/L	10.20.16 13.20	U	1
Total BTEX		ND	0.00200	mg/L	10.20.16 13.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	96	%	80-120	10.20.16 13.20	
4-Bromofluorobenzene	460-00-4	98	%	80-120	10.20.16 13.20	

QC Summary 538952

GHD Services, INC- Midland

CEMCLPU-59

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3002599 Matrix: Water Date Prep: 10.24.16
MB Sample Id: 715299-1-BLK LCS Sample Id: 715299-1-BKS LCSD Sample Id: 715299-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	25.0	24.9	100	24.7	99	90-110	1	20	mg/L	10.24.16 10:51	

Analytical Method: **Inorganic Anions by EPA 300/300.1** Prep Method: E300P
Seq Number: 3002599 Matrix: Water Date Prep: 10.24.16
Parent Sample Id: 538937-001 MS Sample Id: 538937-001 S MSD Sample Id: 538937-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	181	125	311	104	309	102	90-110	1	20	mg/L	10.24.16 11:12	

Analytical Method: **TPH By SW8015B Mod** Prep Method: TX1005P
Seq Number: 3002701 Matrix: Water Date Prep: 10.25.16
MB Sample Id: 715376-1-BLK LCS Sample Id: 715376-1-BKS LCSD Sample Id: 715376-1-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	<1.50	100	98.6	99	94.5	95	70-135	4	25	mg/L	10.25.16 15:38	
C10-C28 Diesel Range Hydrocarbons	<1.50	100	97.1	97	93.3	93	70-135	4	25	mg/L	10.25.16 15:38	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		122		124		70-135	%	10.25.16 15:38
o-Terphenyl	129		119		119		70-135	%	10.25.16 15:38

Analytical Method: **TPH By SW8015B Mod** Prep Method: TX1005P
Seq Number: 3002701 Matrix: Ground Water Date Prep: 10.25.16
Parent Sample Id: 538951-001 MS Sample Id: 538951-001 S MSD Sample Id: 538951-001 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	<1.50	99.8	104	104	102	102	70-135	2	25	mg/L	10.25.16 16:52	
C10-C28 Diesel Range Hydrocarbons	<1.50	99.8	101	101	99.9	100	70-135	1	25	mg/L	10.25.16 16:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	126		129		70-135	%	10.25.16 16:52
o-Terphenyl	129		129		70-135	%	10.25.16 16:52

QC Summary 538952

GHD Services, INC- Midland

CEMCLPU-59

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

Seq Number: 3002494 Matrix: Water Date Prep: 10.19.16

MB Sample Id: 715152-1-BLK LCS Sample Id: 715152-1-BKS LCSD Sample Id: 715152-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0895	90	0.0888	89	70-125	1	25	mg/L	10.19.16 15:52	
Toluene	<0.00200	0.100	0.0910	91	0.0908	91	70-125	0	25	mg/L	10.19.16 15:52	
Ethylbenzene	<0.00200	0.100	0.0942	94	0.0948	95	71-129	1	25	mg/L	10.19.16 15:52	
m,p-Xylenes	<0.00200	0.200	0.192	96	0.193	97	70-131	1	25	mg/L	10.19.16 15:52	
o-Xylene	<0.00200	0.100	0.0948	95	0.0957	96	71-133	1	25	mg/L	10.19.16 15:52	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	98		97		85		80-120	%	10.19.16 15:52
4-Bromofluorobenzene	101		100		102		80-120	%	10.19.16 15:52

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

Seq Number: 3002494 Matrix: Ground Water Date Prep: 10.19.16

Parent Sample Id: 538890-001 MS Sample Id: 538890-001 S MSD Sample Id: 538890-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0934	93	0.0941	94	70-125	1	25	mg/L	10.19.16 16:24	
Toluene	<0.00200	0.100	0.0945	95	0.0963	96	70-125	2	25	mg/L	10.19.16 16:24	
Ethylbenzene	<0.00200	0.100	0.0985	99	0.101	101	71-129	3	25	mg/L	10.19.16 16:24	
m,p-Xylenes	<0.00200	0.200	0.200	100	0.204	102	70-131	2	25	mg/L	10.19.16 16:24	
o-Xylene	<0.00200	0.100	0.0978	98	0.100	100	71-133	2	25	mg/L	10.19.16 16:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	99		100		80-120	%	10.19.16 16:24
4-Bromofluorobenzene	100		103		80-120	%	10.19.16 16:24

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200) | Odessa, Texas (432-563-1800) | Lakeland, Florida (863-646-8526)

Dallas Texas (214-902-0300) | Norcross, Georgia (770-449-8800) | Tampa, Florida (813-620-2000)

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

Xenco Quote # | Xenco Job # 539952

Client / Reporting Information

Company Name / Branch: GHD-Midland

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

Email: william.foord@ghd.com | Phone No: 713-734-3090

Project Contact: Scott Foord

Sampler's Name: Justin Mixon

Project Information

Project Name/Number: CEMCLPU-59/073819

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: BTEX	TPH-GRO	TPH-DRO		Chloride	Moisture					Field Comments
1	MW-1-10-161019			1015	GW	6	X								X	X	X		X						
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									

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		10-19-16 1630				
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3			3	4		4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: Y

Temp: IR ID:R-8
CF:+ 0.1 Corrected Temp: 4.7C

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 ne

Final 1.000

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 10/19/2016 04:30:00 PM

Work Order #: 538952

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)?	4.7
#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)?	**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: 10/20/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 10/20/2016

Appendix E
Waste Manifest

24-HOUR SERVICE

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231 (575) 394-2511

PRC #1750108

No 30168

AUTHORIZATION FOR WORK

DATE 10-19-16

YOUR NO. 7201

COMPANY Chevron

LEASE LPU 11 59

MAIL INVOICE TO: Chevron

WELL Rob Speer

DESCRIPTION OF WORK

Pickup bin w/ EHP except cuttings from monitor well installation

Equipment Used	Rolloff	@$	Hrs. worked	Total
Box Rent	✓	@$	Hrs. worked	Total
Liner	✓	@$	Hrs. worked	Total
Jet Out	✓	@$	Hrs. worked	Total
Disposal	✓	@$	Hrs. worked	Total
Disposal Facility	SSI	@$	Hrs. worked	Total
Box No. Delivered		@$	Hrs. worked	Total
Box No. Picked Up		@$	Hrs. worked	Total

Driver SA Tom

Approved by Jerry

Sub Total

Sales Tax

TOTAL

CHEVRON
MCBU

VACUUM FMT

NO 59-001 **NON-HAZARDOUS WASTE MANIFEST** 1. PAGE 1 OF 1 2. Truck NO.

GENERATOR

3. COMPANY NAME	4. ADDRESS			5. PICK-UP DATE:
CHEVRON	**56 Texas Camp Rd.**			10-15-14
PHONE NO. **575-396-4414**	CITY **Lovington**	STATE **NM**	ZIP **88260**	

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	8. CONTAINERS Type	9. TOTAL QUANTITY	10. UNIT WT/Vol.	
a. Soil cuttings and debris Impacted with crude	1	CM		Y	
b.					
c.					
d.					

12. NAME OF LEASE: Lovington Paddock Unit #59

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

HES SPECIALIST — 24-HOUR EMERGENCY NO. **575-396-4414 (DIAL 1 AFTER HOURS)**

15. **Chevron Representative:** Hereby declare that the contents of this consignment are fully and accurately described above.

Josh-Mon

PRINTED TYPED NAME	SIGNATURE	DATE
Frank Forster on behalf of Comc	on behalf of COMC	

TRANSPORTERS

16. TRANSPORTER (1)	17. TRANSPORTER (2)
TRUCKING COMPANY NAME: Sundance	**TRUCKING COMPANY NAME:**
IN CASE OF EMERGENCY CONTACT: Josh-Mon	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE: 432-413-7210	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	18. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME Sefrino	PRINTED/TYPED NAME
SIGNATURE Sefrino DATE 10-15-14	SIGNATURE DATE

DISPOSAL FACILITY INFO

DISPOSAL FACILITY:	ADDRESS:	PHONE:
Sundance	Loco Hills	575-677-2411

PERMIT NO.	20. COMMENTS
10-19-2010	Roll off

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorezed and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE	TIME

PLEASE REMIT COMPLETED MANIFEST VIA MAIL, EMAIL OR FAX TO THE BELOW LISTED CONTACT:
RIMY ALVARADO - PHONE: (575) 396-441 X223 • FAX: (575) 396-6913 • EMAIL: RIMYALVARADO@CHEVRON.COM