

Robert Speer Portfolio Manager, Upstream Business Unit Remediation Team Chevron Environmental Management Company 1400 Smith St. 07049 Houston, TX 77002 Tel (731) 372-6117 Cell (713) 301-7274 rspeer@chevron.com

October 1, 2015

Kellie Jones Environmental Specialist, District 1 New Mexico Oil Conservation Division 811 South First St. Artesia, NM 88210

Re: Central Vacuum Unit 266 Injection Line Release Soil Assessment and Delineation Activities Report

Dear Ms. Jones:

Please find enclosed for your files copies of the following report for the Central Vacuum Unit 266 Injection Line release project site.

• CVU 266 Injection Line – 2015 Soil Assessment and Delineation Activities Report, Unit E -Section 6 – Township 18 South – Range 35 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 75 bbls of produced water as documented in our January 2011 submittal of form C-141. Soil sampling in the release area indicate that vertical and horizontal delineation of Chlorides have been achieved at the site, and that no further assessment or remediation activities are warranted for this project.

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

Sincerely,

Rob Speer

Environmental Project Manager

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

	Santa I	Fe, INIM 87505			
Relea	ase Notificatio	on and Corrective Actio	n		
	2	OPERATOR	Initial Report	\boxtimes	Final Report
Name of Company: Chevron (CEMC)		Contact: Rob Speer			
Address: 1400 Smith Street, Houston, Texas 77002 Telephone No. (713) 372-6117					_
Facility Name: Central Vacuum Unit No. 26					
Surface Owner: State of New Mexico	Mineral Owner	: State of New Mexico	API No. 30-025-3	0022	
	LOCATIO	DN OF RELEASE			

	Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	Î
	E	6	18S	35 E					Lea	
- 11										6

Latitude: <u>32.782766°</u> Longitude: <u>-103.510673°</u>

NATURE	OF RELEASE				
Type of Release: Produced Water/Release to Land	Volume of Release: 75 bbls	Volume Re	ecovered: Zero (0)		
	water				
Source of Release: Injection Well	Date and Hour of Occurrence:		lour of Discovery:		
	01/06/11 and 12:00 Noon	01/06/11 a	nd 12:00 PM		
Was Immediate Notice Given?	If YES, To Whom?				
🛛 Yes 🗌 No 🗌 Not Required	Larry Johnson				
By Whom? Kim Klahsen	Date and Hour: 03/06/09 and 11:5	8 AM			
Was a Watercourse Reached?	If YES, Volume Impacting the Watercourse.				
Yes X No					
If a Watercourse was Impacted, Describe Fully.*					
Describe Cause of Problem and Remedial Action Taken.*					
Visible water on location due to a rupture in the injection line. After excav	ation completed the investigation as	to why line ru	iptured.		
Describe Area Affected and Cleanup Action Taken.*					
besonee Anea Anteolog and Cloump Action Fution.					
Area affected included well pad and down slope lease road to the southeas	t. The injection line was shut-in and	emergency on	e-call was initiated for		
excavation and repair of ruptured line.					
Initial sampling activities commenced. Results of soil sampling indicated		ns in shallow	soils. In response, a		
comprehensive soil assessment was performed to confirm the extents of the	e soil impacts.				
Results of the additional assessment activities are provided in the attached	report				
Results of the additional assessment activities are provided in the attached	report.				
I hereby certify that the information given above is true and complete to the	he best of my knowledge and understa	and that pursu	ant to NMOCD rules and		
regulations all operators are required to report and/or file certain release no					
public health or the environment. The acceptance of a C-141 report by the					
should their operations have failed to adequately investigate and remediate					
or the environment. In addition, NMOCD acceptance of a C-141 report de	pes not relieve the operator of respon	sibility for co	mpliance with any other		
federal, state, or local laws and/or regulations.					
	OIL CONSERV	<u>VATION I</u>	DIVISION		
Signature: Carlo Score					
Printed Name: Rob Speer Approved by Environmental Specialist:					
Title: Project Manager	Approval Date: Expiration Date:		lata		
Title: Project Manager	Approval Date:	Expiration D			
E-mail Address: rspeer@chevron .com	Conditions of Approval:				
	Attached				
Date: 9-30-15 Phone: (713) 372-6117					

* Attach Additional Sheets If Necessary



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Soil Assessment and Delineation Activities Report

Central Vacuum Unit No. 266 Injection Line Release Unit E, Section 6, Township 18 South, Range 35 East Lovington, New Mexico

Chevron Environmental Management Company

1755 Wittington Place, Suite 500 Dallas Texas 75234 074635 | Report No 3 | September 2Ì Ê2015



Soil Assessment and Delineation Activities Report

Central Vacuum Unit No. 266 Injection Line Release Unit E, Section 6, Township 18 South, Range 35 East Lovington, New Mexico

Chevron Environmental Management Company

Thomas C. Larson Principal, Midland Operations Manager

Jake L. Ferenz Project Manager

1755 Wittington Place Suite 500 Dallas Texas USA 074635 | Report No 3 |September 28, 2015

Table of Contents

1.	Introduction	. 1
2.	Project Information and Background	. 1
3.	Recommended Remediation Action Limits	. 1
4.	Drilling and Sampling - 2014	. 2
	4.1 Soil Sampling Analytical Results - 2014	. 2
5.	Drilling and Sampling - 2015	. 3
	5.1 Soil Sampling Analytical Results - 2015	. 3
6.	Conclusions	. 3

Figure Index

Figure 1	Site Location Map
Figure 2	Site Aerial Map
Figure 3	Site Details and Utilities Map
Figure 4	Site Details and Analytical Results Map

Table Index

Table 1	Soil Analytical Summary – Crain
Table 2	Soil Analytical Summary – 2014
Table 3	Soil Analytical Summary - 2015

Appendices

- Appendix A Original Form C-141
- Appendix B Photograph Log
- Appendix C Soil Boring Logs
- Appendix D Soil Laboratory Analytical Reports

1. Introduction

GHD is pleased to present this Soil Assessment and Delineation Activities Report to Chevron Environmental Management Company (CEMC) for the Central Vacuum Unit No. 266 injection line release location (hereafter referred to as the "Site").

2. Project Information and Background

The Site is located in Unit E, Section 6, Township 18 South, Range 35 East, approximately 0.65miles southwest of Buckeye, New Mexico, in eastern Lea County (Figure 1 and Figure 2).

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

"FS found water running down location. Leak due to rupture in injection line. After excavation is complete.....will investigate cause of rupture."

Crain Environmental (Crain) conducted the initial field assessment activities at the Site in January 2011. Crain's assessment included a site visit, shallow soil sample collection, analytical laboratory analyses and preliminary determinations of impacts to environmental media. GHD met with Ms. Crain on April 21, 2011 to review and transfer the file material for the Site as well as to discuss the history of delineation efforts to date for the Site. A soil analytical summary of Crain's initial sample collection is presented as Table 1.

In 2014, Chevron contracted GHD to perform a comprehensive soil assessment at the Site by implementing a soil boring program. A Site visit was performed on April 8, 2014 by GHD. During the Site visit, boring locations were flagged for utility locating purposes. In addition, the Site was walked to observe Site features; which included oversight of a geophysical site survey by way of Ground Penetrating Radar (GPR) to assess the presence of subsurface utility hazards. Multiple surface and subsurface hazards were identified at the Site. A site details and utility map is presented as Figure 3. On April 14, 2014, GHD advanced eleven soil borings to depths ranging from approximately 35-feet to 60-feet below ground surface (bgs). Results of the 2014 soil boring and sampling program indicated the presence of chloride concentrations in soil.

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

3. **Recommended Remediation Action Limits**

Information available on the Petroleum Recovery Research Center (PRRC) Mapping Portal and the United States Geological Survey (USGS) Current Water Database for the Nation; indicates the depth to groundwater at the Site is greater than 100-feet bgs; the nearest private domestic water

source is greater than 200-feet from the release site; the nearest public/municipal water source is greater than 1,000-feet from the release site; and the release site lies more than 1,000 horizontal feet from the nearest surface water body. Consequently, the NMOCD total ranking criteria score is zero (0) for the Site. The anticipated site-specific Recommended Remediation Action Levels (RRALs) to be applied to this location by the NMOCD are 10 milligram per kilogram (mg/kg) for benzene; 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX); 5,000 mg/kg for TPH; and an NMOCD accepted 500 mg/kg for chlorides.

4. Drilling and Sampling - 2014

On April 8, 2014, GHD's contracted service provider, Harrison & Cooper, Inc. (HCI) of Lubbock, Texas submitted an initial New Mexico One Call utility locate ticket (2014110877). GHD submitted a MCBU Chevron Dig Plan with appropriate attachments for approval to the Chevron Buckeye Field Management Team. On April 14, 2014 GHD and HCI mobilized to the Site to begin soil boring activities. The soil borings were pre-cleared via air knife techniques to a depth of 5-feet bgs or until refusal. The remainder of each boring was advanced using an air rotary drill rig. Eleven soil borings were advanced across the Site on April 14 and 15, 2014. Eight soil borings were advanced to total depths of 35-feet bgs and three soil borings were advanced to total depths of 60-feet bgs. Chloride concentrations in soil were field screened by mixing soil samples with distilled water. The rinsate was then screened using Hach chloride test strips to measure chloride concentrations in milligrams per liter (mg/L). This field method led to soil boring (SB-10) being advanced to 60-feet bgs, and soil borings (SB-3 and SB-6) being advanced to 35-feet bgs. All eleven soil borings were plugged with bentonite. Soil borings were logged in accordance with the Unified Soil Classification System and recorded.

Soil samples were collected for laboratory analysis from each boring (SB-1 through SB-11) at varying intervals beginning at the surface (0-feet bgs). Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco Laboratories (Xenco) in Odessa, Texas for analysis of chlorides by EPA Method E300.0.

4.1 Soil Sampling Analytical Results - 2014

The soil type observed in soil samples collected during the drilling program consisted of light gray, dense-weathered caliche from the surface to approximately 8-feet bgs. Light yellow to orange caliche, weathered to dense, interbedded with well cemented very fine grain sandstone was observed from approximately 8-feet bgs to 25-feet bgs. Unconsolidated, very fine grain, yellow/orange/brown sand interbedded with moderate to well cemented very fine grain sandstone lithologies were noted in the 35-feet and 60-feet interval. Moisture content observed in the soil samples was dry in all instances.

Soil boring samples (SB-1, SB-2, SB-3, SB-4, SB-5, SB-7, SB-8, SB-9 and SB-11) collected from the Site for laboratory analyses were below the Site RRAL (500 mg/kg) for chloride concentrations at total depth. Soil boring samples (SB-6 and SB-10) collected from the Site for laboratory analysis exceeded the Site RRAL at total depths of 35-feet and 60-feet for chloride concentrations (500 mg/kg) at 1,410 mg/kg and 631 mg/kg, respectively. Soil laboratory analytical results from GHD's 2014 activities are summarized in Table 2, and on Figure 4.

5. Drilling and Sampling - 2015

On August 11, 2015, HCI of Lubbock, Texas submitted an initial New Mexico One Call utility locate ticket (2015331929). GHD submitted a MCBU Chevron Dig Plan with appropriate attachments for approval to the Chevron Buckeye Field Management Team. On August 19, 2015 GHD and HCI mobilized to the Site to begin soil boring activities. The soil borings were pre-cleared via air knife techniques to a depth of 5-feet bgs or until refusal. The remainder of each boring was advanced using an air rotary drill rig. On August 20, 2015, four soil borings (SB-12, SB-13, SB-14, and SB-15) were advanced to approximately 35-feet bgs and one boring (SB-16) was advanced to 90-feet bgs. All five soil borings were plugged with bentonite. A photo log documenting the 2014 and 2015 drilling activities is included as Appendix B. Soil borings were logged in accordance with the Unified Soil Classification System and recorded. Visual representation of the 2014 and 2015 boring logs can be found in Appendix C.

Soil samples were collected for laboratory analysis from each boring (SB-12 through SB-16) at varying intervals beginning at the surface (0-feet bgs). Soil samples were packed into laboratory prepared jars and stored in a cooler with ice. The soil samples were sent to Xenco in Midland, Texas for analysis of chlorides by EPA Method 300/300.1. The soil laboratory analytical reports for all sampling activities (2011 to 2015) are included as Appendix D.

5.1 Soil Sampling Analytical Results - 2015

The soil type observed in soil samples collected during the 2015 drilling program consisted of dense and weathered dull yellow to orange caliche from the surface to approximately 15-feet bgs. Pale yellow, weathered and dense caliche interbedded with poor to moderately cemented very fine grain sandstone was observed to approximately 21-feet bgs. Dull orange very fine grain sand with broken caliche interbedded with poor to moderately cemented very fine grain sandstone lithologies were noted to a total depth of approximately 35-feet bgs. Moisture content observed in the soil samples was dry in all instances with the exception of soil boring (SB-16) at the 68-foot interval; which was noted as being moist.

Samples collected from four soil borings (SB-12, SB-14, SB-15 and SB-16) were below the Site RRAL (500 mg/kg) for chloride concentrations; with the exception of SB-14 at the 15-foot interval (593 mg/kg). Soil boring (SB-13) exceeded site RRAL (500 mg/kg) at the surface and in the 10-foot to 25-foot interval. This data from the soil boring program demonstrates that the nature and extent of chloride impacts from the release incident are minimal and the potential risk to impact groundwater is extremely low. A soil analytical summary of the 2015 results is presented in Table 3. A Site Details and Analytical Results Map (2014 – 2015) is presented as Figure 4.

6. Conclusions

A thorough subsurface investigation was implemented at the Site. Evaluation of the analytical data obtained from soil assessment and delineation activities performed in April of 2014 and August of 2015 indicates that vertical and horizontal delineation of chloride impacts has been achieved at the Site. Based on data provided in this report, no further delineation or remedial efforts are warranted.

Figures



CAD File: I:\CAD\Files\07----\074635-Chevron-CVU #266\074635-00\074635-00(003)\074635-00(003)GN-DL001.dwg



Source: USDA FSA Imagery, May 10, 2014





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

074635-00 Sep 16, 2015

FIGURE 2

SITE AERIAL MAP

CAD File: I:\CAD\Files\07----\074635-Chevron-CVU #266\074635-00\074635-00(003)\074635-00(003)GN-DL001.dwg







LEA COUNTY, NEW MEXICO CENTRAL VACUUM UNIT #266

SITE DETAILS AND UTILITIES MAP

CAD File: I:\CAD\Files\07----\074635-Chevron-CVU #266\074635-00\074635-00(003)\074635-00(003)GN-DL001.dwg

FIGURE 3



New Mexico East (US Feet)

SITE DETAILS AND ANALYTICAL RESULTS MAP



Tables

GHD Chevron Environmental Management Company - Soil Assessment and Delineation Activities Report | 074635 (3)

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

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recomme	500 (mg/kg)		
SS-1	1/19/11	6"	70,400
SS-1	1/18/11	1'	3,160
SS-1	1/18/11	2'	912
SS-2	1/19/11	6"	19,200
SS-2	1/18/11	1'	2,400
SS-2	1/18/11	2'	1,810
SS-2	1/18/11	3'	1,520
SS-3	1/19/11	6"	46,400
SS-3	1/18/11	1'	1,730
SS-3	1/18/11	2'	2,400
SS-3	1/18/11	3'	1,410
SS-4	1/19/11	6"	57,600
SS-4	1/18/11	1'	8,000
SS-4	1/18/11	2'	4,880
SS-5	1/19/11	6"	51,200
SS-5	1/18/11	1'	11,400
SS-5	1/18/11	2'	5,440
SS-5	1/18/11	3'	5,360
SS-6	1/19/11	6"	42,400
SS-6	1/18/11	1'	2,200
SS-6	1/18/11	2'	6,160
SS-6	1/18/11	3'	3,200

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram

2. Chloride analyses by EPA Method E300.0

3. Highlighted cells indicate concentrations exceeding guidance RRALs

4. bgs - below ground surface

5. Depth of samples reported in feet

Table 2Soil Analytical Summary - 2014Central Vacuum Unit No. 266Lea County, New Mexico

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recor	500 (mg/kg)		
SB-1	4/15/14	0'	7,600
SB-1	4/15/14	5'	1,310
SB-1	4/15/14	15'	976
SB-1	4/15/14	35'	2,760
SB-1	4/15/14	50'	143
SB-1	4/15/14	60'	95.7
SB-2	4/15/14	0'	18,300
SB-2	4/15/14	5'	3,250
SB-2	4/15/14	10'	3,080
SB-2	4/15/14	15'	685
SB-2	4/15/14	25'	34.9
SB-2	4/15/14	35'	16.2
SB-3	4/15/14	0'	6,390
SB-3	4/15/14	5'	433
SB-3	4/15/14	15'	16.3
SB-3	4/15/14	35'	6.73
35-3	4/15/14		0.75
SB-4	4/15/14	0'	393
SB-4	4/15/14	5'	159
SB-4	4/15/14	15	17.4
SB-4	4/15/14	35'	12.2
SB-5	4/15/14	0'	760
SB-5	4/15/14	5'	173
SB-5	4/15/14	10'	913
SB-5	4/15/14	15'	185
SB-5	4/15/14	25'	32.7
SB-5	4/15/14	35'	22.0
SB-6	4/14/14	0'	15,500
SB-6	4/14/14	5'	1,630
SB-6	4/14/14	10'	1,070
SB-6	4/14/14	15'	2,330
SB-6	4/14/14	25'	269
SB-6	4/14/14	35'	1,410

Table 2Soil Analytical Summary - 2014Central Vacuum Unit No. 266Lea County, New Mexico

Sample ID Sample Date		Depth (bgs)	Chlorides (mg/kg)
NMOCD Recom	500 (mg/kg)		
SB-7	4/15/14	0'	9,000
SB-7	4/15/14	5'	3,430
SB-7	4/15/14	10'	3,950
SB-7	4/15/14	15'	715
SB-7	4/15/14	25'	386
SB-7	4/15/14	35'	388
SB-8	4/14/14	0'	29,600
SB-8	4/14/14	5'	3,220
SB-8	4/14/14	10'	2,220
SB-8	4/14/14	15'	1,430
SB-8	4/14/14	25'	133
SB-8	4/14/14	35'	32.2
SB-9	4/14/14	0'	17.8
SB-9	4/14/14	5'	38.1
SB-9	4/14/14	10'	526
SB-9	4/14/14	15'	183
SB-9	4/14/14	25'	17.8
SB-9	4/14/14	35'	18.3
SB-10	4/14/14	0'	4,610
SB-10	4/14/14	5'	851
SB-10	4/14/14	15'	135
SB-10	4/14/14	25'	746
SB-10	4/14/14	35'	1,580
SB-10	4/14/14	60'	631
SB-11	4/14/14	0'	7,360
SB-11	4/14/14	5'	1,150
SB-11	4/14/14	10'	169
SB-11	4/14/14	20'	183
SB-11	4/14/14	40'	7.57
SB-11	4/14/14	60'	7.72

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram

2. Chloride analyses by EPA Method E300.0

3. Highlighted cells indicate concentrations exceeding guidance RRALs

4. bgs - below ground surface

5. Depth of samples reported in feet

Sample ID	Sample Date	Depth (bgs)	Chlorides (mg/kg)
NMOCD Recom	500		
05.40	0/00/45	0'	(mg/kg)
SB-12	8/20/15	0' 5'	3.03 5.02
SB-12 SB-12	8/20/15 8/20/15	10'	6.76
SB-12 SB-12	8/20/15	15'	4.19
SB-12 SB-12	8/20/15	20'	<2.15
SB-12 SB-12	8/20/15	25'	<2.09
SB-12	8/20/15	35'	3.49
	0/20/10		
SB-13	8/20/15	0'	28,300
SB-13	8/20/15	5'	260
SB-13	8/20/15	10'	527
SB-13	8/20/15	15'	599
SB-13	8/20/15	20'	613
SB-13	8/20/15	25'	1,180
SB-13	8/20/15	35'	385
	0,20,10		
SB-14	8/20/15	0'	79.5
SB-14	8/20/15	5'	342
SB-14	8/20/15	10'	186
SB-14	8/20/15	15'	593
SB-14 SB-14	8/20/15	20'	235
SB-14		25'	51.6
SB-14 SB-14	8/20/15 8/20/15	35'	13.0
5B-14	8/20/15	30	13.0
05.45	0/00/45	01	45.0
SB-15	8/20/15	0'	45.9
SB-15	8/20/15	5'	99.1
SB-15	8/20/15	10'	27.1
SB-15	8/20/15	15'	17.1
SB-15	8/20/15	20'	17.9
SB-15	8/20/15	25'	13.8
SB-15	8/20/15	35'	12.1
SB-16	8/20/15	0'	10.7
SB-16	8/20/15	5'	248
SB-16	8/20/15	10'	10.9
SB-16	8/20/15	15'	9.07
SB-16	8/20/15	20'	3.24
SB-16	8/20/15	30'	5.04
SB-16	8/20/15	50'	2.19
SB-16	8/20/15	70'	<2.12
SB-16	8/20/15	90'	2.13

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram

Chloride analyses by EPA Method E300.0
 Highlighted cells indicate concentrations exceeding guidance RRALs

4. bgs - below ground surface

5. Depth of samples reported in feet



GHD Chevron Environmental Management Company - Soil Assessment and Delineation Activities Report | 074635 (3)

Appendix A Original Form C-141

State of New Mexico Energy Minerals and Natural Resources

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

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

Release Notification and Corrective Action

	OPERATOR	X Initial Report	Final Repor
Name of Company CHEVRON	Contact Josie DeLeon		
Address	Telephone No.Office: 575-396-4414	ext 223 Cellular: 432	-425-1528
56 Texas Camp Road, Lovington NM 88260	59A		
Facility Name: CVU-66	Facility Type: Injection well		

Surface Owner:

Mineral Owner

Lease No.

LOCATION OF RELEASE-API # 30-025-25796

	Longitude: degrees minutes seconds Lattitude: degrees minutes seconds							
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
		E.	Ū.					Lea
Е	6	18.0S	35E		North		West	

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 75 BW	Volume Recovered0
Source of Release : Injection well	Date and Hour of Occurrence	Date and Hour of Discovery
	Jan 6, 2011 @ approx 12:00	Jan 6, 2011 12:00 p.m.
	Noon	*************************************
Was Immediate Notice Given?	If YES, To Whom? Mr. Larry Joh	nson
x Yes 🗌 No Not Required		
By Whom? /Kim Klahsen		
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	tercourse.
Yes x No		
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.*FS found water investigate cause of rupture.	running down location. Leak due to rupture	in injection line. After excavation complete will
Describe Area Affected and Cleanup Action Taken.*Shut in and called in	"one call" for excavation for repair of line.	
I hereby certify that the information given above is true and complete to	the best of my knowledge and underst	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release	notifications and perform corrective ad	ctions 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 remedi	ate 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 respon	isibility for compliance with any other
federal, state, or local laws and/or regulations.	OIL CONSED	VATION DIVISION
Signature:	<u>OIL CONSER</u>	VATION DIVISION
Signature.	Approved by District Supervisor:	
Printed Name: Josie DeLeon	Approved by District Supervisor:	
Title: Safety Specialist	Approval Date:	Expiration Date:
		Attached

Conditions of Approval:

Phone: 432-425-1528

Date: January 10, 2011 * Attach Additional Sheets If Necessary

Appendix B Photograph Log



Photo 1 – View of drilling activities (SB-4) facing south west



Photo 2 – View of drilling activities (SB-2) facing east



Site Photographs



Photo 3 – View of drilling activities (SB-4) facing north east



Photo 4 – View of drilling activities (SB-11) facing south east



Site Photographs



Photo 3 – View of air knife/bore hole clearance activities facing north east



Photo 4 - View of drilling activities (SB-13) facing north east

Site Photographs





Photo 3 - View of air rotary drill rig and overhead utility observation facing north



Photo 4 - View of drilling activities (SB-14) facing north



Site Photographs

Appendix C Soil Boring Logs

						SOIL	BC		00	ì		
Project: Client:		acuum Unit ty, New Me					No.	SB-1		-	File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABC	DRATORY	TEST DAT	ΓA		FIE	LD DATA				BORING DATA	_
Benzene	Loluene	Ethyl- benzene	ed in mg/k səuə/X	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 2:05 pm Finish Time: 2:50 pm	
							\boxtimes	\bigcirc			Pad Material: Caliche, light gray, crushed-broken, dry	Γ.
- - - -								-5-			Caliche: Light gray, dense-weathered, dry	
- - - - - - - - -							\boxtimes	- 10			Caliche: Light yellow-orange, dense-weathered,dry	
- - - - -								- 20			Caliche: Light yellow-orange, weathered-dense, interbedded with well cemented, very fine grain sandstone, dry	
								- 25			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
- - - - - -							\boxtimes	-35			Sand: Bright yellowish-brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
	Sampling	Interval	<u> </u>	<u> </u>	So	Stratification is In bil Classification Ba	ferre	ed And May No on Visual-Man	t be l ual F	Exac	t. Vater First Noted	

						0.011								_	
Project: Client:		acuum Uni ty, New Me					ВС	SB-1	OG		File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/15/2014 Harrison & Cooper, Ir Kenny Cooper Air/Mud Rotary John Fergerson	IC.		
	LABC	DRATORY	TEST DAT	A		FIE	LD [DATA				BORING DATA		_	
	Res	ults Report	ed in mg/kg	1		Photo-	6		e	rval					
Benzene	Toluene	Ethyl- benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 2:05 pm	Finish Time:	2:50 pm		
								- 45			Sand: Bright yellowis interbedded with m	sh-brown, very fine grain noderate-well cemented sandstone, dry	unconsolidated, very fine grain		
	Sampling	Interval			S	Stratification is Ir oil Classification Ba	ferre ased	ed And May No on Visual-Man	be E ual P	Exact Proce	dure	∑ ─	Water First Noted Analyzed Sample		

Analyzed Sample

						SOIL	BC	DRING L	OG	;		
Project: Client:		acuum Uni ty, New Me					No.	SB-2	_		File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABC	DRATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA	
Benzene	Res	Ethyl- benzene	ed in mg/kg saualy	Total TPH (C6-C35)	Chlorides	Photo- lonization Detection Reading (ppm)		Depth (feet)	Water Level	Screen Interval	Start Time: 1:15 pm Finish Time: 1:45 pm	
- - - - - -							X				Pad Material: Caliche, light gray, crushed-broken, dry Caliche: Light gray, dense-weathered, dry	
- - - - - - - -											Caliche: Light yellow-orange, dense-weathered, dry	
- - - - - - - - - - - - - - - - - - -							\boxtimes	- 20			Caliche: Light yellow-orange, weathered-dense, interbedded with well cemented very fine grain sandstone, dry Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
								-35			Sand: Bright yellowish brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry. Total Depth = 35-feet	
	Sampling	Interval			S	Stratification is Ir oil Classification Ba	nferre	d And May Not on Visual-Man	be l ual F	Exact Proce	t. sdure Water First Noted Analyzed Sample	

	SOIL BORING LOG											
Project: Client:		acuum Uni ty, New Me					No.	SB-3			File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABO	DRATORY	TEST DAT	A		FIE	LD [DATA			BORING DATA	
	Res	ults Report	ed in mg/kg	1		Photo-			0	val		
Benzene	Toluene	Ethyl- benzene	Xylenes	Total TPH (C6-C35)	Chlorides	Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 12:30 pm Finish Time: 1:00 pm	
_							\boxtimes	\bigcirc			Pad Material: Caliche, light gray, crushed-broken, dry	Γ.
- - - 							\boxtimes				Caliche: Light gray, dense-weathered, dry	-
- - -												-
- - -							\boxtimes	-15-			Caliche: Light yellow-orange, dense-weathered, dry	- - -
- - - - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	
- - - - -								- 25			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	- - -
- - - -								- 30			Sand: Bright yellowish brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain	-
- - - -							\boxtimes	-35			sandstone, dry. Total Depth = 35-feet	-
\boxtimes	Sampling	Interval			So	Stratification is Ir bil Classification Ba	nferre	▲ 40 → 40 → 40 And May Not on Visual-Manu	be I Jal F	Exact	t. sdure Water First Noted Analyzed Sample	

						SOIL	BC	RING L	00	;	
Project: Client:		acuum Unit ity, New Me				ľ	No.	SB-4			File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson
	LABO	ORATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA
Benzene	Loluene	Ethyl- benzene	ed in mg/kg səuəlx	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 10:45 am Finish Time: 11:10 am
			.,				\bowtie	\bigcirc			Pad Material: Caliche, light gray, crushed-broken, dry
- - - - -							\boxtimes	-5-			Caliche: Light gray, dense-weathered, dry
- - - - -							\boxtimes	- 10			Caliche: Light yellow-orange, dense-weathered, dry
- -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry
- - - - -								- 25			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry
							\boxtimes	- 30			Sand: Bright yellowish brown, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry. Total Depth = 35-feet
- - - -								40			
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	d And May Not on Visual-Man	t be I ual F	Exac Proce	t. dure Water First Noted Analyzed Sample

						SOIL	BC		00	;		
Project: Client:		acuum Unit ty, New Me				I	No.	SB-5			Date: Drilling Co.: Supervisor: Type Rig:	74635 4/15/2014 Harrison & Cooper, Inc. Kenny Cooper Air/Mud Rotary John Fergerson
	LABO	DRATORY	TEST DAT	ΓA		FIE	LD [DATA				BORING DATA
Benzene	Res	Ethyl- benzene	ed in mg/k səuə/X	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 11:25 am	Finish Time: 11:55 am
- -							\boxtimes	\bigcirc				silt, grayish yellow brown, unconsolidated, n caliche in matrix, dry
- - -							\boxtimes	-6)			Caliche: Ligh	nt gray, dense-weathered, dry
- - - - - - - - - -								-10			Caliche: Light yell	low-orange, dense-weathered, dry
- - - - -								- 20			Caliche: Light yellow-ora well cemented	ange, weathered-dense interbedded with I very fine grain sandstone, dry
								- 25			interbedded with mo	range, very fine grain unconsolidated, derate-well cemented very fine grain sandstone, dry
- - - -							\boxtimes	-35			То	tal Depth = 35-feet
- - -								40				
\boxtimes	Sampling	Interval			S	Stratification is Ir ioil Classification B	nferre ased	d And May Not on Visual-Man	t be ual F	Exac Proce	t. dure	Water First Noted Analyzed Sample

						SOIL	BC	DRING L	00	}		-				
Project: Client:		acuum Uni ity, New Me				ŗ	No.	SB-6			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson					
	LABO	ORATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA					
Benzene	Res euenno L	ults Report Ethyl- benzene	ed in mg/kg səuə X	Total TPH (C6-C35)	Chlorides	Photo- lonization Detection Reading (ppm)	X Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 4:10 pm Finish Time: 4:40 pm Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated,					
- - - - - -							\boxtimes	-5			broken caliche in matrix, dry Caliche: Light gray, dense-weathered, dry					
- - - - - - -							X	-10			Caliche: Light yellow-orange, dense-weathered, dry					
- - - - -							\boxtimes	- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	-				
								-25 — -30 —			Sand: Light yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry					
- - - - -								- 35			Total Depth = 35-feet					
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification Ba	ased	L 40 ad And May No on Visual-Man	t be ual f	Exac Proce	t. Edure Water First Noted Analyzed Sample					

	SOIL BORING LOG												
Project: Client:		acuum Uni ity, New Me				I	No.	SB-7			File No.:74635Date:4/15/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson		
	LABO	ORATORY	TEST DAT	ГА		FIE	LD [DATA			BORING DATA		
Benzene	Loluene	Ethyl- benzene	ed in mg/kg səuəlx	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 10:00 am Finish Time: 10:30 am		
- - -											Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry	[. .	
- - -							\boxtimes	-5			Caliche: Light gray, dense-weathered, dry		
- -							\boxtimes	-10					
- - -							\boxtimes	-15			Caliche: Light yellow-orange, dense-weathered, dry		
- - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry		
-								- 25			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry		
- - - -							\boxtimes	- 35			Total Depth = 35-feet		
- - -								40					
\boxtimes	Sampling	Interval			s	Stratification is Ir oil Classification B	nferre	d And May Not on Visual-Man	t be I ual F	Exact Proce	ct. eedure Water First Noted Analyzed Sample		

						SOIL	BC		00	}		•
Project: Client:		acuum Unit					No.	SB-8			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LAB	ORATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA	
ene		ults Report		Total TPH (C6-C35)	ides	Photo- Ionization Detection	Sampling	Depth (feet)	Water Level	Screen Interval		
Benzene	Toluene	Ethyl- benzene	Xylenes	Total (C6-0	Chlorides	Reading (ppm)	ů		Wa	Scre	Start Time: 3:30 pm Finish Time: 4:00 pm	
											Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry	
- - - -							\boxtimes	-5			Caliche: Light gray, dense-weathered, dry	
- - -							\boxtimes	-10			 	
- - 							\boxtimes	-15			Caliche: Light yellow-orange, dense-weathered, dry	-
- - - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	-
- - 								-25			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
- - - -								- 30				- - -
-							\boxtimes	-35			Total Depth = 35-feet	
-								40				
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	d And May No	t be ual f	Exac Proce	t. Sedure Water First Noted Analyzed Sample	
						SOIL	BC		OG	}		-
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Project: Client:		acuum Uni ty, New Me					No.	SB-9			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABC	DRATORY	TEST DAT	A		FIE	LD [DATA			BORING DATA	-
Benzene	Loluene	Ethyl- benzene	ed in mg/kg Xhlenes	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 2:50 pm Finish Time: 3:15 pm	
- - - -								-5-			Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry Caliche: Light gray, dense-weathered, dry	
- - - -							\boxtimes					-
- - - -							\boxtimes	-15			Caliche: Light yellow-orange, dense-weathered, dry	-
- - - - -								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry	-
- - - - -								-25			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	
- - - -							\boxtimes				Total Depth = 35-feet	•
-								40				-
\square	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	ed And May No on Visual-Man	t be I ual F	Exac Proce	t. sdure Water First Noted Analyzed Sample	

						SOIL	BC	DRING L	00)			
Project: Client:		acuum Unit hty, New Me				I	No.	SB-10			File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/14/2014 Harrison & Cooper, Inc. Kenny Cooper Air/Mud Rotary John Fergerson	
		ORATORY				FIE	LD [DATA				BORING DATA	
Benzene	Loluene	Ethyl- benzene	ed in mg/k səuə/X	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1:10 pm	Finish Time: 2:30 pm	
 - -					0						Top Soil: Clayey sandy	silt, grayish yellow brown, unconsolidated, en caliche in matrix, dry	
- 							\boxtimes	-5-			Caliche: Lig	ht gray, dense-weathered, dry	
- -							\boxtimes	-10-					
- - -								- 15			Caliche: Light ye	llow-orange, dense-weathered, dry	
- 								- 20				range, weathered-dense interbedded with d very fine grain sandstone, dry	
							X	- <u>2</u> 5			Sand: Yellow-orange, v with moderate-well c	ery fine grain unconsolidated, interbeddec emented very fine grain sandstone, dry	- - - - - - - - - - - - - - - - - - -
-	Sampling	Interval			s	Stratification is Ir oil Classification Ba	nferre	40	t be I ual F	Exac	dure	Water First Noted Analyzed Sample	

						SOIL	BC		00	;			
Project: Client:		acuum Uni ty, New Me					No.	SB-10			File No.: Date: Drilling Co.: Supervisor: Type Rig: Logged by:	74635 4/14/2014 Harrison & Cooper, Inc. Kenny Cooper Air/Mud Rotary John Fergerson	
	LABC	DRATORY	TEST DAT	Ā		FIE	LD [DATA				BORING DATA	
Benzene	Loluene	Ethyl- benzene	ed in mg/ki səuə/X	Total TPH (C6-C35)	Chlorides	Photo- lonization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 1:10 pm	Finish Time: 2:	30 pm
								- 45			with moderate-well c Sand: Dull yellow-o interbedded with m Sand: Dull orange, ver with slight-moderate c To	ery fine grain unconsolidat emented very fine grain sa range, very fine grain, unc oderate-well cemented ver sandstone, dry y fine grain, unconsolidate emented very fine grain sa otal Depth = 60-feet	ndstone, dry onsolidated, y fine grain d interbedded andstone, dry.
\boxtimes	Sampling	Interval			S	Stratification is Ir oil Classification Ba		d And May No				-	/ater First Noted nalyzed Sample

						SOIL	BC		00	}	
Project: Client:		acuum Unii ity, New Me				I	No.	SB-11			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson
	LABO	DRATORY	TEST DAT	Ā		FIE	LD [DATA			BORING DATA
Benzene	Loluene	Its Report Ethyl- benzene	ed in mg/kg səuəlX	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 11:55 pm Finish Time: 12:45 pm
								\bigcirc		0,	Top Soil: Clayey sandy silt, grayish yellow brown, unconsolidated, broken caliche in matrix, dry
- - - - -								-6			Caliche: Light gray, dense-weathered, dry
								- 10			Caliche: Light yellow-orange, dense-weathered, dry
								- 20			Caliche: Light yellow-orange, weathered-dense interbedded with well cemented very fine grain sandstone, dry
- - - - - - - - - - -								- 30			Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry
-	Sampling	Interval			S	Stratification is Ir oil Classification B	nferre ased	ed And May Not	t be ual F	Exac	t. edure Water First Noted Analyzed Sample

						SOIL	BC	ORING L	OG	;		-
Project: Client:		acuum Unit ty, New Me					No.	SB-11			File No.:74635Date:4/14/2014Drilling Co.:Harrison & Cooper, Inc.Supervisor:Kenny CooperType Rig:Air/Mud RotaryLogged by:John Fergerson	
	LABO	DRATORY	TEST DAT	ГА		FIE	LD [DATA			BORING DATA	_
Benzene	Res	Ethyl- benzene	ed in mg/k Saual X	Total TPH (C6-C35)	Chlorides	Photo- Ionization Detection Reading (ppm)	Sampling	Depth (feet)	Water Level	Screen Interval	Start Time: 11:55 pm Finish Time: 12:45 pm	
- -											Sand: Yellow-orange, very fine grain unconsolidated, interbedded with moderate-well cemented very fine grain sandstone, dry	-
- - - - -								- 45			Sand: Dull yellow-orange, very fine grain, unconsolidated, interbedded with moderate-well cemented very fine grain	
- - - - -								- 55			sandstone, dry	
F											Total Dopth – 60 fact	-
								- 60 - 65 - 70 - 75 - 80			Total Depth = 60-feet	
\square	Sampling	Interval			S	Stratification is Ir oil Classification B						



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS		DEPTH ft BGS	ft)		SAMF	
				DEPTH (ft)	INTERVAL	REC (ft)	nscs
	Well Pad Material, crushed caliche mixed with sand, dry						
2 –	CALICHE, dull yellowish orange, dense-weathered, slightly moist		2.00				
	CALICHE, dui yellowish orange, dense-weathered, slightly moist				AIR	1.0	
4					Y		
6							
0							
					AIR	1.0	
8						1.0	
					Ĭ		
10	becomes light yellowish orange, weathered-dense, dry						
12							
					AIR	1.0	
14					Y		
	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry						
10	cemented very fine grained sandstone, dry	$ \Delta $					
16							
						10	
18					AIR	1.0	
					Ĭ		
20 —	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone,		20.00				SP
	matrix, interbedded with poor-moderately cemented very fine grained sandstone, dry						
22							
					AIR	1.0	
24					Y		
<u>NC</u>	<u>DTES:</u>						Page 1



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS			SAMP	LE	
ft BGS		ft BGS	(lt)	VAL	(#)	Ś	
			DEPTH (ft)	INTERVAL	REC (ft)	nscs	
				≤			
- 							
- 20							
				AIR	1.0		
-28					1.0		
-							
F				V I			
- 30	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche						
	Sandstone, no caliche						
-							
				AIR	1.0		
-							
-							
	BOREHOLE TERMINATED @ 35.0ft BGS	35.00					
- 36							
-							
38							
-							
- €—40							
40 							
-							
-44							
48							
44 							
й	NOTES:		I				
						Page	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS		DEPTH ft BGS	ft)		SAMP	
				DEPTH (ft)	INTERVAL	REC (ft)	USCS
	Well Pad Material, crushed caliche mixed with sand, dry				=		
2 –	CALICHE, dull yellowish orange, dense-weathered, slightly moist		2.00		AIR	1.0	
4					V		
6							
8					AIR	1.0	
-							
10							
10	becomes light yellowish orange, weathered-dense, dry						
12					AIR	1.0	
14					V		
	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry						
16							
						10	
18					AIR	1.0	
		\triangle 4			v		
20 -	SAND dull orange very fine grained unconsolidated with broken caliche in		20.00				SP
	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone, dry						
22							
					AIR	1.0	
24							
N	DTES:						Page 1 c



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS			SAMP	LE	
ft BGS		ft BGS	(lt)	VAL	(#)	Ś	
			DEPTH (ft)	INTERVAL	REC (ft)	uscs	
				≤			
- 26							
- 20							
_				AIR	1.0		
-28					1.0		
L							
-		-		I V			
- 30	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche						
_							
- 32							
- 52				AIR	1.0		
L							
- 34							
		35.00					
F	BOREHOLE TERMINATED @ 35.0ft BGS	35.00					
- 36							
-							
- 50							
_							
2-40							
42							
46							
8							
48							
í – I – – – – – – – – – – – – – – – – – –							
40 40 40 40 40 42 42 44 44 46 - 48 - 48	NOTES:					Deet	2 . 6 . 2
						raye	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	ť)		SAMP	
			DEPTH (ft)	INTERVAL	REC (ft)	nscs
	Well Pad Material, crushed caliche mixed with sand, slightly moist			=		
2 —	CALICHE, dull yellowish orange, dense-weathered, slightly moist	2.00		AIR	1.0	
4				Y		
6						
				AIR	1.0	
8	becomes light yellowish orange, weathered-dense, dry					
				¥		
10						
12				AIR	1.0	
	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry					
14				¥		
16						
				AIR	1.0	
18	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone,	18.00				SP
	dry			Ĭ		
20						
22					•	
~~				AIR	1.0	
24						
24				Ĭ		
N	OTES:					Page 1



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC

LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS			SAMP	LE	
ft BGS		ft BGS	H (#)	VAL	(#)	ပ	
			DEPTH (ft)	INTERVAL	REC (ft)	uscs	
- 26 				AIR	1.0		
28 	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche			V			
32 				AIR	1.0		
34 				V			
-	BOREHOLE TERMINATED @ 35.0ft BGS	35.00					
— 36 -							
- - 38							
-							
e — 40 −							
- - 							
- 							
-46							
-							
- 48 -							
- 40 - 42 - 42 - 44 - 44 - 46 - 48 48 	NOTES:	1	1	1		Page	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	(1		SAMP	
			DEPTH (ft)	INTERVAL	REC (ft)	NSCS
	Clayey SILT, grayish yellow brown, with broken caliche in matrix, slightly moist					ML
2 -	CALICHE, dull yellowish orange, dense-weathered, slightly moist	2.00		AIR	1.0	
8	becomes light yellowish orange, weathered-dense, dry			AIR	1.0	
10 12 14	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry			AIR	1.0	
16						
18 -	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone, dry	18.00		AIR	1.0	SP
22				AIR	1.0	
24				Y		
N	OTES:	 				Page 1 c



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC

LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS			LE		
ft BGS		ft BGS	(#)	VAL	(t)	S	
			DEPTH (ft)	INTERVAL	REC (ft)	nscs	
- 26 - -				AIR	1.0		
28 30	becomes dull yellowish orange, moderate-well cemented very fine grained sandstone, no caliche			Y			
- - 				AIR	1.0		
- 34 		35.00		Y			
- 	BOREHOLE TERMINATED @ 35.0ft BGS						
- 38 							
40 							
- 46							
- 44 - 46 - 46 - 48 48							
	NOTES:					Page	2 of 2



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	£		SAMP	
		 	DEPTH (ft)	INTERVAL	REC (ft)	nscs
	Clayey SILT, grayish yellow brown, with broken caliche in matrix, slightly moist			_		ML
2 -	CALICHE, dull yellowish orange, dense-weathered, slightly moist	2.00		AIR	1.0	
6	becomes light yellowish orange, weathered-dense, dry			AIR	1.0	
10				<u> </u>		
14	becomes pale yellow, weathered-dense, interbedded with poor-moderately cemented very fine grained sandstone, dry			AIR	1.0	
16						
18 -	SAND, dull orange, very fine grained, unconsolidated with broken caliche in matrix, interbedded with poor-moderately cemented very fine grained sandstone, dry	18.00		AIR	1.0	SP
22						
24				AIR	1.0	
<u>N</u>	OTES:			1		Page 1 c



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC

LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DE ft E	DEPTH ft BGS	SAMPLE				
				DEPTH (ft)	INTERVAL	REC (ft)	USCS	
26								
					AIR	1.0		
28								
30					Ĭ.			
32					AIR	1.0		
34					Y			
36								
38					AIR	1.0		
40					Y			
42					AIR	1.0		
44								
46								
48					AIR	1.0		
					Y			
NOTES:	μ [*] .	••		I	1	L	<u> </u>	of



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

EPTH BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS		SAMPLE			
			1 000	DEPTH (ft)	INTERVAL	REC (ft)	nscs
					_		
2					AIR	1.0	
4					V		
6							
8					AIR	1.0	
0							
2							
					AIR	1.0	
4							
•						_	
<u>_</u>							
6						-	
_					AIR	1.0	
8							
					¥		
0							
2					AIR	1.0	
4					¥		
					1		



PROJECT NAME: CVU # 266 PROJECT NUMBER: 074635 CLIENT: CEMC LOCATION: Lea County, New Mexico

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS			SAMP	MPLE		
ft BGS		ft BGS	(#)	/AL	(H)	S		
			DEPTH (ft)	INTERVAL	REC (ft)	nscs		
- 				AIR	1.0			
- 78 - - - - 80 -	becomes bright yellowish brown, dry			Y				
- - - 82 -				AIR	1.0			
84 - - -				Y				
				AIR	1.0			
-	BOREHOLE TERMINATED @ 90.0ft BGS	90.00		Y				
90								
96								
94								
	NOTES:		<u> </u>			Page	4 of 4	

Appendix D Soil Laboratory Analytical Reports

CARDINAL Laboratories

January 24, 2011

CINDY CRAIN CRAIN ENVIRONMENTAL 2925 E. 17TH STREET ODESSA, TX 79761

RE: CVU #266

Enclosed are the results of analyses for samples received by the laboratory on 01/19/11 14:19.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keine

Celey D. Keene Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 1 (1') (H100143-01)

Chloride, SM4500CI-B	mg	/kg	Analyzed By: LR						,
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3160	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 1 (2') (H100143-02)

Chloride, SM4500CI-B	mg,	/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	912	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (1') (H100143-03)

Chloride, SM4500CI-B	mg	/kg	Analyze						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (2') (H100143-04)

Chloride, SM4500Cl-B	mg	/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1810	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (3') (H100143-05)

Chloride, SM4500CI-B	mg/kg		Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1520	16.0	01/21/2011	ND	432	108	400	0.00	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 3 (1') (H100143-06)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: LR					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1730	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 3 (2') (H100143-07)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: LR					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 3 (3') (H100143-08)

Chloride, SM4500CI-B mg/kg			Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1410	16.0	01/21/2011	ND	432	108	400	0,00	

Sample ID: SS - 4 (1') (H100143-09)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: LR					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8000	16.0	01/21/2011	ND	432	108	400	0.00 .	

Sample ID: SS - 4 (2') (H100143-10)

Chloride, SM4500CI-B	mg	/kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4880	16.0	01/21/2011	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 5 (1') (H100143-11)

Chloride, SM4500CI-B	mg,	'kg	Analyzed By: LR						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 5 (2') (H100143-12)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: LR					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5440	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 5 (3') (H100143-13)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5360	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 6 (1') (H100143-14)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 6 (2') (H100143-15)

Chloride, SM4500CI-B	mg	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6160	16.0	01/21/2011	ND	432	108	400	0,00	

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Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/18/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 6 (3') (H100143-16)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 1 (6") (H100143-17)

Chloride, SM4500CI-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	70400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 2 (6") (H100143-18)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	19200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 3 (6") (H100143-19)

Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	46400	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 4 (6") (H100143-20)

Chloride, SM4500Cl-B	mg/	/kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	57600	16.0	01/21/2011	ND	432	108	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	01/19/2011	Sampling Date:	01/19/2011
Reported:	01/24/2011	Sampling Type:	Soil
Project Name:	CVU #266	Sampling Condition:	Cool & Intact
Project Number:	0111-002	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

Sample ID: SS - 5 (6") (H100143-21)

Chloride, SM4500CI-B	mg,	'kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	51200	16.0	01/21/2011	ND	432	108	400	0.00	

Sample ID: SS - 6 (6") (H100143-22)

Chloride, SM4500CI-B	mg/	'kg	Analyze	d By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	42400	16.0	01/21/2011	ND	432	108	400	0.00	

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Celevit Keine

Celey D. Keene, Lab Director/Quality Manager



Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager

Page 7 of 10

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

N N

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

	(575) 393-2326 FAX (575) 393-2476	X (575) 393-24	76												ſ
Company Name:	Frain Env	Environmenta	tal			81	BILL TO			AN	ANALYSIS	REQUEST			-
Project Manager:	Cindu	ein			P.O. <u>#</u>	4									
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Project #: 0//	1-002	Project Owner:	Che	NOON	City:		۲.								
Project Name: (CVU #	266			State:	0	Zip:	5							
Project Location:	Lea Co.	NW			Phone #:										
Sampler Name:	1				Fax#:			7-							-
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Page 8 of 10

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST	ANALYSIS REQUEST																		l Yes ⊑ No Add'l Phone #: I Yes ⊑ No Add'l Fax #:	; (Ly. crained grail.com		s to 575-393-2476	Å
CHAIN-OF-C	OJ TTIS	P.O. #:	Company:	Attn:	Address: WV	city:	State: Zip:	#			 < □ 0 < □ 1 < □ 1 <	1	12:40 [12:50 1	13:00	1 07:30	o terr, staal be landted to the photon band by the specific for the	ಗುವ ಖ್ಯು ದಿಂಗದೂರು.ನೇಗ ಎಂದಿ ದ್ರುತ್ಯ ಹೆಗೆ ಎಂದುವಿಕೆಗಳು ಈ ಹಾಗಳಿಗಳು ನಗಗಳ ಹಾಗ್ರಿಕಿಕವನೇಕಿ ಗುವ ಖ್ಯು ದಿಂಗದೂರು.ನಗಗಳು ಮತ್ತುಗಳುತ್ತಿರು. ನಗಗಳ ಗುತ್ತ ಮರಿನನಗಗಳು ತಿಳಿಗರ ಬಿದ್ದಾಗಿಗಳು ಸಂತರ್ಣದೇಶ ಗುತ್ತದೇಶ ಗಿಂತನರಗಳ ನಗ ನಗಗಳು ಕಾರಿಗಳು	Phone Result: 0	NUNNAL REMARKS: E,	Cind		+ Cardinal cannot accept verbal chamges. Please fax written changes to 575-393-2476	C
ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476	ain Environmental	V Crain	Flast 1 2th St	State: T.X. Zip: 79761	-4792 Fax# 432-272-	12 Project Owner CheVr012	U # 266	a, co, W.N.	il Guardiesi	Sample Contrinerc Recurdencerc Strewatere Stew		6 (2)		(1) 2.	6 (23) (91)	-a (3) - 6/	The state of the	ಾರ್ಯ್ ಸರ್ಮಾರ್ಥಿಕರಿಂದ ಸಂಭಾನಕ್ಕೆ ಹುಳು ಹಿಡಿದಿಗಳು ಸಂಗಾರ ಸ್ಥಾನ ಸಂಭಾನಕ್ಕೆ ಸಂಭಾನಕ್ಕೆ ಸಂಭಾನಕ್ಕೆ ಸುದ್ದಿ ಸಂಭಾತ ಸಂಭಾನಕರಿಗಳು ಕುರಿತುವುದು ಕಾರ್ಣಿಕ್ಕೆ ಗ್ರಾಮಕ್ಕೆ ಸಂಭಾನಕರ ಸಂಕರ್ಣಿಕಾ ಸುರ್ದಿತಿ ಸುರ್ದಿ ಸಂಭಾನಕರ ಸುರ್ದಿತ್ರಿ ಸಂಭಾತದಿಂದ ಸಂಘಟನಕರು ಗ್ರಾಮಕ್ಕಿ ಸಂಭಾನಕರಿಗೆ ಸಿಗೆಗಳು ಸೇವಿ ಸಿಗೆಗಳಿಂದ ಪ್ರಾಮಕ್ಕಿಗಳು ಸಂಭಾನಕರ ಸಂಭಾನಕರಿಗೆ ಸುರ್ದಿತ್ರಿ ಸಿಗೆ	Received By:	The ment of Williams		cool match	† Cardinal cannot accept 正子	
ARDINA 101 Eas	Company Name: C_{GC}	Project Manager Cit	Address: 29 25	city: Jokesso	##432-5	Project #. 0/1/-00	Project Name: CV (Project Location: A 20	Sampler Name: ///	Lab I.D.	UTANZ SS		1 N N				PERSEA AND FEET LOOK AND PAIRSAN.	וו איניטר אינוני איניין איניטראין איניטראין איניטראין איניטראין איניטראין איניטראין איניטראין איניטראין איניטר איניאראבער איניטראיזייטראיזעראיינעראיינעראיינעראין איניטראין איניעראין איניאראבער איניטראיינעראייזעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינעראיינ	Relinguished BV	Windly She	Veningaistica Dr.	Delivered Bv: (Circle One) Sampler - UPS - Bus - Other:	FORM-006 Revision 1.0	

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Analytical Report 483548

for

Conestoga Rovers & Associates

Project Manager: Chris Knight

CEMC- CVU#226

074635

28-APR-14

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054) New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



28-APR-14

Project Manager: **Chris Knight Conestoga Rovers & Associates** 2135 S Loop 250 W Midland, TX 79703

Reference: XENCO Report No(s): **483548 CEMC- CVU#226** Project Address: Lea County, NM

Chris Knight:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 483548. 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. 483548 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.

Ams boah

 Kelsey Brooks

 Project Manager

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Sample Cross Reference 483548



Conestoga Rovers & Associates, Midland, TX

CEMC- CVU#226

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
074635-JMF-SB11	S	04-14-14 12:00	- 0 ft	483548-001
074635-JMF-SB11	S	04-14-14 12:15	- 5 ft	483548-002
074635-JMF-SB11	S	04-14-14 12:20	- 10 ft	483548-003
074635-JMF-SB11	S	04-14-14 12:25	- 20 ft	483548-004
074635-JMF-SB11	S	04-14-14 12:30	- 40 ft	483548-005
074635-JMF-SB11	S	04-14-14 12:35	- 60 ft	483548-006
074635-JMF-SB10	S	04-14-14 13:10	- 0 ft	483548-007
074635-JMF-SB10	S	04-14-14 13:15	- 5 ft	483548-008
074635-JMF-SB10	S	04-14-14 13:25	- 15 ft	483548-009
074635-JMF-SB10	S	04-14-14 13:30	- 25 ft	483548-010
074635-JMF-SB10	S	04-14-14 13:35	- 35 ft	483548-011
074635-JMF-SB9	S	04-14-14 14:50	- 0 ft	483548-012
074635-JMF-SB9	S	04-14-14 14:55	- 5 ft	483548-013
074635-JMF-SB9	S	04-14-14 15:00	- 10 ft	483548-014
074635-JMF-SB9	S	04-14-14 15:05	- 15 ft	483548-015
074635-JMF-SB9	S	04-14-14 15:10	- 25 ft	483548-016
074635-JMF-SB9	S	04-14-14 15:15	- 35 ft	483548-017
074635-JMF-SB10	S	04-14-14 14:25	- 60 ft	483548-018
074635-JMF-SB8	S	04-14-14 15:30	- 0 ft	483548-019
074635-JMF-SB8	S	04-14-14 15:35	- 5 ft	483548-020
074635-JMF-SB8	S	04-14-14 15:40	- 10 ft	483548-021
074635-JMF-SB8	S	04-14-14 15:45	- 15 ft	483548-022
074635-JMF-SB8	S	04-14-14 15:50	- 25 ft	483548-023
074635-JMF-SB8	S	04-14-14 15:55	- 35 ft	483548-024
074635-JMF-SB6	S	04-14-14 16:10	- 0 ft	483548-025
074635-JMF-SB6	S	04-14-14 16:15	- 5 ft	483548-026
074635-JMF-SB6	S	04-14-14 16:20	- 10 ft	483548-027
074635-JMF-SB6	S	04-14-14 16:25	- 15 ft	483548-028
074635-JMF-SB6	S	04-14-14 16:30	- 25 ft	483548-029
074635-JMF-SB6	S	04-14-14 16:35	- 35 ft	483548-030
074635-JMF-SB7	S	04-15-14 10:00	- 0 ft	483548-031
074635-JMF-SB7	S	04-15-14 10:05	- 5 ft	483548-032
074635-JMF-SB7	S	04-15-14 10:10	- 10 ft	483548-033
074635-JMF-SB7	S	04-15-14 10:15	- 15 ft	483548-034
074635-JMF-SB7	S	04-15-14 10:20	- 25 ft	483548-035
074635-JMF-SB7	S	04-15-14 10:25	- 35 ft	483548-036
074635-JMF-SB4	S	04-15-14 10:45	- 0 ft	483548-037
074635-JMF-SB4	S	04-15-14 10:50	- 5 ft	483548-038
074635-JMF-SB4	S	04-15-14 11:00	- 15 ft	483548-039
074635-JMF-SB4	S	04-15-14 11:05	- 35 ft	483548-040
074635-JMF-SB5	S	04-15-14 11:25	- 0 ft	483548-041
074635-JMF-SB5	S	04-15-14 11:30	- 5 ft	483548-042
074635-JMF-SB5	S	04-15-14 11:35	- 10 ft	483548-043



Sample Cross Reference 483548



Conestoga Rovers & Associates, Midland, TX

CEMC- CVU#226

S	04-15-14 11:40	- 15 ft	483548-044
S	04-15-14 11:45	- 25 ft	483548-045
S	04-15-14 11:50	- 35 ft	483548-046
S	04-15-14 12:30	- 0 ft	483548-047
S	04-15-14 12:35	- 5 ft	483548-048
S	04-15-14 12:45	- 15 ft	483548-049
S	04-15-14 12:55	- 35 ft	483548-050
S	04-15-14 13:15	- 0 ft	483548-051
S	04-15-14 13:20	- 5 ft	483548-052
S	04-15-14 13:25	- 10 ft	483548-053
S	04-15-14 13:30	- 15 ft	483548-054
S	04-15-14 13:35	- 25 ft	483548-055
S	04-15-14 13:40	- 35 ft	483548-056
S	04-15-14 14:05	- 0 ft	483548-057
S	04-15-14 14:10	- 5 ft	483548-058
S	04-15-14 14:20	- 15 ft	483548-059
S	04-15-14 14:35	- 35 ft	483548-060
S	04-15-14 14:40	- 50 ft	483548-061
S	04-15-14 14:45	- 60 ft	483548-062
	S S S S S S S S S S S S S S S S S S	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$



CASE NARRATIVE



Client Name: Conestoga Rovers & Associates Project Name: CEMC- CVU#226

 Project ID:
 074635

 Work Order Number(s):
 483548

Report Date: 28-APR-14 Date Received: 04/17/2014

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-939306 Inorganic Anions by EPA 300/300.1 Chloride recovered above QC limits in the Matrix Spike. Samples affected are: 483548-033, -047, -032, -043, -042, -030, -031, -041, -029, -035, -037, -044, -036, -045, -046, -034, -038, -039, -040. The Laboratory Control Sample for Chloride is within laboratory Control Limits



Project Id: 074635 Contact: Chris Knight Project Location: Lea County, NM

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location: Lea County, NM								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	483548-001 074635-JMF-SB11 0 ft		483548-002 074635-JMF-SB11 5 ft		483548-003 074635-JMF-SB11 10 ft		483548-004 074635-JMF-SB11 20 ft		483548-005 074635-JMF-SB11 40 ft		483548-006 074635-JMF-SB11 60 ft	
Amaluaia Degranated	Field Id:												
Analysis Requested	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	<i>pled:</i> Apr-14-14 12:00		Apr-14-14 12:15		Apr-14-14 12:20		Apr-14-14 12:25		Apr-14-14 12:30		Apr-14-14 12:35	
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30	
	Analyzed:	Apr-22-14	Apr-22-14 02:51		Apr-22-14 03:14)3:37	Apr-22-14 04:45		Apr-22-14 05:07		Apr-22-14 05:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		7360	211	1150	42.9	169	10.9	183	10.7	7.57	2.09	7.72	2.11
Percent Moisture	Extracted:												
	Analyzed:	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.23	1.00	6.76	1.00	8.20	1.00	6.42	1.00	4.52	1.00	5.32	1.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Huns Roah

Kelsey Brooks Project Manager



Project Id: 074635 Contact: Chris Knight Project Location: Lea County, NM

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location. Lea County, NW														
								Project Ma	nager:	Kelsey Brook	5			
	Lab Id:	483548-0	07	483548-0	08	483548-0	09	483548-0	010	483548-0	11	483548-0	012	
Analysis Requested	Field Id:	074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB10		074635-JMF-SB9		
Analysis Kequesieu	Depth:	0 ft		5 ft		15 ft		25 ft		35 ft		0 ft		
	Matrix:	SOIL	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-14-14 13:10		Apr-14-14 13:15		Apr-14-14 13:25		Apr-14-14 13:30		Apr-14-14 13:35		Apr-14-14 14:50		
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		
	Analyzed:	Apr-22-14	Apr-22-14 05:53		Apr-22-14 06:15		08:31	Apr-22-14 09:57		Apr-22-14 10:19		Apr-22-14 10:42		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
Chloride		4610	102	851	108	135	11.3	746	42.4	1580	106	17.8	4.25	
Percent Moisture	Extracted:													
	Analyzed:	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		1.56	1.00	7.33	1.00	11.3	1.00	5.77	1.00	5.62	1.00	5.89	1.00	

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Huns Roah

Kelsey Brooks Project Manager



Project Id: 074635 Contact: Chris Knight Project Location: Lea County, NM

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location: Lea County, NM								-							
								Project Ma	nager:	Kelsey Brook	s				
	Lab Id:	483548-013		483548-014		483548-015		483548-016		483548-017		483548-018			
Amphain Dominated	Field Id:	074635-JMF-SB9		074635-JMF	-SB9	074635-JMF-SB9		074635-JMF-SB9		074635-JMF-SB9		074635-JMF-SB10			
Analysis Requested	Depth:	5 ft		10 ft		15 ft		25 ft		35 ft		60 ft			
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL			
	Sampled:	Apr-14-14 14:55		Apr-14-14 15:00		Apr-14-14 15:05		Apr-14-14 15:10		Apr-14-14 15:15		Apr-14-14 14:25			
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30			
	Analyzed:	Apr-22-14	Apr-22-14 11:05		1:27	Apr-22-14 14:51		Apr-22-14 15:14		Apr-22-14 15:37		Apr-22-14 15:59			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		38.1	4.41	526	10.8	183	11.0	17.8	2.10	18.3	2.07	631	14.6		
Percent Moisture	Extracted:														
	Analyzed:	Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25		Apr-18-14 12:25	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		9.21	1.00	7.82	1.00	9.30	1.00	4.59	1.00	3.57	1.00	31.4	1.00		

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Huns Roah

Kelsey Brooks Project Manager

Page 8 of 32


Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

roject Location: Lea County, NM								-					
								Project Ma	nager:	Kelsey Brook	5		
	Lab Id:	483548-0)19	483548-0	20	483548-0	21	483548-0)22	483548-0	023	483548-0	024
Analysis Doguested	Field Id:	074635-JMI	F-SB8	074635-JMF	-SB8	074635-JMF	-SB8	074635-JMI	F-SB8	074635-JMI	F-SB8	074635-JMH	F-SB8
Analysis Requested	Depth:	0 ft		5 ft		10 ft		15 ft		25 ft		35 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-14-14	15:30	Apr-14-14 1	5:35	Apr-14-14 1	5:40	Apr-14-14	15:45	Apr-14-14	15:50	Apr-14-14	15:55
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	10:30	Apr-21-14 1	0:30	Apr-21-14 1	0:30	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30
	Analyzed:	Apr-22-14	16:22	Apr-22-14 17:07		Apr-22-14 1	7:30	Apr-22-14	17:52	Apr-22-14	18:15	Apr-22-14	19:23
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		29600	1020	3220	113	2220	109	1430	41.7	133	4.34	32.2	2.21
Percent Moisture	Extracted:												
	Analyzed:	Apr-18-14	12:25	Apr-18-14 1	2:25	Apr-17-14 1	2:25	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14	12:25
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.40	1.00	11.2	1.00	8.05	1.00	4.00	1.00	7.82	1.00	9.39	1.00

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Huns Roah

Kelsey Brooks Project Manager



Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

Toject Location: Lea County, NM									-				
								Project Ma	nager:	Kelsey Brook	5		
	Lab Id:	483548-0	25	483548-0	26	483548-0	27	483548-0	28	483548-0	29	483548-0	30
Analysis Requested	Field Id:	074635-JMI	F-SB6	074635-JMF	-SB6	074635-JMF	-SB6	074635-JMH	F-SB6	074635-JMI	-SB6	074635-JMH	F-SB6
Analysis Kequesiea	Depth:	0 ft	0 ft		5 ft		10 ft			25 ft		35 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-14-14	16:10	Apr-14-14 1	6:15	Apr-14-14 1	6:20	Apr-14-14	16:25	Apr-14-14	16:30	Apr-14-14	16:35
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	10:30	Apr-21-14 1	0:30	Apr-21-14 1	0:30	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30
	Analyzed:	Apr-22-14	19:46	Apr-22-14 20:08		Apr-22-14 2	20:31	Apr-22-14 2	20:54	Apr-23-14	12:11	Apr-23-14	12:56
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		15500	407	1630	106	1070	41.9	2330	108	269	11.0	1410	42.9
Percent Moisture	Extracted:												
	Analyzed:	Apr-17-14	12:25	Apr-17-14 1	2:25	Apr-17-14 1	2:25	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14	12:25
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		1.82	1.00	5.79	1.00	4.64	1.00	7.83	1.00	9.14	1.00	6.68	1.00

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Kelsey Brooks Project Manager



Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

roject Location: Lea County, NM								-					
								Project Ma	nager:	Kelsey Brook	S		
	Lab Id:	483548-0	31	483548-0	32	483548-0	33	483548-0)34	483548-0	35	483548-0)36
An alugia Deguested	Field Id:	074635-JMF	-SB7	074635-JMF	-SB7	074635-JMF	-SB7	074635-JMI	F-SB7	074635-JMI	F-SB7	074635-JMI	F-SB7
Analysis Requested	Depth:	0 ft		5 ft		10 ft		15 ft		25 ft		35 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14 1	0:00	Apr-15-14 1	0:05	Apr-15-14 1	0:10	Apr-15-14	10:15	Apr-15-14	10:20	Apr-15-14	10:25
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14 1	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 10:30		10:30	Apr-21-14 10:30		Apr-21-14	10:30
	Analyzed:	Apr-23-14 1	3:19	Apr-23-14 13:42		Apr-23-14 1	4:04	Apr-23-14	14:27	Apr-23-14	15:35	Apr-23-14	15:58
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9000	420	3430	113	3950	110	715	21.6	386	10.6	388	10.5
Percent Moisture	Extracted:												
	Analyzed:	Apr-17-14 1	2:25	Apr-17-14 1	2:25	Apr-17-14 1	2:25	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14	12:25
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.77	1.00	11.4	1.00	9.16	1.00	7.36	1.00	5.48	1.00	5.12	1.00

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Huns Boah

Kelsey Brooks Project Manager



Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

roject Location: Lea County, NM								-					
								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	483548-0)37	483548-0	38	483548-0	39	483548-0	040	483548-0	41	483548-0	42
Analysis Paguested	Field Id:	074635-JMI	F-SB4	074635-JMF	-SB4	074635-JMF	F-SB4	074635-JMI	F-SB4	074635-JMH	-SB5	074635-JMH	-SB5
Analysis Requested	Depth:	0 ft		5 ft		15 ft		35 ft		0 ft		5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	10:45	Apr-15-14 1	10:50	Apr-15-14 1	11:00	Apr-15-14	11:05	Apr-15-14	11:25	Apr-15-14	11:30
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30
	Analyzed:	Apr-23-14	16:21	Apr-23-14 16:43		Apr-23-14 1	17:06	Apr-23-14	18:14	Apr-23-14	18:37	Apr-23-14	19:00
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		393	10.0	159	10.3	17.4	2.08	12.2	2.14	760	42.0	173	10.4
Percent Moisture	Extracted:												
	Analyzed:	Apr-17-14	12:25	Apr-17-14	12:25	Apr-17-14 1	12:25	Apr-17-14	12:25	Apr-21-14	13:00	Apr-21-14	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		ND	1.00	2.69	1.00	3.80	1.00	6.36	1.00	4.65	1.00	4.19	1.00

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Kelsey Brooks Project Manager



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Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

roject Location: Lea County, NM								-					
								Project Ma	nager:	Kelsey Brooks	8		
	Lab Id:	483548-0	43	483548-0	44	483548-0	45	483548-0)46	483548-0	47	483548-0	48
Amphasia Dogwootod	Field Id:	074635-JMI	F-SB5	074635-JMF	-SB5	074635-JMF	-SB5	074635-JMI	F-SB5	074635-JMF	-SB3	074635-JMF	-SB3
Analysis Requested	Depth:	10 ft		15 ft		25 ft		35 ft		0 ft		5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	11:35	Apr-15-14 1	1:40	Apr-15-14 1	11:45	Apr-15-14	11:50	Apr-15-14 1	2:30	Apr-15-14 1	2:35
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	10:30	Apr-21-14 1	0:30	Apr-21-14 1	10:30	Apr-21-14	10:30	Apr-21-14 1	0:30	Apr-24-14 1	0:30
	Analyzed:	Apr-23-14	20:08	Apr-23-14 20:31		Apr-23-14 2	20:53	Apr-23-14	21:16	Apr-23-14 2	21:39	Apr-25-14 ()9:54
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		913	43.3	185	10.8	32.7	4.69	22.0	3.99	6390	204	433	21.3
Percent Moisture	Extracted:												
	Analyzed:	Apr-21-14	13:00	Apr-21-14 1	3:00	Apr-21-14 1	13:00	Apr-21-14	13:00	Apr-21-14	3:00	Apr-21-14	3:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.67	1.00	7.20	1.00	14.7	1.00	49.9	1.00	1.81	1.00	6.13	1.00

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Kelsey Brooks Project Manager



Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

roject Location: Lea County, NM								-					
								Project Ma	nager:	Kelsey Brook	3		
	Lab Id:	483548-0	949	483548-0	050	483548-0	51	483548-0	52	483548-0	53	483548-0)54
Analysis Degreested	Field Id:	074635-JMI	F-SB3	074635-JMH	F-SB3	074635-JMF	-SB2	074635-JMI	F-SB2	074635-JMI	-SB2	074635-JMI	F-SB2
Analysis Requested	Depth:	15 ft		35 ft		0 ft		5 ft		10 ft		15 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	12:45	Apr-15-14	12:55	Apr-15-14 1	3:15	Apr-15-14	13:20	Apr-15-14	13:25	Apr-15-14	13:30
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14 1	0:30	Apr-21-14	10:30	Apr-21-14	10:30	Apr-21-14	10:30
	Analyzed:	Apr-23-14	23:55	Apr-24-14 (00:40	Apr-24-14 0	1:03	Apr-24-14 (01:26	Apr-24-14 (01:48	Apr-24-14 (02:11
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		16.3	2.08	6.73	2.16	18300	405	3250	108	3080	107	685	20.9
Percent Moisture	Extracted:												
	Analyzed:	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14 1	3:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3.71	1.00	7.51	1.00	1.18	1.00	7.47	1.00	6.46	1.00	4.52	1.00

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Kelsey Brooks Project Manager



Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am

Report Date: 28-APR-14

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								Project Mai	nager:	Kelsey Brooks	5		
	Lab Id:	483548-0	483548-055		483548-056		57	483548-058		483548-059		483548-0	60
Analysis Paguested	Field Id:	074635-JMI	074635-JMF-SB2		074635-JMF-SB2 35 ft		S-SB1	074635-JMF-SB1		074635-JMH	-SB1	074635-JMF	-SB1
Analysis Requested	Depth:	25 ft	25 ft				0 ft			15 ft		35 ft	
	Matrix:	SOIL	SOIL			SOIL		SOIL		SOIL		SOIL	
	Sampled:	Apr-15-14	13:35	Apr-15-14 1	13:40	Apr-15-14 1	4:05	Apr-15-14	14:10	Apr-15-14	14:20	Apr-15-14 1	14:35
Inorganic Anions by EPA 300/300.1	Extracted:	Apr-21-14	Apr-21-14 10:30		10:30	Apr-21-14 1	0:30	Apr-21-14 10:30		Apr-21-14 10:30		Apr-21-14 1	10:30
	Analyzed:	Apr-24-14	03:19	Apr-24-14 03:42		Apr-24-14 0	04:05	Apr-24-14 (04:27	Apr-24-14 (04:50	Apr-24-14 ()5:35
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		34.9	2.05	16.2	2.12	7600	404	1310	42.3	976	41.2	2760	106
Percent Moisture	Extracted:												
	Analyzed:	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14 1	3:00	Apr-21-14	13:00	Apr-21-14	13:00	Apr-21-14 1	13:00
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		2.49	1.00	5.54	1.00	1.05	1.00	5.40	1.00	3.02	1.00	6.05	1.00

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Kelsey Brooks Project Manager



Percent Moisture

Project Id: 074635

Contact: Chris Knight

Certificate of Analysis Summary 483548

Conestoga Rovers & Associates, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Thu Apr-17-14 10:20 am Report Date: 28-APR-14

Project Location: Lea County, NM Project Manager: Kelsey Brooks Lab Id: 483548-061 483548-062 Field Id: 074635-JMF-SB1 074635-JMF-SB1 Analysis Requested Depth: 50 ft 60 ft Matrix: SOIL SOIL Sampled: Apr-15-14 14:40 Apr-15-14 14:45 Inorganic Anions by EPA 300/300.1 Extracted: Apr-21-14 10:30 Apr-21-14 10:30 Apr-24-14 05:58 Apr-24-14 06:21 Analyzed: Units/RL: mg/kg RL mg/kg RL 4.32 4.24 Chloride 143 95.7 **Percent Moisture** Extracted: Apr-21-14 13:00 Analyzed: Apr-21-14 13:00 Units/RL: % RL % RL

5.64

1.00

1.00

7.37

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Kms Boah

Kelsey Brooks Project Manager

Page 16 of 32



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

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6017 Financial Drive, Norcross, GA 30071
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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



BS / BSD Recoveries



Project Name: CEMC- CVU#226

Work Order #: 483548	Project ID: 074635											
Analyst: AMB	D	ate Prepar	red: 04/21/201	14			Date A	nalyzed: (04/21/2014			
Lab Batch ID: 939208 Sample: 654348-1-E	BKS	Batcl	h #: 1					Matrix:	Solid			
Units: mg/kg		BLAN	K/BLANK	SPIKE / 1	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY		
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	<2.00	50.0	47.0	94	50.0	47.1	94	0	80-120	20		
Analyst: AMB	D	Date Prepared: 04/21/2014 Date Analyzed: 04/22/2014										
Lab Batch ID: 939281 Sample: 654349-1-H	BKS	KS Batch #: 1 Matrix: Solid										
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY		
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	<2.00	50.0	48.1	96	50.0	45.7	91	5	80-120	20		
Analyst: AMB	D	ate Prepar	red: 04/21/201	4	+		Date A	nalyzed: (04/23/2014	ł	·'	
Lab Batch ID: 939306 Sample: 654350-1-H	BKS	Batcl	h #: 1					Matrix:	Solid			
Units: mg/kg		BLAN	K/BLANK	SPIKE / 2	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY		
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
1 mary tes												

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



BS / BSD Recoveries



Project Name: CEMC- CVU#226

Work Order #: 483548							Proj	ect ID:	074635				
Analyst: AMB	D	Date Prepared: 04/21/2014 Date Analyzed: 04/23/2014											
Lab Batch ID: 939364 Sample: 654351-1-1	BKS	S Batch #: 1 Matrix: Solid											
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Chloride	<2.00	50.0	49.5	99	50.0	48.7	97	2	80-120	20			
Analyst: AMB	D	ate Prepar	red: 04/24/20	14			Date A	nalyzed: (04/25/2014				
Lab Batch ID: 939494 Sample: 654464-1-1	BKS	Batc	h #: 1					Matrix:	Solid				
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK S	SPIKE DUP	LICATE	RECOV	ERY STUI	DY			
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Chloride	<2.00	50.0	52.0	104	50.0	51.8	104	0	80-120	20			

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

Project Name: CEMC- CVU#226



Work Order #: 483548							
Lab Batch #: 939208				Proj	ect ID: C	074635	
Date Analyzed: 04/21/2014	Date Prepared	: 04/2	1/2014	Α	nalyst: A	AMB	
QC- Sample ID: 483546-001 S	Batch #	: 1		I	Matrix: S	Soil	
Reporting Units: mg/kg	Ν	IAT I	RIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300 Analytes	Paro Sam Res [A	ple ult	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	4.5	6	50.4	53.0	96	80-120	<u> </u>
Lab Batch #: 939208		-					<u> </u>
Date Analyzed: 04/22/2014	Date Prepared	: 04/2	1/2014	А	nalyst: A	AMB	
QC- Sample ID: 483546-011 S	Batch #			1	Matrix: S	Soil	
Reporting Units: mg/kg	Ν	1ATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300	Paro Sam Res [A	ple ult	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes		-					
Chloride Lab Batch #: 939281	4.3	8	50.8	51.2	92	80-120	
	Data Duan and	. 04/2	1/2014			MD	
Date Analyzed: 04/22/2014 QC- Sample ID: 483548-009 S	Date Prepared Batch #		1/2014		Analyst: A Matrix: S		
Reporting Units: mg/kg	N	1ATF	RIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300 Analytes	Par Sam Res [A	ple ult	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	13	5	282	415	99	80-120	1
Lab Batch #: 939281				<u> </u>			1
Date Analyzed: 04/22/2014	Date Prepared	: 04/2	1/2014	А	nalyst: A	AMB	
QC- Sample ID: 483548-019 S	Batch #	: 1		I	Matrix: S	Soil	
Reporting Units: mg/kg	Ν	1ATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300	Paro Sam Res [A	ple ult	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	296	00	25600	54200	96	80-120	1
L				1		1	<u> </u>

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

XENCO
Laboratories

Project Name: CEMC- CVU#226



Work Order #: 483548						
Lab Batch #: 939306			Proj	ect ID: ⁰	074635	
Date Analyzed: 04/23/2014	Date Prepared: 04	/21/2014	A	analyst: A	AMB	
QC- Sample ID: 483548-029 S	Batch #:	1	I	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	269	275	753	176	80-120	X
Lab Batch #: 939306			100		00 120	
Date Analyzed: 04/23/2014	Date Prepared: 04	/21/2014	А	analyst: A	AMB	
QC- Sample ID: 483548-039 S	Batch #:	1		Matrix: S		
Reporting Units: mg/kg	MA	TRIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes	[A]	[B]				
Chloride	17.4	52.0	62.3	86	80-120	1
Lab Batch #: 939364						
Date Analyzed: 04/24/2014	Date Prepared: 04	/21/2014	Α	analyst: A	AMB	
QC- Sample ID: 483548-049 S	Batch #:	1	I	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	16.3	51.9	67.8	99	80-120	1
Lab Batch #: 939364		1				
Date Analyzed: 04/24/2014	Date Prepared: 04	/21/2014	A	analyst: A	AMB	
QC- Sample ID: 483548-059 S	Batch #:	1	I	Matrix: S	Soil	
Reporting Units: mg/kg	MA	TRIX / MA	TRIX SPIKE	RECO	VERY STU	JDY
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	976	1030	2130	112	80-120	
L		1	1		1	1

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes





Project Name: CEMC- CVU#226

Work Order #: 483548				
Lab Batch #: 939494		Project	t ID: ⁰⁷⁴⁶³⁵	
Date Analyzed: 04/25/2014	Date Prepared: 04/24/2014	Ana	alyst: AMB	
QC- Sample ID: 483806-002 S	Batch #: 1	Ma	atrix: Soil	
Reporting Units: mg/kg	MATRIX / MA	ATRIX SPIKE R	RECOVERY STU	UDY
Inorganic Anions by EPA 300	Parent Sample Spike Result Added		%R Control [D] %R	Flag
Analytes	[A] [B]	[0]		
Chloride	228 583	814	101 80-120	

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes



Work Order #: 483548



Project Name: CEMC- CVU#226

QC- Sample ID: 483548-001 D	Date Prepare Batch		Ana Mat	lyst: WRU trix: Soil	D: ⁰⁷⁴⁶³⁵	
Reporting Units: %		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		5.23	5.22	0	20	
Lab Batch #: 938962 Date Analyzed: 04/18/2014 12:25 QC- Sample ID: 483548-011 D	Date Prepare Batch	e d: 04/18/2014		lyst: WRU t rix: Soil		
Reporting Units: %	Dutti		SAMPLE		ATE REC	OVERV
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		5.62	4.92	13	20	
				_	-	
Lab Batch #: ⁹³⁸⁹⁶⁴ Date Analyzed: 04/17/2014 12:25	Data Propar	e d: 04/17/2014	Ana	lyst:WRU		
OC- Sample ID: 483548-021 D	Batch			rix: Soil		
Reporting Units: %	Dutch		SAMPLE		ATE REC	OVERY
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte Percent Moisture		8.05	6.67	19	20	
		8.05	0.07	19	20	
Lab Batch #: 938964	Data Duanau	ed:04/17/2014	Ano	lyst:WRU		
Date Analyzed: 04/17/2014 12:25 QC- Sample ID: 483548-031 D	Batch			trix: Soil		
Reporting Units: %	Daten		SAMPLE		ATE REC	OVERY
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		4.77	2.87	50	20	F

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



Work Order #: 483548



Project Name: CEMC- CVU#226

QC- Sample ID: 483548-041 D	Prepared: 04/21/2014 Batch #: 1	4 Ana Mat	lyst: WRU t rix: Soil	D: 074635	
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.65	4.53	3	20	
Lab Batch #: 939116 Date Analyzed: 04/21/2014 13:00 QC- Sample ID: 483548-051 D	Prepared: 04/21/2014 Batch #: 1		lyst: WRU t rix: Soil		
Reporting Units: %		/ SAMPLE		ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	l	RPD	Control Limits %RPD	Flag
Percent Moisture	1.18	1.18	0	20	
QC- Sample ID: 483548-061 D	Prepared: 04/21/2014 Batch #: 1	Mat	lyst: WRU t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.37	7.19	2	20	
-	Prepared: 04/21/2014		lyst: WRU		
QC- Sample ID: 483561-003 D	Batch #: 1		trix: Soil		OVEDX
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE RECO	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.27	5.48	4	20	

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

4 Custody Seal # Preserved where applicable On lce Cooler Temp. Thermo. Corr. Factor ♀ V O I > I > I ♀	Preserved where applicable	4 Custody Seal #	ico and ito	3 Received By: 5	Received By: 5	Date Time:	Date Time:	3 Relinquished by: 5 Molice: Streature of this decriment and relinquishment of samples constit
Received By:	25	Relinquished By:		ву:		0.00	Date Time:	Relinquishearby:
Received By: 2	te Time: -(}-iY	Relinquished By: 2	3	liby:	1020 1 J 2 1:0-	ate Time:	Date Time:	Feilhquished by Sampler:
FED-EX / UPS: Tracking #		3 by 3:00 pm	AMPLES CHANGE POSSI	EACH TIME S	ENTED BELOW	BEDOCUM	y 3:00 pm STODY MUST I	TAT Starts Day received by Lab, if received by 3:00 pm SAMPLE CUSTODY MUST
			st	TRRP Checklist				3 Day EMERGENCY
		UST / RG -411		Level 3 (CLP Forms)	6		TAT	2 Day EMERGENCY Contract TAT
		TRRP Level IV		Level III Std QC+ Forms	Г.			Next Day EMERGENCY
	lata)	Level IV (Full Data Pkg /raw data)		Level II Std QC	Le		-	Same Day TAT 5 Day TAT
	Notes:		Data Deliverable Information	Data				Turnaround Time (Business days)
		XX		S	4/14/14/1330	1	25	10 074635-JMF-SB10
		××		S	1/14/14/1325	1/11	15	074635-JMF-5BID
		XX		S	1/14 1315	4/14/14	S	8 074635-JMF-SBID
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		××		S	14 1235	y_ u/in/in	60	6 074635-JMF-SBI1
		XX		s	14 1230	i u/iu/iu	40	5 074635-JMF-5811
		XX	1	S	14/14 1225	4	20	4 674635-JMF-SBN
		××		S	1/14 1220	4/14/14	01	3 074635-JMF-5811
		××	-	S	14 1215	4/14/14	S	2 074635-JMF-SB1
		××		2	4-14 1:200	4-14-44	0	1 074635-JMF-SB11
		NONE	HCI NaOH/Zn Acetate	Matrix b	le Time		Sample Depth	No. Field ID / Point of Collection
	~	Number of preserved bottles	Number of 1		ction	Collection		John rengerson
		le			PO Number:	ľ	teren2	Samplers's Name: 1 Knisht Nale Forenz
		n #					1800-	Project Contact: 1 432-6.86-0086
		100	Ven llexico	5	Lea Cour	Invoi	0.	Lidland, TX 19703 Phone No:
			3	104	CELocation: C	Proje	West	ss: 2135 5 Loop 250
			174635	\frown	Project Name/Number:	Proje		Company Name / Branch:
			ation	Project Information	Pro			Client / Reporting Information
	Analytical Information		www.xenco.com	W				Service Center - San Amonio, Texas (210-508-3334)
100) Tampa, Florida (813-620-2000)	Norcross, Georgia (770-449-8800) Xenco Quote # Xei	Xenco						Dallas, Texas (214-902-0300)
Lakeland, Florida (863-646-8526)	Odessa, Texas (432-563-1800)	Odes						Stafford,Texas (281-240-4200)
								Setting the Standard since 1990
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Page 25 of 32

On Loe Cooler Temp. Thermo. Corr. Factor	Preserved where applicable	Preserved nd assigns XENCO's stan	Custody Seal # affiliates, subcontractors a	NCO Laboratories and its	Received By: 5	e: ase order from	Date Time:	Relinquished by: Date Time: Received By: Custody Seal # Preserved where applicable On Loe Cooler Temp. Thermo. Corr. Factor 5
	Date Time: 10: 23Received By:	Dat	Relinquished By: 4		Received By:		Date Time:	Arelinquisboetby:
ed By:	Date Time: Received By:	L Dat	Relinquished By: 2	3	Received By:	1020	Date Time:	1 Alinguishaday Sampler:
		G COURIER DELIVERY	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELI	ME SAMPLES CHANGE F	D BELOW EACH TIN	DOCUMENTE	DDY MUST BE	
25.52 #	FED_FY / IDQ: Tracking #						1:00 pm	TAT Starts Day received by Lab. if received by 3:00 pm
				cklist	TRRP Checklist	-		3 Day EMERGENCY
			UST / RG -411	LP Forms)	Level 3 (CLP Forms)			2 Day EMERGENCY
			TRRP Level IV	Level III Std QC+ Forms	Level III St			Next Day EMERGENCY
		a Pkg /raw data)	Level IV (Full Data Pkg /raw data)	1 QC	Level II Std QC			Same Day TAT 5 Day TAT
	Notes:		tion	Data Deliverable Information				Turnaround Time (Business days)
		××			1535 5	4/14/14	SI	10 074635-JMF-S138
		メメ			1530 5	4/14/14 1530	0	0 074635-JMF-5B8
		X X		-	1425 5	h(/m//n	60	8 074635-JMF-5810
		××		_		4/14/14	35,	7 074635-JMF-589
		XX			1510 5	4/14/14	25	8 074635-JMF-589
		××		-	1505 5	4/14/14	5	5 074635-JMF-SB9
		XX			1500 S	પ/ાય/∖ષ	10.	4 074635-JMF-SB9
		XX			1455 S	u/u/u	S	3 074635-SMF-5B9
		××		-		4/14/14	ò	2 074635-JMF-5B9
		× ×			S 5251	h1/h1/h	35	, 074635-JMF-5810
Field Comments		NONE CN	HNO3 H2SO4 NaOH NaHSO4 MEOH	HCI NaOH/Zn Acetate	Time Matrix	Date	Sample Depth	
ww= waste water			Number of preserved bottles	Numbe		Collection		
		es]]	terro
W = Wipe 0 = 0il		>			er:	PO Number:	crent	Project Contact: Chris Knicht / Suke Ferens
SL = Sludge WW= Waste Water						1	230	432-686-0086
P = Product SW = Surface water			r lex ico	10	00	LCG C		Email: Email: Phone No:
GW =Ground Water DW = Drinking Water				CULAZER .	cura	Project Location:	West	35-5. Loop256
A= Air S = Soil/Sed/Solid			·	074635	Project Name/Number:	Project N		C anch:
				ormation	Project Information			Client / Reporting Information
Matrix Codes	Analytical Information							
Job #	Xenco Job#	Xenco Quote #		www.xenco.com				Service Center - San Antonio, Texas (210-509-3334)
Tampa, Florida (813-620-2000)	Norcross, Georgia (770-449-8800)	Norcross, Ge						Dallas, Texas (214-902-0300)
Lakeland, Florida (863-646-8526)	Odessa, Texas (432-563-1800)	Odessa, Tex						Setting the Standard since 1990 Stafford, Texas (281-240-4200)
			7	Page 10				
		DY	TUDICUS	2 C	CHAIN			XENCO
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Setting the Standard since 1990 Stafford,Texas (281-240-4200) Dallas, Texas (214-902-0300) Service Center - San Antonio Texas (210-500-3334)		NO OC	Odes: Norce	as (432-563-1800) eorgia (770-449-88	Lakeland, Florida (863-646-8526) Tampa, Florida (813-620-2000)	63-646-8526) -620-2000)
Service Center - San Antonio, Texas (210-509-3334)		www.xenco.com	Xenco	Quote # Xenco Job #	5 #	
Client / Reporting Information		Drainet Information		Analytical Information		Matrix Codes
Company Name Branch:	Proje	Project Name/Number: 0746 3	~			A= Air
5 5		ation CVU #246	5			S = Sol/Sed/Solid GW =Ground Water DW = Drinking Water
Email: Phone No:	Invoi	nty, New	Mexico			P = Product
432-(34					St = Sludge WW= Waste Water
Chrisknicht Jake Ferenz		PO Number:	S			W = Wipe
Sampless Malle: John Fergerson			de			WW= Waste Water
No. Field ID / Point of Collection	Collection		e de la construction de la const			
1 074635-JMF-588	10 u/iu/iu	Time Matrix bottles H	Ac HN H2 Na Na ME K NC		Fie	Field Comments
	15 4/14					-
- SB8	25 4/14/1U	1550				
-JMF-SB8	0.	1555	XX			
JMF-SB6		1610	×××			
-JMF-586		5191	××			
-JMF-SKO		1620	××			
JMF-586		1	×××			
JM17-586		1630	XX			
10 JULIE JULIE Turnaround Time (Business days)	1111 CG	Data Deliverable Information	ormation	Notes:		
Same Day TAT 5 Day TAT		Level II Std QC	Level IV (Full Data Pkg /raw data)			
Next Day EMERGENCY		Level III Std QC+ Forms	TRAP Level IV			
2 Day EMERGENCY Contract TAT		Level 3 (CLP Forms)	UST/RG -411			
3 Day EMERGENCY		TRRP Checklist				9
TAT Starts Day received by Lab, if received by 3:00 pm	pm			FED-EX / UPS: Tracking #	# B	
Sampler:	Date Time:	Received By:	Date Time: Received By: Relinquished By: Date Time: Junt 200 1.331.35 March 22	Date Time: Received By:	iy:	
Relinquished by:	Date Time:	ω π	Relinquished By: 4	Date Time: Received By:	iy:	
How inquisition of by: Date Time: Received By: Custody Seal # Preserved where applicable 5 5 5 5 5 5 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	Date Time: alid purchase order	Received By: 5 from client company to XENCO Laboratories a	Custody Seal # Pro-	Preserved where applicable	On los Cooler Temp.	emp. Thermo. Corr. Factor $f_1 = \int_{-\infty}^{\infty} \frac{f_1}{f_1} \int_{-\infty}^{\infty} \frac{f_2}{f_2} \int_{-\infty}^{\infty} $

LABORATORIES		CHAIN O	of 7 TUSTODY	Y		
Setting the Standard since 1990						
Dallas. Texas (214-902-0300)				Norcross Georgia (770-440-89		Lancadina, i ivina (943-600-2000) Tampa Elorida (943-600-2000)
Demise Deter Antesia Taska Join Enn 330A				Xenco Quote # Xer	ico Job #	and the second
Service Center - San Antonio, Texas (210-303-334)		www.xenco.com		Analytical Information		Matrix Codes
Client / Reporting Information		Project Information				
		Project Name/Number: 0746	35			A= Air S = Soil/Sed/Solid
Company Address: 2135 S LOOP 250 West	t Project Location:	C-CVU #26C				GW =Ground Water
Michland, TX 79703	Invoice To:	Coun	, nexico			P = Product SW = Surface water
432-0						SL = Siudge WW= Waste Water
Project Contact: Chris Krischt / Grahlet	Or Jule Forenz PO Number:	ber:		,e.5		W = Wipe 0 = 011
Samplers's Name: John Fercerson				'io		WW=Waste Water
0	Collection		Number of preserved bottles	10/		
No. Field ID / Point of Collection	Sample Depth Date	Time Matrix bottles T	VaOH/Zn Acetate HNO3 H2SO4 VaOH VaHSO4 MEOH	CL		Field Comments
1 074635-JMF-587	0 4/15/14	1000 5 1		×		
2 074635-JMF-587	N 4/12/19	1005		××		
587	10 WISIN	1010 5 1		××		
	15 9/15/14	1015 5 1		×		
5 074635-JMF-587	25 4/15/W	1020 5 1		×		
- JMF-5137	4/15/14	1025		×		
JMF-SB4	4/15/14	1 5 5401		×		
	5 4/15/14	1050 5 1		××		
0 674635 - JMF-SB4	12 1/1/14	1 5 0011 hiles/h		×		
10 074635-JMF-584	192 n/12/14	4/15/14/1105 5 1		XX		
Turnaround Time (Business days)		Data Deliverable Information	nformation		Notes:	
Same Day TAT 5 Day TAT		Level II Std QC	Level IV (Full Data Pkg /raw data)	kg /raw data)		
Next Day EMERGENCY		Level III Std QC+ Forms	TRRP Level IV			
2 Day EMERGENCY Contract TAT		Level 3 (CLP Forms)	UST / RG -411			
3 Day EMERGENCY		TRRP Checklist				
TAT Starts Day received by Lab, if received by 3:00 pm	pm				FED-EX / UPS: Tracking #	
Felinquished by Sampler:	Date Time:	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIV Date Time: Date Time: Data Time: Date Time:	ANGE POSSESSION, INCLUDING C Relinquished By:	DURIER DELIVERY	Received By:	
Relinquished W	Date Time:	Received By:	Relinquíshed By:	Date Time: (D)	Date Time: (0:20 Received By:	
And Control of C	Date Time:	Received By:	Custody Seal #	Preserved where applicable	licable On Ice	Cooler Temp. Thermo. Corr. Factor $0 + 1 = 10$ C.
Notice: Signature of this document and relinquishment of samples constitutes a va	lid purchase order from	a client company to XENCO Laboratories	and its affiliates, subcontractors and	assigns XENCO's standard terms and	d conditions of service unless pre	viously neglotiated under a fully executed client contract.

Page 28 of 32

Page S of Z Odessa, Texas (432-563-1800) Norcross, Georgia (770-043-88 Norcross, Georgia (770-043-88 Momention O 714L 3,55 H 24,5 Number of preserved bottles Norcross, Georgia (770-043-88 Number of preserved bottles Norcross, Georgia (770-043-88 Number of preserved bottles Number of preserved bottles Norcross, Georgia (770-043-88 Number of preserved bottles Norke Nork	On ke Cooler Temp. Thermo. Corr. Facto	Preserved where applicable	Custody Seal # Preser	Received By:	Date Time:	ہ Relinquished by:
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$ \begin{array}{ $	alved By:	Cate Time: Rec 4-17-14 2		Received By:	Date Time: 4/17/14/0	Sampler:
$ \begin{array}{ $	Tracking #		3E POSSESSION, INCLUDING COURIER DELIVER	INTED BELOW EACH TIME SAMPLES CHANG	Y MUST BE DOCUM	eived by Lab, if r
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$				TRRP Checklist		3 Day EMERGENCY
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Page S of Z 0) Odessa, Texas (432-563-1800) Norcross, Georgia (770-449-8800)	1co Job #	xen	Xenco Quote	www.xenco.com		Service Center - San Antonio, Texas (210-509-3334)
Page \leq of \underline{T} Odessa, Texas (432-563-1800)		Georgia (770-449-8800)	Norcross,			Dallas, Texas (214-902-0300)
Page S Of	Lakeland, Florida (863-646-8526)	exas (432-563-1800)				Stafford, Texas (281-240-4200)
				Page 0		LABORATORIES

Page 29 of 32

XENCO		OF	CUSTODY	,	
Setting the Standard since 1990			-+		
Stafford, Texas (281-240-4200)			0	Odessa, Texas (432-563-1800)	Lakeland, Florida (863-646-8526)
Dallas, Texas (214-902-0300)			z	Norcross, Georgia (770-449-8800)	00) Tampa, Florida (813-620-2000)
Service Center - San Antonio, Texas (210-509-3334)		www.xenco.com	×	Xenco Quote #	Xenco Job #
				Analytical Information	on Matrix Codes
Client / Reporting Information		Project Information			
Company Name / Branch:	Project I	Project Name/Number:074635			A= Air S = Soil/Sed/Solid
355 2000 250	West Project Location:	TUN			GW =Ground Water
Midland, TX 79703	Lea	enty New M	erico		P = Product
12 2 - 66/1					SL = Sludge
-208-201	0086				WW= Waste Water W = Wipe
hris Knight /Jake	Ferenz PO Number:	ber;		τS	0 = 0
John Fergerson				i d	WW= Waste Water
(Collection		Number of preserved bottles	0~	
No. Field ID / Point of Collection	Sample		NO3 2SO4 aOH aHSO4 EOH DNE	Ch	
+ 074635-JMF-582	MIS-14 O	1315 5 1			
2 074635 -JMF- 582	hilsila S	1320 5 1	××		
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5 074635-JMF-SB2	<u> </u>	1335	×		
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10 074635-JMF-5B1		WISH 1435 5 1	×	×	
Turnaround Time (Business days)		Data Deliverable Information	tion	Notes:	
Same Day TAT 5 Day TAT		Level II Std QC	Level IV (Full Data Pkg /raw data)	w data)	
Next Day EMERGENCY		Level III Std QC+ Forms	TRRP Level IV		
2 Day EMERGENCY		Level 3 (CLP Forms)	UST / RG -411		
3 Day EMERGENCY		TRRP Checklist			
TAT Starts Day received by Lab, if received by 3:00 pm) pm			FED-EX / UF	FED-EX / UPS: Tracking #
SAMPLE CUSTOD	MUST BE DOCUMENT	DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION,	POSSESSION, INCLUDING COURIER DELI Relinguished Ry:	VERY	
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5 [5] 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 negioitated under a fully executed client contract.	valid purchase order fron	5 1 client company to XENCO Laboratories and its	Affiliates, subcontractors and assigns	XENCO's standard terms and condition	ons of service unless previously neglotitated under a fully executed client

Page 30 of 32

of tee Cooler Temp. Thermo. Corr. Factor	Preserved where applicable	Preserved where applicable	Presei	and assign	Custody Seal #	Custod	tories and is	NCO I abors	Received By: 5	Rec 5	Date Time:		 Relinquished by: 5 Notice: Signature of this document and relinquishment of samples constitutes a 	
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Received By: 2		Date Time: 4-17-14			Relinquished By: 2	Relinqu 2		3	Received By:	120 HOO	Date Time: 1/17/14 102.0	S. D	Relingdished by Sampler:	1
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WW= Waste Water		12	de									Forgerson	Samplers's Name: John	
O = Oil			5							PO Number:		Knicht/Jake Ferenz	thris	
SL = Sludge WW= Waste Water											20	432-686-0086		
P = Product SW = Surface water			r 1.1			riexico		NCW	the	Invoice To:	50	Phone No:	Email: Lickland, IX	
GW =Ground Water DW = Drinking Water							6	#26	CVU	CENC - CVD #266		S Loop 250 Wast	2135	
A= Air S = Soil/Sed/Solid						1	1635	0746	'Number:	Project Name/Number:			Inch:	
								ormation	Project Information		-	ы 	Client / Reporting Information	
Matrix Codes	Analytical Information	Analytica												
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Tampa, Florida (813-620-2000)	Norcross, Georgia (770-449-8800)	Georgia (7	Vorcross,										Dallas, Texas (214-902-0300)	
Lakeland, Florida (863-646-8526)	563-1800)	Odessa, Texas (432-563-1800)	Odessa, T	-								0	Setting the Standard since 1990 Stafford, Texas (281-240-4200)	
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Client: Conestoga Rovers & Associates

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Acceptable Temperature Range: 0 - 6 degC Air and Metal samples Acceptable Range: Ambient Date/ Time Received: 04/17/2014 10:20:00 AM **Temperature Measuring device used :** Work Order #: 483548 Comments Sample Receipt Checklist 1 #1 *Temperature of cooler(s)? #2 *Shipping container in good condition? Yes #3 *Samples received on ice? Yes #4 *Custody Seals intact on shipping container/ cooler? N/A #5 Custody Seals intact on sample bottles? N/A #6 *Custody Seals Signed and dated? N/A #7 *Chain of Custody present? Yes #8 Sample instructions complete on Chain of Custody? Yes #9 Any missing/extra samples? No #10 Chain of Custody signed when relinquished/ received? Yes #11 Chain of Custody agrees with sample label(s)? Yes #12 Container label(s) legible and intact? Yes #13 Sample matrix/ properties agree with Chain of Custody? Yes #14 Samples in proper container/ bottle? Yes #15 Samples properly preserved? Yes #16 Sample container(s) intact? Yes #17 Sufficient sample amount for indicated test(s)? Yes #18 All samples received within hold time? Yes #19 Subcontract of sample(s)? Yes #20 VOC samples have zero headspace (less than 1/4 inch bubble)? N/A #21 <2 for all samples preserved with HNO3,HCL, H2SO4? N/A #22 >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#:

Date: 04/18/2014

Checklist completed by: Mmg Hoak Kelsey Brooks Checklist reviewed by: Mmg Hoak

Date: 04/18/2014

Analytical Report 514049

for GHD Services, INC- Midland

Project Manager: Jacob Ferenz

CEMC- CVU#226

074635

01-SEP-15

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

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

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

> Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



01-SEP-15

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

Reference: XENCO Report No(s): **514049 CEMC- CVU#226** Project Address: NM

Jacob Ferenz:

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) 514049. 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. 514049 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.

Ams boah

 Kelsey Brooks

 Project Manager

 Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies.

 A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



Sample Cross Reference 514049



GHD Services, INC- Midland, Midland, TX

CEMC- CVU#226

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-082015-JR-SB-13 0'	S	08-20-15 09:45	- 0 ft	514049-001
SS-082015-JR-SB-13 5'	S	08-20-15 09:50	- 5 ft	514049-002
SS-082015-JR-SB-13 10'	S	08-20-15 09:55	- 10 ft	514049-003
SS-082015-JR-SB-13 15'	S	08-20-15 10:00	- 15 ft	514049-004
SS-082015-JR-SB-13 20'	S	08-20-15 10:05	- 20 ft	514049-005
SS-082015-JR-SB-13 25'	S	08-20-15 10:10	- 25 ft	514049-006
SS-082015-JR-SB-13 35'	S	08-20-15 10:15	- 35 ft	514049-007
SS-082015-JR-SB-12 0'	S	08-20-15 10:20	- 0 ft	514049-008
SS-082015-JR-SB-12 5'	S	08-20-15 10:25	- 5 ft	514049-009
SS-082015-JR-SB-12 10'	S	08-20-15 10:30	- 10 ft	514049-010
SS-082015-JR-SB-12 15'	S	08-20-15 10:35	- 15 ft	514049-011
SS-082015-JR-SB-12 20'	S	08-20-15 10:40	- 20 ft	514049-012
SS-082015-JR-SB-12 25'	S	08-20-15 10:45	- 25 ft	514049-013
SS-082015-JR-SB-12 35'	S	08-20-15 10:50	- 35 ft	514049-014
SS-082015-JR-SB-15 0'	S	08-20-15 10:55	- 0 ft	514049-015
SS-082015-JR-SB-15 5'	S	08-20-15 11:00	- 5 ft	514049-016
SS-082015-JR-SB-15 10'	S	08-20-15 11:05	- 10 ft	514049-017
SS-082015-JR-SB-15 15'	S	08-20-15 11:10	- 15 ft	514049-018
SS-082015-JR-SB-15 20'	S	08-20-15 11:15	- 20 ft	514049-019
SS-082015-JR-SB-15 25'	S	08-20-15 11:20	- 25 ft	514049-020
SS-082015-JR-SB-15 35'	S	08-20-15 11:25	- 35 ft	514049-021
SS-082015-JR-SB-14 0'	S	08-20-15 11:30	- 0 ft	514049-022
SS-082015-JR-SB-14 5'	S	08-20-15 11:35	- 5 ft	514049-023
SS-082015-JR-SB-14 10'	S	08-20-15 11:40	- 10 ft	514049-024
SS-082015-JR-SB-14 15'	S	08-20-15 11:45	- 15 ft	514049-025
SS-082015-JR-SB-14 20'	S	08-20-15 11:50	- 20 ft	514049-026
SS-082015-JR-SB-14 25'	S	08-20-15 11:55	- 25 ft	514049-027
SS-082015-JR-SB-14 35'	S	08-20-15 12:00	- 35 ft	514049-028
SS-082015-JR-SB-16 0'	S	08-20-15 14:05	- 0 ft	514049-029
SS-082015-JR-SB-16 5'	S	08-20-15 14:10	- 5 ft	514049-030
SS-082015-JR-SB-16 10'	S	08-20-15 14:15	- 10 ft	514049-031
SS-082015-JR-SB-16 15'	S	08-20-15 14:20	- 15 ft	514049-032
SS-082015-JR-SB-16 20'	S	08-20-15 14:25	- 20 ft	514049-033
SS-082015-JR-SB-16 30'	S	08-20-15 14:30	- 30 ft	514049-034
SS-082015-JR-SB-16 50'	S	08-20-15 14:35	- 50 ft	514049-035
SS-082015-JR-SB-16 70'	S	08-20-15 14:40	- 70 ft	514049-036
SS-082015-JR-SB-16 90'	S	08-20-15 14:45	- 90 ft	514049-037



CASE NARRATIVE



Client Name: GHD Services, INC- Midland Project Name: CEMC- CVU#226

Project ID: 074635 Work Order Number(s): 514049 Report Date:01-SEP-15Date Received:08/21/2015

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

oject Location. Tun								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	514049-0	001	514049-0	02	514049-0	03	514049-0	04	514049-0	05	514049-0	06
Amalusia Dogwastad	Field Id:	SS-082015-JR-	SB-13 0'	SS-082015-JR-5	SB-13 5'	SS-082015-JR-S	B-13 10'	SS-082015-JR-S	B-13 15'	SS-082015-JR-S	B-13 20'	SS-082015-JR-S	B-13 25'
Analysis Requested	Depth:	0 ft		5 ft		10 ft		15 ft		20 ft		25 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	09:45	Aug-20-15	09:50	Aug-20-15 0	9:55	Aug-20-15	10:00	Aug-20-15	10:05	Aug-20-15	10:10
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15 1	1:30	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15	11:30
	Analyzed:	Aug-30-15	06:06	Aug-30-15	06:29	Aug-30-15 (6:52	Aug-30-15	07:14	Aug-30-15	08:00	Aug-30-15 (08:22
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		28300	1220	260	21.2	527	28.0	599	46.2	613	27.8	1180	61.2
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15 1	7:30	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		17.8	1.00	5.56	1.00	28.7	1.00	13.3	1.00	28.1	1.00	34.7	1.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

oject Location. 1997								Project Mar	nager:	Kelsey Brooks	5		
	Lab Id:	514049-0	007	514049-0	08	514049-0	09	514049-0	10	514049-0	11	514049-0	12
Amplusia Degraciad	Field Id:	SS-082015-JR-5	SB-13 35'	SS-082015-JR-5	SB-12 0'	SS-082015-JR-S	SB-12 5'	SS-082015-JR-S	B-12 10'	SS-082015-JR-S	B-12 15'	SS-082015-JR-S	B-12 20'
Analysis Requested	Depth:	35 ft		0 ft		5 ft		10 ft		15 ft		20 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	10:15	Aug-20-15	10:20	Aug-20-15 1	10:25	Aug-20-15	10:30	Aug-20-15	10:35	Aug-20-15	10:40
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15 1	11:30	Aug-29-15	11:30	Aug-29-15	11:30	Aug-29-15	11:30
	Analyzed:	Aug-30-15	08:45	Aug-30-15 (09:08	Aug-30-15 1	10:16	Aug-30-15	10:39	Aug-30-15	11:24	Aug-30-15	11:47
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		385	16.0	3.03	2.11	5.02	2.13	6.76	2.08	4.19	2.11	ND	2.15
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15 1	17:30	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		37.5	1.00	5.19	1.00	6.31	1.00	4.03	1.00	5.37	1.00	6.84	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Ma	nager:	Kelsey Brook	5		
	Lab Id:	514049-0	013	514049-0	14	514049-0	15	514049-0	016	514049-0	17	514049-0	18
Analysis Requested	Field Id:	SS-082015-JR-S	B-12 25'	SS-082015-JR-S	B-12 35'	SS-082015-JR-S	B-15 0'	SS-082015-JR-	SB-15 5'	SS-082015-JR-S	B-15 10'	SS-082015-JR-S	B-15 15'
Analysis Kequested	Depth:	25 ft		35 ft		0 ft		5 ft		10 ft		15 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	10:45	Aug-20-15	10:50	Aug-20-15 1	0:55	Aug-20-15	11:00	Aug-20-15	11:05	Aug-20-15	11:10
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-29-15	11:30	Aug-30-15	16:00	Aug-30-15 1	6:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00
	Analyzed:	Aug-30-15	12:10	Aug-30-15	17:48	Aug-30-15 1	8:34	Aug-30-15	18:56	Aug-30-15	19:19	Aug-30-15	19:42
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		ND	2.09	3.49	2.20	45.9	10.4	99.1	11.2	27.1	2.24	17.1	2.20
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15 1	7:30	Aug-28-15	17:30	Aug-28-15	17:30	Aug-28-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.43	1.00	9.20	1.00	3.87	1.00	10.8	1.00	10.5	1.00	9.04	1.00

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Kms Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Mar	nager:	Kelsey Brooks	5		
	Lab Id:	514049-0)19	514049-0	20	514049-0	21	514049-0	22	514049-0	23	514049-0	24
Analysis Requested	Field Id:	SS-082015-JR-5	SB-15 20'	SS-082015-JR-S	B-15 25'	SS-082015-JR-S	B-15 35'	SS-082015-JR-5	SB-14 0'	SS-082015-JR-S	SB-14 5'	SS-082015-JR-S	B-14 10'
Analysis Kequestea	Depth:	20 ft		25 ft		35 ft		0 ft		5 ft		10 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	11:15	Aug-20-15	11:20	Aug-20-15	1:25	Aug-20-15	11:30	Aug-20-15	11:35	Aug-20-15	11:40
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15	16:00
	Analyzed:	Aug-30-15	20:04	Aug-30-15 2	21:12	Aug-30-15 2	21:35	Aug-30-15	21:57	Aug-30-15 2	22:20	Aug-30-15 2	22:43
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.9	2.21	13.8	2.16	12.1	2.12	79.5	10.8	342	21.0	186	12.3
Percent Moisture	Extracted:												
	Analyzed:	Aug-28-15	17:30	Aug-28-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.58	1.00	7.44	1.00	5.83	1.00	7.10	1.00	4.70	1.00	18.9	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Ma	nager:	Kelsey Brooks	5		
	Lab Id:	514049-0	25	514049-0	26	514049-0	27	514049-0	28	514049-0	29	514049-0	30
Analysis Requested	Field Id:	SS-082015-JR-S	B-14 15'	SS-082015-JR-S	B-14 20'	SS-082015-JR-S	B-14 25'	SS-082015-JR-S	B-14 35'	SS-082015-JR-5	SB-16 0'	SS-082015-JR-S	SB-16 5'
Analysis Requested	Depth:	15 ft		20 ft		25 ft		35 ft		0 ft		5 ft	
	Matrix:	SOIL											
	Sampled:	Aug-20-15	11:45	Aug-20-15 1	1:50	Aug-20-15 1	1:55	Aug-20-15	12:00	Aug-20-15	14:05	Aug-20-15 1	14:10
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-15	16:00	Aug-30-15 1	6:00	Aug-30-15 1	16:00	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15 1	16:00
	Analyzed:	Aug-30-15	23:28	Aug-30-15 2	23:51	Aug-31-15 (00:13	Aug-31-15	00:36	Aug-31-15	01:44	Aug-31-15 (02:07
	Units/RL:	mg/kg	RL										
Chloride		593	21.3	235	11.4	51.6	2.11	13.0	2.08	10.7	10.3	248	10.3
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-15	17:30	Aug-31-15 1	7:30	Aug-31-15 1	17:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15 1	17:30
	Units/RL:	%	RL										
Percent Moisture		6.16	1.00	12.1	1.00	5.15	1.00	4.02	1.00	2.80	1.00	3.19	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab: Fri Aug-21-15 04:15 pm

Report Date: 01-SEP-15

								Project Mai	nager:	Kelsey Brook	S		
	Lab Id:	514049-0	031	514049-0	32	514049-0	33	514049-0	34	514049-0	35	514049-0	36
Analysis Requested	Field Id:	SS-082015-JR-5	SB-16 10'	SS-082015-JR-S	B-16 15'	SS-082015-JR-S	B-16 20'	SS-082015-JR-S	B-16 30'	SS-082015-JR-S	B-16 50'	SS-082015-JR-S	B-16 70'
Analysis Kequesiea	Depth:	10 ft		15 ft		20 ft		30 ft		50 ft		70 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-20-15	14:15	Aug-20-15	4:20	Aug-20-15 1	4:25	Aug-20-15	14:30	Aug-20-15	14:35	Aug-20-15 1	14:40
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-30-15	16:00	Aug-30-15	16:00	Aug-30-15 1	6:00	Aug-31-15	14:30	Aug-31-15	14:30	Aug-31-15 1	14:30
	Analyzed:	Aug-31-15	02:29	Aug-31-15 (02:52	Aug-31-15 (3:15	Aug-31-15	23:01	Aug-31-15	23:46	Sep-01-15 0	00:08
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		10.9	2.15	9.07	2.27	3.24	2.25	5.04	2.15	2.19	2.09	ND	2.12
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15 1	7:30	Aug-31-15	17:30	Aug-31-15	17:30	Aug-31-15 1	17:30
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.19	1.00	11.9	1.00	11.1	1.00	6.93	1.00	4.09	1.00	5.48	1.00

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Huns Boah

Kelsey Brooks Project Manager



Project Location: NM

Certificate of Analysis Summary 514049

GHD Services, INC- Midland, Midland, TX

Project Name: CEMC- CVU#226



Date Received in Lab:Fri Aug-21-15 04:15 pmReport Date:01-SEP-15

Project Manager: Kelsey Brooks

	Lab Id:	514049-037			
Anglusia Deguested	Field Id:	SS-082015-JR-SB-16 90'			
Analysis Requested	Depth:	90 ft			
	Matrix:	SOIL			
	Sampled:	Aug-20-15 14:45			
Inorganic Anions by EPA 300/300.1	Extracted:	Aug-31-15 14:30			
	Analyzed:	Sep-01-15 00:31			
	Units/RL:	mg/kg RL			
Chloride		2.13 2.02			
Percent Moisture	Extracted:				
	Analyzed:	Aug-31-15 17:30			
	Units/RL:	% RL			
Percent Moisture		1.04 1.00			

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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Huns Roah

Kelsey Brooks Project Manager



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

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(214) 902 0300

(210) 509-3334

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(281) 240-4280

(214) 351-9139

(210) 509-3335



BS / BSD Recoveries



Project Name: CEMC- CVU#226

Work Order #: 514049							Proj	ject ID:	074635			
Analyst: JUM	D	ate Prepar	red: 08/29/202	15			Date A	nalyzed:	08/30/2015			
Lab Batch ID: 975769 Sample: 697375-1-1	BKS	Batcl	h#: 1					Matrix:	Solid			
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Control Limits %RPD	Flag				
Chloride	<2.00	50.0	49.6	99	50.0	50.0	100	1	90-110	20		
Analyst: JUM	D	ate Prepar	ed: 08/30/20	15			Date A	nalyzed:	08/30/2015			
Lab Batch ID: 975781 Sample: 697396-1-1	BKS	Batcl	h #: 1					Matrix:	Solid			
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	<2.00	50.0	51.4	103	50.0	50.8	102	1	90-110	20		
Analyst: JUM	D	ate Prepar	ed: 08/31/202	15	+		Date A	nalyzed: ()8/31/2015	ł	·'	
Lab Batch ID: 975899 Sample: 697473-1-	BKS	Batcl	h #: 1					Matrix:	Solid			
Units: mg/kg		BLAN	K/BLANK	SPIKE /]	BLANK	SPIKE DUP	LICATE	RECOV	ERY STUI	DY		
Inorganic Anions by EPA 300/300.1	Blank	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag	
Analytes	Sample Result [A]	[B]	Result [C]	%R [D]	[E]	Duplicate Result [F]	% R [G]	%	%R	%RPD		

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



Project Name: CEMC- CVU#226



Work Order #: 514049														
Lab Batch #: 975769		Project ID: 074635												
Date Analyzed: 08/30/2015	Date Prepared: 08/2	29/2015	А	nalyst: J	UM									
QC- Sample ID: 514048-010 S	Batch #: 1		I	Matrix: S	oil									
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY								
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag								
Chloride	20.4	51.1	70.6	98	80-120									
Lab Batch #: 975769	20.4	51.1	70.0	70	00-120	<u> </u>								
Date Analyzed: 08/30/2015	Date Prepared: 08/2	9/2015	Δ	nalyst: J	UM									
QC- Sample ID: 514049-004 S	Batch #: 1			Matrix: S										
Reporting Units: mg/kg			TRIX SPIKE			DY								
	Parent		1 1	1000	1									
Inorganic Anions by EPA 300	Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag								
Analytes			_			ļ								
Chloride	599	1150	1840	108	80-120									
Lab Batch #: 975781														
Date Analyzed: 08/30/2015	Date Prepared: 08/3			nalyst: J										
QC- Sample ID: 514049-014 S	Batch #: 1		1	Matrix: S	011									
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY								
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag								
Chloride	3.49	55.1	61.9	106	80-120	1								
Lab Batch #: 975781		1				1								
Date Analyzed: 08/30/2015	Date Prepared: 08/3	80/2015	А	nalyst: J	UM									
QC- Sample ID: 514049-024 S	Batch #: 1		I	Matrix: S	oil									
Reporting Units: mg/kg	MAT	RIX / MA	ATRIX SPIKE	RECO	VERY STU	JDY								
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag								
Analytes	186	308	504	103	80-120	<u> </u>								
	100	1 500	507	105	00 120	<u> </u>								

Matrix Spike Percent Recovery [D] = 100*(C-A)/BRelative Percent Difference [E] = 200*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

XENCO Laboratories Project	Recoveries /U#226											
Work Order #: 514049 Lab Batch #: 975899			Proje	ect ID: (074635							
Date Analyzed: 08/31/2015	Date Prepared: 08/31	/2015	А	nalyst: J	UM							
QC- Sample ID: 514049-034 S	Batch #: 1	Batch #: 1 Matrix: Soil										
Reporting Units: mg/kg	MATR	IX / MA	TRIX SPIKE	RECO	VERY STU	DY						
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag						
Analytes	[A]	[B]										
Chloride	5.04	53.7	58.4	99	80-120							
Lab Batch #: 975899 Date Analyzed: 09/01/2015	Date Prepared: 08/31	/2015	Analyst: JUM									
QC- Sample ID: 514050-007 S	Batch #: 1		ľ	Matrix: S	Soil							
Reporting Units: mg/kg	MATR	IX / MA	TRIX SPIKE	RECO	VERY STU	DY						
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag						
Chloride	68.9	75.4	143	98	80-120							





Project Name: CEMC- CVU#226

Work Order #: 514049					
Lab Batch #: 975826			Project I	D: 074635	
Date Analyzed: 08/28/2015 17:30 Date	Prepared: 08/28/2015	5 Ana	lyst:WRU		
QC- Sample ID: 514049-001 D	Batch #: 1	Mat	t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	17.8	15.9	11	20	
Lab Batch #: 975826					
	Prepared: 08/28/2015	5 Ana	lyst:WRU		
QC- Sample ID: 514049-011 D	Batch #: 1	Mat	t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.37	4.91	9	20	
	0.07	1.71		20	
Lab Batch #: 975936 Date Analyzed: 08/31/2015 17:30 Date 3	Prepared: 08/31/2015	5 Ana	lyst:WRU		
OC- Sample ID: 514049-021 D	Batch #: 1		rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]		RPD	Control Limits %RPD	Flag
Percent Moisture	5.83	5.94	2	20	
Lab Batch #: 975936	1		1	1	1
	Prepared: 08/31/2015	5 Ana	lyst:WRU		
QC- Sample ID: 514049-031 D	Batch #: 1	Mat	t rix: Soil		
Reporting Units: %	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.19	7.18	0	20	

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





Project Name: CEMC- CVU#226

Work Order #: 514049

Lab Batch #: 975939			Project I	D: 074635						
Date Analyzed: 08/31/2015 17:30 D	ate Prepared: 08/31/201	5 Anal	lyst: WRU							
QC- Sample ID: 514049-037 D	Batch #: 1	Mat	rix: Soil							
Reporting Units: %	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Percent Moisture	Parent Sample Result [A]	e Sample Duplicate Result	RPD	Control Limits %RPD	Flag					
Analyte		[B]								
Percent Moisture	1.04	<1.00	NC	20	U					
Lab Batch #: 975939										
	ate Prepared: 08/31/201	5 Anal	lyst:WRU							
	ate Prepared: 08/31/201 Batch #: 1		lyst: WRU rix: Soil							
Date Analyzed: 08/31/2015 17:30 D	Batch #: 1		rix: Soil	ATE RECO	OVERY					
Date Analyzed: 08/31/2015 17:30 D QC- Sample ID: 514050-014 D D	Batch #: 1	Mat	rix: Soil	ATE RECO Control Limits %RPD	OVERY Flag					

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

TAT Starts Day received by Lab, if received by 3:00 pm SAMPLE CUSTOPY MUST BE DO Pelinquished by Sampler: Date Time: 1 Ball of the sampler: 2 Ball of the sampler: 3 Ball of the sampler: 4 Ball of the sampler: 5 Date Time: 5 Date Time:	Average of the second sec		-082015-JR-SB-13 -082015-JR-SB-13 -082015-JR-SB-13 -082015-JR-SB-13 -082015-JR-SB-13 -082015-JR-SB-12 -082015-JR-SB-12 -082015-JR-SB-12 -082015-JR-SB-12	2 SS-082015-UR-SB-13 5	Field ID / Point of Collection	Company Name / Branch: Company Address: 1755 Withington PI, Sk. Company Address: 1755 Withington PI, Sk. Email: GK DALLAS TX 75334 Email: GK Phone No: JALOD FCY-LN3 Project Contact: JALOD FCY-LN3 Samplers's Name: Jewn fCY RIE CIE	Client / Donastina Information	Stafford,Texas (281-240-4200) Dallas, Texas (214-902-0300) Service Center - San Antonio, Texas (210-509-3334)	Setting the Standard since 1990
Peceived by 3:00 pm FED-EX / UPS: Tracking # SAMPLE CUSTOTY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY Date Time: Received By: Palinguished By: Date Time: Received By: Date Time: Received By: Palinguished By: Date Time: Received By: Date Time: Received By: Palinguished By: Date Time: Received By: Date Time: Received By: Custody Seal # Preserved where applicable On Lee Cooler Temp. Thermo. Corr. Factor Date Time: S Custody Seal # Preserved where applicable On Lee Cooler Temp. Thermo. Corr. Factor	Level III Std QC+ Forms TRRP Level IV Level 3 (CLP Forms) UST / RG -411 TRRP Checklist	Level II Std QC Level IV (Full Data Pkg /raw data)	S 92.01 0013 S 50.01 0013 S 50.01 0013	XX 1 X CHIMODE	Collection Date Time	୦≤≷ଉଉ⊐⊑ଅ∞≻	Analytical Informatic	Odessa, Texas (432-563-1800) Lakeland, Florida (863-646-8526) Norcross, Georgia (770-449-8800) Tampa, Florida (813-620-2000) Xenco Quote ≇ Xenco Job #	CHAIN OF CUSTODY

3 3 Relinquished by: Date Time: 5 Date Time: 6 By: 5 Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories		Relipqvisted by Sampler: Dat	TAT Starts Day received by Lab, if received by 3:00 pm	3 Day EMERGENCY	2 Day EMERGENCY Contract TAT	Next Day EMERGENCY	Same Day TAT 5 Day TAT	Turnaround Time (Business days)	-SB-15	S-082015-JR-SB-15	NR-SB-15	-JR-SB-15	_		4 55-062015-JR-SB-12	CK-SB-12	JK-SB-12	-JR-SB-12		No. Field ID / Point of Collection	ADIN ATTAN	212	2	Jack ferenz@and.com 331acm	201	Nithington Pl.	Company Name / Branch:		Service Center - San Antonio, Texas (210-509-3334)		Dallon Toron (201-240-4200)	Setting the Standard since 1990	LABORATORIES	
Date Time: Received By: 4 5 Custody Seal # valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assignments	Received By:	BE DOCUMENTED	n	TRRP Checklist	Level 3 (CLP Forms) UST / RG -411	Level III Std QC+ Forms TRRP Level IV	Level II Std QC Level IV (Full Data Pkg /raw data	Data Deliverable Information	Had S I	1115		-	1 8/20 1100	8/20 1055	35' 8/20 1050 S 1	25' ^B lae 1045 S 1	" E/ab	6/ab 1035 S 1	Depth Date Time Matrix bottles HCI NaOH/ZrZACetate HIN03 H2SO4 NaOH VaHSO4 NAOH VaHSO4 NAOH VAHSO4 NAOH	Collection Number of preserved bottles		PO Number:		Invoice Io:	4 CNN-delo	Sk. 500 Project Location	Project Information		<u>www.xenco.com</u>				Page $\frac{A}{4}$ of $\frac{4}{4}$	
pplicable and conditi	Date Time: KIS Received By:	IPate Times 111						Notes:										Held Comments	Cr		WW= Waste Water	0=0il		SW = Stridage water	DW = Diroking Water	A= Air S= Soi/Sed/Solid		Analytical Information Matrix Codes	Xenco Guote # Xenco Job # SIA0A0	Norcross, Georgia (770-449-8800) Tampa, Florida (813-620-2000)	Odessa, Texas (432-563-1800) Lakeland, Florida (863-646-8526)		X	

Relinquished by: Date Time: Received By: Custody Seal # Preserved where applicable On Lee Cooler Temp. Thermo. Corr. Factor 5	3	Y	Rel/ngulshød by Sampler: SAMPLE CUSTODY MUST	TAT Starts Day received by Lab, if received by 3:00 pm	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT 5 Day TAT	Turnaround Time (Business days)	S-082015-JR-SB-16	SS-082015-JR-SB-110	UR-SR-14	SS-DODIS-UN-SD-14		-JR-SB-14	S-082015-UR-SB-14	-UR-SB-14		No. Field ID / Point of Collection S		-	Project Contact: Jacob Ferenz	Jake ferenz @ghd.com 331-8500	atias, Tratas Pla	Company Address: ETHTY- IDallas	-		Service Center - San Antonio, Texas (210-509-3334)	Dallas, Texas (214-902-0300)	Stafford,Texas (281-240-4200)	Setting the Standard since 1990	LABORATORIES
Date Time: Received By: 5 28/10 purchase order from client company to XENCO Laboratories and	e nme: Heceived By:	Ballis 1615 1 COND	Time: Received By:		TRRP Checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Data Deliverable Information		820	S CHOCH DA 25	000	Chill allo	Bab	5' Blac 1135 S 1	8/20 1130	35' Blao 1125 S 1	0	Collection		PO Number:			CENC/074635	Project Information		www.xenco.com				CHAIN OF
s affiliates, subcontractors and assigns XENCO's standard terms and condition		8245 1615	IG COURIER DELIVERY	FED-EX / U		UST / RG -411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	ation Notes:	4								××	HNO3 H2SO4 NaOH NaHSO4 MEOH NONE	Number of preserved bottles	ìd	es					Analytical Information	Xenco Quote #	Norcross, Georgia (770-449-8800)	Odessa, Texas (432-563-1800)		CHAIN OF CUSTODY
On Ice Cooler Temp. Thermo. Corr. Factor Service unless previously negfoliated under a fully executed client contract.	Received By:	Received By: 2		FED-EX / UPS: Tracking #				LSOW											Field Common's	ww=waste water	C = C	W = Wipe	SW = Surface water SL = Sludge	GW =Ground Water DW = Drinking Water P = Product	A= Air S = Soil/Sed/Solid		tion Matrix Codes	Xenco Job# SIAGAG	800) Tampa, Florida (813-620-2000)) Lakeland, Florida (863-646-8526)		

2 4° Indess previously neglobated under a fully executed client contract.	subcontractors and assigns XENCO's standard terms and conditions of service t	and its affiliates, subcontractors and assigns XENCO's a	XENCO Laboratories	(D)	5 Notice: Signature of this document and relinquishment
On Ice Cooler Temp Thermo Corr Factor	ved where applicable 0	4 Custody Seal # Preser	3 Received By:	Date Time:	3 Relinguished by:
12	Date Time: Received By:	Relinquished By:	Received By:	Date Time:	Rélinquished by
7	Date Time: Los Received By:	1	HIS Received By:	Date Time:	Refinquished by Sampler:
	FED-EX / UPS: Tracking #	OSSESSION, INCLUDING COURIER DELIVERY	ECEIVED by 3:00 pm	if received by 3:00 pm	TAT Starts Day received by Lab, if received by 3:00 pm
			TRRP Checklist		3 Day EMERGENCY
		UST/RG-411	Level 3 (CLP Forms)	Contract TAT	2 Day EMERGENCY
		TRRP Level IV	Level III Std QC+ Forms	X7 Day TAT	Next Day EMERGENCY
SOW	Ser Sc	Level IV (Full Data Pkg /raw data)	Level II Std QC	5 Day TAT	Same Day TAT
	Notes:		Data Deliverable Information		10 Turnaround Time (Business days)
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		4	I S SAMI alla	-SB-16 90' 8	7 SS-082015-JR-
			lau 1440 S I		· SS-082015-JR-
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			1430	<u>50</u>	4 SS-082015-JR-
			14a5	-16 20'	3 55-082015-JR-
			IHAN	SB-16 151 8	2 SS-082015-JR-
		XX	GFI	0	1 SS-082015-JR-
Field Comments		HNO3 H2SO4 NaOH NaHSO4 MEOH NONE	Time Matrix bottles HCI NaOH/Zn Acetate	Sample Depth	No. Field ID / Point of Collection
WW= Waste Water		Number of preserved bottles	Collection		
WWI-Waste Water		id	· · · · · · · · ·	Rionial	
W = Wipe		es	PO Number:	n2 011	Project Contact: Jacob Fere
SL = Sludge WW= Waste Water		× •		331500	Jake ferenz @gha.com
DW = Drinking Water P = Product SW = Surface water			NU-JUU	75234	2
S = Soil/Sed/Soild GW =Ground Water			1.1	e.	Company Address: 1755 Within
A= Air			Project Name/Number	Tollac P	Company Name / Branch:
(Matrix Codes	Analytical Information				
540AM	# Xenco Job #	Xenco Quote #	www.xenco.com	(210-509-3334)	Service Center - San Antonio, Texas (210-509-3334)
Tampa, Florida (813-620-2000)	Norcross, Georgia (770-449-8800)	Norcross,			Dallas, Texas (214-902-0300)
Lakeland, Florida (863-646-8526)	Odessa, Texas (432-563-1800)	Odessa, T			Stafford, Texas (281-240-4200)
		ŀ			Setting the Standard since 1990
			CHAIN OF		
		I A A E A VENUAL END			



Work Order #: 514049

XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: GHD Services, INC- Midland Date/ Time Received: 08/21/2015 04:15:00 PM

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

Temperature Measuring device used :

Sample Receipt Checklist	:	Comments
#1 *Temperature of cooler(s)?	3.4	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	N/A	
#7 *Chain of Custody present?	Yes	
#8 Sample instructions complete on Chain of Custody?	Yes	
#9 Any missing/extra samples?	No	
#10 Chain of Custody signed when relinquished/ received?	Yes	
#11 Chain of Custody agrees with sample label(s)?	Yes	
#12 Container label(s) legible and intact?	Yes	
#13 Sample matrix/ properties agree with Chain of Custody?	Yes	
#14 Samples in proper container/ bottle?	Yes	
#15 Samples properly preserved?	Yes	
#16 Sample container(s) intact?	Yes	
#17 Sufficient sample amount for indicated test(s)?	Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	No	
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A	
#21 <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	
#22 >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#:

Date: 08/23/2015

Checklist completed by: Murg Moah Kelsey Brooks Checklist reviewed by: Murg Moah Kelsey Brooks

Date: 08/25/2015