APPROVED
By Olivia Yu at 8:16 am, Oct 17, 2017

Terra Oilfield Services

Biliken 6 Federal 1H-Release #2
Work Plan

Section 12, Township 26S, Range 34E
Lea County, New Mexico

NMOCD considers delineation completed for 1RP-4662. For the proposed remedial activities, NMOCD requires confirmation sample locations and dimensions of the liner demarcated on a scaled map.

May 3, 2017

Prepared for:

Terra Oilfield Services
15487 Pin Oak Drive
Conroe, TX 77384

By:

Safety & Environmental Solutions, Inc.
703 East Clinton Street
Hobbs, New Mexico 88240
(575) 397-0510

TABLE OF CONTENTS

I. Company Contacts

Representative	Company	Telephone	E-mail
Todd Nilson	Terra Oilfield Services	618-407-6696	Todd.nilson@terraofs.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was engaged by Terra Oilfield Services to assess a spill area on the Biliken 6 Federal 1H Release #2, concerning a two hundred fifty (250) bbls. treated water release. This site is situated in Lea County, Section 12, Township 26S, and Range 34E.

According to the C-141: approximately two hundred fifty (250) barrels of treated water was released when a lay flat hose ruptured while transferring treated water from a frac pond to the location. A vacuum truck was dispatched and two hundred thirty (230) bbls. was recovered. A remediation contractor was contacted. This incident references **RP# 4662**.

III. Surface and Ground Water

There is no record of groundwater in the immediate vicinity of the site location. Further research of the New Mexico Office of the State Engineer records indicates the average depth to groundwater for the area to be 150' bgs. According to the Chevron/Texaco Map, the groundwater is in excess of 140' bgs.

IV. Characterization

The target cleanup levels are determined using the *Guidelines for Remediation of Leaks, Spills and Releases* published by the NMOCD (August 13, 1993). Based on the ranking criteria presented below, the applicable Recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined benzene, toluene, ethyl benzene, and total xylenes (BTEX), and 5,000 ppm Total Petroleum Hydrocarbons (TPH). Characterization of vertical extent of chloride concentration to a level of 250 mg/kg (PPM) is also required.

Depth to Ground Water:			
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	20 points	
	50 feet to 99 feet	10 points	
	>100 feet	0 points	**X**
Wellhead Protection Area:			
(Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources)	Yes	20 points	
	No	0 points	**X**
Distance to Surface Water:			
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	20 points	
	200 feet to 1000 feet	10 points	
	>1000 feet	0 points	**X**
RANKING SCORE (TOTAL POINTS)			**0**

V. Work Performed

On March 29, 2017, SESI personnel were onsite to look over the Terra Biliken Release #2 to determine where to install the boreholes using the Geo probe, and to determine vertical extent of contamination. Borehole one was installed to the depth of ten feet, where soil was wet red sand to four feet; five to twelve feet caliche, clay mix, and a lot of moisture. At the four to eight foot boring the plastic core liner crimped up and was easily extracted. The eight to twelve foot boring the plastic liner crimped up inside the core barrel and the liner and soil sample was lost in removing and clearing the core barrel. After clearing the core barrel boring was stopped. Soil sample cores were capped off, labeled and properly preserved. Rigged down and set up to install borehole #2. Borehole two was installed to the depth of refusal at five and half feet. Soil sample cores were capped and properly preserved. The sample points were mapped using the Juno 3B.

Terra Oilfield Services
Biliken 6 Fed 1H Release #2
Soil Sample Results: Cardinal Laboratories 4-6-2017

SAMPLE ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	Chlorides	TPH GRO	TPH DRO	EXT DRO
BH-1 @ 4ft	0.114	0.233	<0.050	<0.150	0.347	11600	<10.0	20.5	36.6
BH-1 @ 8ft	<0.050	<0.050	<0.050	<0.150	<0.300	22800	<10.0	14.9	18.4
BH-1 @ 10ft	<0.050	<0.050	<0.050	<0.150	<0.300	14600	<10.0	12.0	14.4
BH-2 @ 4ft	<0.050	<0.050	<0.050	<0.150	<0.300	6200	<10.0	15.7	15.7
BH-2 @ 5.5ft	<0.050	<0.050	<0.050	<0.150	<0.300	20000	<10.0	15.2	17.9

On April 5, 2017, SESI personnel were onsite with Custom Welding Backhoe w/operator and spotter at the Terra Biliken Release #2 to install five test trenches to determine vertical extent of contamination. The first test trench was installed to the depth of six feet and soil samples obtained at surface, two, four and six feet and field tested for Chlorides. Vertical was met at four and six feet, with results were less than 124 ppm. The soil characteristics were: surface to two and half feet, red brown sand; two and half to six feet, white solid caliche with one to three inch angular rock. The trench was then backfilled after photos were taken. Test trench two was then installed to the depth of six feet and soil samples obtained at surface, two, four and six feet and field tested for Chlorides. Vertical was met at two, four and six feet, with results less than 124 ppm. The soil characteristics were: surface to four feet, red brown sand; four to six feet, solid white caliche with to six inch rocks. The trench was backfilled after photos were taken. Test trench three was installed to backhoe refusal at twelve feet. Soil samples were obtained at surface, two, four, six, eight, ten and twelve feet and field tested for Chlorides. Vertical was met at ten and twelve feet, where results were 124 and less than 124 ppm. Soil characteristics were: surface to five feet, red brown sand; five to twelve feet, solid white caliche with one to five inch rocks. Trench was backfilled and photos taken. Test trench four was installed to the depth of refusal at twelve feet. Soil samples were obtained at eight, ten and twelve feet and field tested for Chlorides. Vertical was met at ten and twelve feet, with results less than 124 ppm. Soil characteristics were: surface to five feet, red brown sand; five to twelve feet, solid white caliche with one to six inch rocks. Trench was backfilled and photos taken. Test trench five was installed to the depth of refusal at twelve feet. Soil samples were obtained and field tested at eight, ten and twelve feet. Vertical was met at ten and twelve feet, with results 124 and less than 124 ppm. Soil characteristics were: surface to five and half feet, red brown sand; five and half to twelve feet, solid white caliche with one to six inch rocks. Trench was backfilled and photos taken.

All soil samples points, test trench sample points, and pipelines were mapped using the Juno 3B. The samples were properly packaged, preserved and transported to Cardinal Laboratories of Hobbs, NM by chain of custody, and analyzed for TPH(total petroleum hydrocarbons)(Method 8015M), and Chlorides (Method SM4500Cl-B). The results are recapped in the following table:

Terra Oilfield Services
Biliken 6 Fed 1H Release #2
Soil Sample Results: Cardinal Laboratories 4-13-2017

SAMPLE ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	Chlorides	TPH GRO	TPH DRO	EXT DRO
TT-1 @ 4ft	<0.050	<0.050	<0.050	<0.150	<0.300	96.0	<10.0	<10.0	<10.0
TT-1 @ 6ft	<0.050	<0.050	<0.050	<0.150	<0.300	112	<10.0	<10.0	<10.0
TT-2 @ 4ft	<0.050	<0.050	<0.050	<0.150	<0.300	32.0	<10.0	<10.0	<10.0
TT-2 @ 6ft	<0.050	<0.050	<0.050	<0.150	<0.300	32.0	<10.0	<10.0	<10.0
TT-3 @ 6ft	<0.050	<0.050	<0.050	<0.150	<0.300	12800	<10.0	<10.0	<10.0
TT-3 @ 10ft	<0.050	<0.050	<0.050	<0.150	<0.300	16.0	<10.0	<10.0	<10.0
TT-3 @ 12ft	<0.050	<0.050	<0.050	<0.150	<0.300	32.0	<10.0	<10.0	<10.0
TT-4 @ 8ft	<0.050	<0.050	<0.050	<0.150	<0.300	4660	<10.0	<10.0	<10.0
TT-4 @ 10ft	<0.050	<0.050	<0.050	<0.150	<0.300	48.0	<10.0	<10.0	<10.0
TT-4 @ 12ft	<0.050	<0.050	<0.050	<0.150	<0.300	96.0	<10.0	<10.0	<10.0
TT-5 @ 8ft	<0.050	<0.050	<0.050	<0.150	<0.300	15800	<10.0	<10.0	<10.0
TT-5 @ 10ft	<0.050	<0.050	<0.050	<0.150	<0.300	96.0	<10.0	<10.0	<10.0
TT-5 @ 12ft	<0.050	<0.050	<0.050	<0.150	<0.300	64.0	<10.0	<10.0	<10.0

On March 19, 2017 SESI personnel was onsite at the Terra Biliken release #2 to obtain surface soil samples in the area where the trench was backfilled. Five soil samples were obtained at one foot depths. The soil sample points were mapped using the Juno 3B.The samples were properly packaged, preserved and transported to Cardinal Laboratories of Hobbs, NM by chain of custody, and analyzed for TPH(total petroleum hydrocarbons)(Method 8015M), and Chlorides (Method SM4500Cl-B). The results are recapped in the following table:

Terra Oilfield Services
Release #2
Cardinal Lab Results: 4-25-2017

SAMPLE ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	TPH GRO C6-C10	TPH DRO C10-C28	TPH DRO C28-C36	Chlorides
Trench Line SP-1	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	176
Trench Line SP-2	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	448
Trench Line SP-3	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	272
Trench Line SP-4	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	352
Trench Line SP-5	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	336

VI. Action Plan

The entire horizontal area of the impacted soil will be excavated to a depth of 4' with the exception of the area within 34' on each side of of the gas and water line that inwithin the contaminated area. The open ditch ocontaining the Lucid Energy Group lines was impacted by this release, however, surface sampling of the backfilled ditch confirm the soil used to backfill the ditch was not contaminated. A 20 mil liner will be installed on the bottom of the excavation. This liner will protect any chloride contamination being left in place from further migration. Confirmation samples of the sides and bottom of the excavation will be taken to confirm horizontal extent and to document any contamination being left in place.

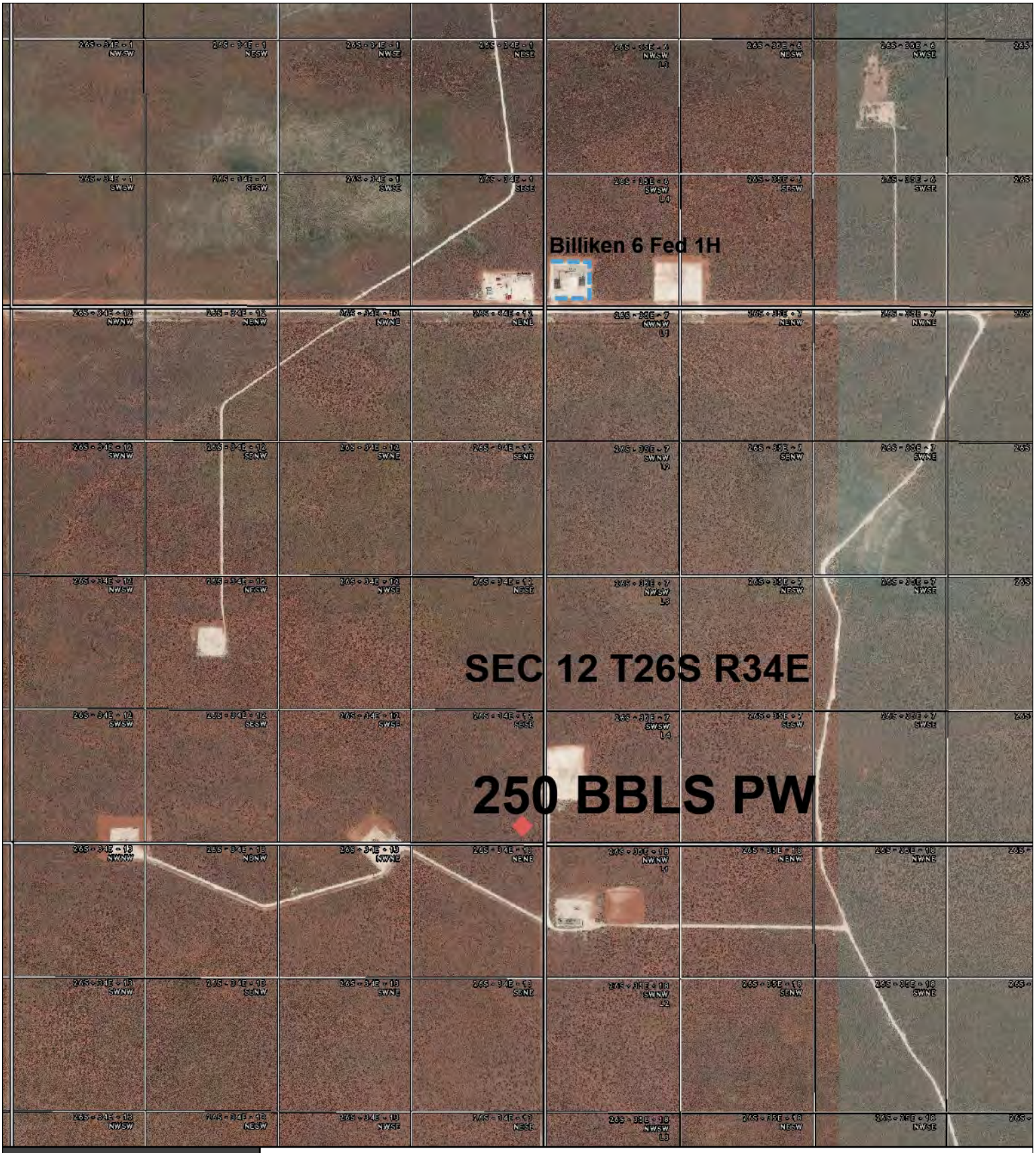
The excavation will be backfilled with uncontaminated soil and returned to natural grade. Reseeding according to the appropriate BLM requirements will be completed.

Upon completion of this work plan, all necessary documentation and reports will be completed and distributed to the appropriate regulartory agencies.

VII. Figures & Appendices

Figure 1 - Vicinity Map
Figure 2 - Site Plan
Appendix A – C-141
Appendix B – Groundwater
Appendix C – Analytical Results
Appendix D – Photo Documentation

Figure 1
Vicinity Map



Spill 3/21/2017

devon

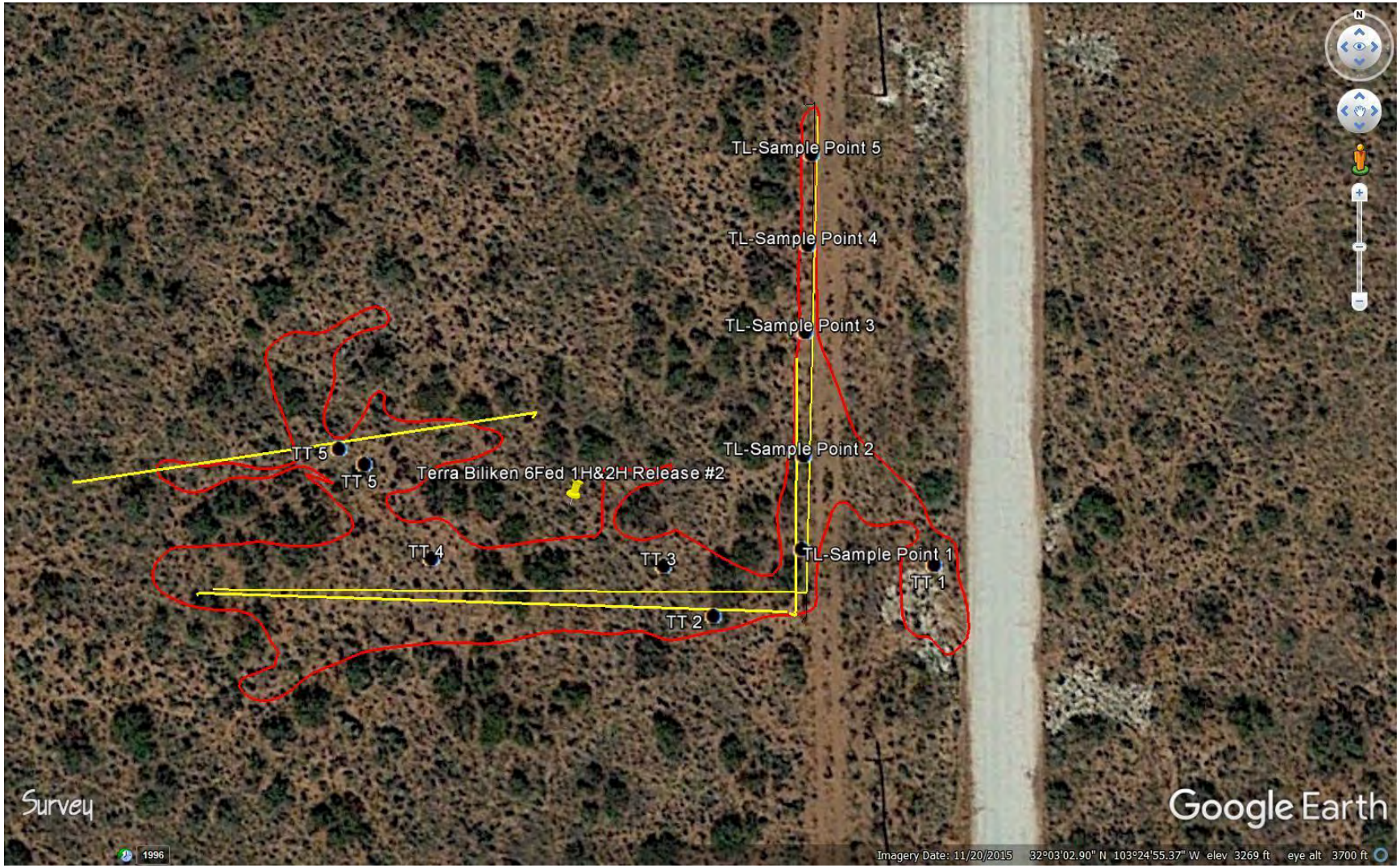
This map is for illustrative purposes only and is neither a legally recorded map nor survey and is not intended to be used as one. Devon makes no warranty, representation, or guarantee of any kind regarding this map.

WGS_1984_Web_Mercator_Auxiliary_Sphere
Prepared by: Menoud
Map is current as of: 23-Mar-2017

N

Miles
0 0.07 0.14 0.28 1:14,228

Figure 2
Site Plan


TL-Sample Point 5
TL-Sample Point 4
TL-Sample Point 3
TL-Sample Point 2
TL-Sample Point 1
TT 5
TT 5
Terra Biliken 6Fed 1H&2H Release #2
TT 4
TT 3
TT 1
TT 2
Survey
Google Earth
1996
Imagery Date: 11/20/2015 32°03'02.90" N 103°24'55.37" W elev 3269 ft eye alt 3700 ft

Appendix A
C-141

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: **Devon Energy Production Co LP (6137)**		Contact: **Stephen Richards, Devon Completions Foreman**	
Address: **PO Box 250 Artesia, NM 88211**		Telephone No. **575-252-3717**	
Facility Name: **Billiken 6 Federal 1H**		Facility Type : **Oil Well**	
Surface Owner: **Federal**	Mineral Owner: **Federal**		API No. **30-025-42685**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	**12**	**26S**	**34E**	**160**	**SOUTH**	**210**	**EAST**	**LEA**

Latitude: 32.051182 N Longitude: -103.415898 W

NATURE OF RELEASE

Type of Release: **TREATED WATER**	Volume of Release: **250 BBLS**	Volume Recovered: **230 BBLS**
Source of Release **LAY FLAT WATER LINE**	Date and Hour of Occurrence **3/21/2017; 4:17 PM**	Date and Hour of Discovery **3/21/2017; 4:17 PM**
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **BLM: Shelly Tucker** **OCD: Olivia Yu**	
By Whom? **Mike Shoemaker, EHS Professional**	Date and Hour: **BLM: 3/22/17, 12:33 PM** **OCD: 3/22/17, 12:42 PM**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **N/A**	

If a Watercourse was Impacted, Describe Fully.* **N/A**

Describe Cause of Problem and Remedial Action Taken.*

While transferring treated water from a frac pond to the location, the lay flat hose ruptured. A 2 inch split developed and released treated water on the ground. The pump was shut down and the hose was repaired.

Describe Area Affected and Cleanup Action Taken.*

The spill area affected is approximately 200' x 6' running North and South and 195' x 40' running East and West on the pipeline easement following the lease road. A central location of the spill is: Lat – N 32.051182; Long – W -103.415898 and is approximately 1.01 miles South of the Billiken 6 Fed #1. An estimated 250 barrels of treated produced water was spilled, a vacuum truck was dispatched, and 230 barrels was recovered. A remediation contractor will be contacted.

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

Signature: Denise Menoud	OIL CONSERVATION DIVISION	
Printed Name: **Denise Menoud**	Approved by Environmental Specialist:	
Title: **Field Admin Support**	Approval Date:	Expiration Date:
E-mail Address: **Denise.Menoud@dvn.com**	Conditions of Approval:	Attached ☐
Date: **3/23/2017** Phone: **575-746-5544**		

* Attach Additional Sheets If Necessary

Appendix B
Groundwater

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

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

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02291	CUB	LE	1	1	2	06	26S	34E	640825	3550140*	220	160	60
C 02292 POD1	C	LE	4	1	2	06	26S	34E	640992	3549987	200	140	60
C 03441 POD1	C	LE	4	1	2	06	26S	34E	640971	3550039	250		
C 03442 POD1	C	LE	4	1	2	06	26S	34E	641056	3550028	251		

Average Depth to Water: **150 feet**

Minimum Depth: **140 feet**

Maximum Depth: **160 feet**

Record Count: 4

PLSS Search:

Township: 26S **Range:** 34E

***UTM location was derived from PLSS - see Help**

Appendix C
Analytical Results

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 06, 2017

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: TER -17-002

Enclosed are the results of analyses for samples received by the laboratory on 03/31/17 14:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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 (V1, 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	03/31/2017	Sampling Date:	03/29/2017
Reported:	04/06/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	Cool & Intact
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: BH -1 4' (H700861-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	**0.114**	0.050	04/05/2017	ND	2.19	110	2.00	0.503	
Toluene*	**0.233**	0.050	04/05/2017	ND	2.13	107	2.00	0.718	
Ethylbenzene*	<0.050	0.050	04/05/2017	ND	2.18	109	2.00	0.693	
Total Xylenes*	<0.150	0.150	04/05/2017	ND	6.19	103	6.00	0.676	
Total BTEX	**0.347**	0.300	04/05/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.7 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**11600**	16.0	04/05/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/04/2017	ND	203	101	200	1.44	
DRO >C10-C28	**20.5**	10.0	04/04/2017	ND	220	110	200	2.30	
EXT DRO >C28-C36	**36.6**	10.0	04/04/2017	ND					

Surrogate: 1-Chlorooctane *105 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *113 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	03/31/2017	Sampling Date:	03/29/2017
Reported:	04/06/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	Cool & Intact
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: BH -1 8' (H700861-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2017	ND	2.19	110	2.00	0.503	
Toluene*	<0.050	0.050	04/05/2017	ND	2.13	107	2.00	0.718	
Ethylbenzene*	<0.050	0.050	04/05/2017	ND	2.18	109	2.00	0.693	
Total Xylenes*	<0.150	0.150	04/05/2017	ND	6.19	103	6.00	0.676	
Total BTEX	<0.300	0.300	04/05/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.1 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**22800**	16.0	04/05/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/04/2017	ND	203	101	200	1.44	
DRO >C10-C28	**14.9**	10.0	04/04/2017	ND	220	110	200	2.30	
EXT DRO >C28-C36	**18.4**	10.0	04/04/2017	ND					

Surrogate: 1-Chlorooctane *115 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *117 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	03/31/2017	Sampling Date:	03/29/2017
Reported:	04/06/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	Cool & Intact
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: BH -1 10' (H700861-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2017	ND	2.19	110	2.00	0.503	
Toluene*	<0.050	0.050	04/05/2017	ND	2.13	107	2.00	0.718	
Ethylbenzene*	<0.050	0.050	04/05/2017	ND	2.18	109	2.00	0.693	
Total Xylenes*	<0.150	0.150	04/05/2017	ND	6.19	103	6.00	0.676	
Total BTEX	<0.300	0.300	04/05/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.0 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**14600**	16.0	04/05/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/04/2017	ND	203	101	200	1.44	
DRO >C10-C28	**12.0**	10.0	04/04/2017	ND	220	110	200	2.30	
EXT DRO >C28-C36	**14.4**	10.0	04/04/2017	ND					

Surrogate: 1-Chlorooctane *98.4 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *104 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	03/31/2017	Sampling Date:	03/29/2017
Reported:	04/06/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	Cool & Intact
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: BH -2 4' (H700861-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2017	ND	2.19	110	2.00	0.503	
Toluene*	<0.050	0.050	04/05/2017	ND	2.13	107	2.00	0.718	
Ethylbenzene*	<0.050	0.050	04/05/2017	ND	2.18	109	2.00	0.693	
Total Xylenes*	<0.150	0.150	04/05/2017	ND	6.19	103	6.00	0.676	
Total BTEX	<0.300	0.300	04/05/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.9 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6200**	16.0	04/05/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/04/2017	ND	203	101	200	1.44	
DRO >C10-C28	**15.7**	10.0	04/04/2017	ND	220	110	200	2.30	
EXT DRO >C28-C36	**15.7**	10.0	04/04/2017	ND					

Surrogate: 1-Chlorooctane *92.6 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *97.7 %* *34.7-157*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	03/31/2017	Sampling Date:	03/29/2017
Reported:	04/06/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	Cool & Intact
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: BH -2 5.5' (H700861-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2017	ND	2.19	110	2.00	0.503	
Toluene*	<0.050	0.050	04/05/2017	ND	2.13	107	2.00	0.718	
Ethylbenzene*	<0.050	0.050	04/05/2017	ND	2.18	109	2.00	0.693	
Total Xylenes*	<0.150	0.150	04/05/2017	ND	6.19	103	6.00	0.676	
Total BTEX	<0.300	0.300	04/05/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.4 %* *72-148*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**20000**	16.0	04/05/2017	ND	432	108	400	3.64	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/04/2017	ND	203	101	200	1.44	
DRO >C10-C28	**15.2**	10.0	04/04/2017	ND	220	110	200	2.30	
EXT DRO >C28-C36	**17.9**	10.0	04/04/2017	ND					

Surrogate: 1-Chlorooctane *102 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *108 %* *34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

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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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Safety and Environmental Solutions	**BILL TO**	
Project Manager:	Bob Allen	P.O. #:	
Address:	703 East Clinton, PO Box 1613	Company:	Same
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	575 397-0510 Fax #: 575 393-4388	Address:	
Project #:	TER-17-002 Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:		Phone #:	
Sampler Name:	SADIA BOYER	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING DATE	SAMPLING TIME	ANALYSIS REQUEST: Chloride	TPH (8015 EXT)	BTEX
H200861													2017				
1	BH-1, 4 FT	G	1			X					X		3/29	1225	X	X	X
2	BH-1, 8 FT	1	1			1					1		1	1250	1	1	1
3	BH-1, 10 FT	1	1			1					1		1	1330	1	1	1
4	BH-2, 4 FT	1	1			1					1		1	1540	1	1	1
5	BH-2, 5.5 FT	G	1			X					X		3/29	1550	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 3/31/17	Received By:	
	Time:		
Relinquished By:	Date: 3-31-17	Received By:	Tamara Oldaker
	Time: 453		
Delivered By: (Circle One)		Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No	CHECKED BY: (Initials) TO - #15
Sampler - UPS - Bus - Other:	2.4°		

Phone Result: ☐ Yes ☒ No Add'l Phone #:
Fax Result: ☐ Yes ☒ No Add'l Fax #:
REMARKS:

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 13, 2017

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: TER -17-002

Enclosed are the results of analyses for samples received by the laboratory on 04/06/17 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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 (V1, 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 1 4' (H700922-01)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.6 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	04/10/2017	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *82.4 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *82.2 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 1 6' (H700922-02)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.6 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	04/10/2017	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *79.2 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *79.0 %* *34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 2 4' (H700922-03)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.9 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *94.4 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *96.6 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 2 6' (H700922-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.2 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *90.2 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *86.1 %* *34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 3 10' (H700922-05)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.0 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *98.3 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *94.0 %* *34.7-157*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 3 12' (H700922-06)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.6 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *87.3 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *85.5 %* *34.7-157*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 4 10' (H700922-07)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.9 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *84.2 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *83.3 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 4 12' (H700922-08)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.0 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *87.8 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *85.7 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 5 10' (H700922-09)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**96.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *92.9 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *95.2 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 5 12' (H700922-10)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.6 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *94.1 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *96.8 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

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CARDINAL Laboratories

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Analytical Results For:

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Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 3 6' (H700922-11)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.5 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**12800**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *87.4 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *91.0 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 4 8' (H700922-12)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/11/2017	ND	1.94	97.1	2.00	1.51	
Toluene*	<0.050	0.050	04/11/2017	ND	1.80	89.9	2.00	1.30	
Ethylbenzene*	<0.050	0.050	04/11/2017	ND	1.79	89.5	2.00	1.11	
Total Xylenes*	<0.150	0.150	04/11/2017	ND	5.08	84.6	6.00	1.12	
Total BTEX	<0.300	0.300	04/11/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.2 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4660**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *92.8 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *95.9 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/06/2017	Sampling Date:	04/05/2017
Reported:	04/13/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 5 8' (H700922-13)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/10/2017	ND	1.64	82.2	2.00	5.42	
Toluene*	<0.050	0.050	04/10/2017	ND	1.72	85.9	2.00	5.58	
Ethylbenzene*	<0.050	0.050	04/10/2017	ND	1.76	87.8	2.00	5.67	
Total Xylenes*	<0.150	0.150	04/10/2017	ND	4.99	83.2	6.00	5.44	
Total BTEX	<0.300	0.300	04/10/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.4 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**15800**	16.0	04/11/2017	ND	416	104	400	3.77	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/10/2017	ND	207	104	200	4.30	
DRO >C10-C28	<10.0	10.0	04/10/2017	ND	219	109	200	3.12	
EXT DRO >C28-C36	<10.0	10.0	04/10/2017	ND					

Surrogate: 1-Chlorooctane *95.5 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *98.9 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1 of 2

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Safety and Environmental Solutions
Project Manager:	Bob Allen
Address:	703 East Clinton, PO Box 1613
City:	Hobbs State: NM Zip: 88240
Phone #:	575 397-0510 Fax #: 575 393-4388
Project #:	TER-17-002 Project Owner:
Project Name:	
Project Location:	
Sampler Name:	Jerry Fore

BILL TO

P.O. #:	
Company:	Same
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

TPH (8015M)
BTEX
Chlorides

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME
H10092														
1	TP-1 4FT	G	1			X					X		04/05	1100
2	TP-1 6FT	G	1			X					X		04/05	1120
3	TP-2 4FT	G	1			X					X		04/05	1300
4	TP-2 6FT	G	1			X					X		04/05	1330
5	TP-3 10FT	G	1			X					X		04/05	1455
6	TP-3 12FT	G	1			X					X		04/05	1430
7	TP-4 10FT	G	1			X					X		04/05	1530
8	TP-4 12FT	G	1			X					X		04/05	1545
9	TP-5 10FT	G	1			X					X		04/05	1635
10	TP-5 12FT	G	1			X					X		04/05	1645

Relinquished By:	Date: 04/06/17	Received By:	
	Time: 1600		
Relinquished By:	Date: 4/6/17	Received By:	
	Time: 4:55		
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	13.1°C	Sample Condition Cool: ☐ Yes ☑ No Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) T.O. #15

Phone Result: ☐ Yes ☒ No Add'l Phone #:
Fax Result: ☐ Yes ☒ No Add'l Fax #:
REMARKS:

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 2

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Safety and Environmental Solutions	**BILL TO**	
Project Manager:	Bob Allen	P.O. #:	
Address:	703 East Clinton, PO Box 1613	Company:	Same
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	575 397-0510 Fax #: 575 393-4388	Address:	
Project #:	TER-17-002 Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Jerry Fosa	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	ANALYSIS REQUEST: TPH (8015 Ext)	BTEX	Chlorides
H700928-2													2017				
11	II 3 6 ST	G	1			X					X		04/05	1415	X	X	X
12	II 4 8 ST	G	1			X					X		04/05	1545	X	X	X
13	II 5 8 ST	G	1			X					X		04/05	1615	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 4/6/17 Time:	Received By:	
Relinquished By:	Date: 4-6-17 Time: 4:55	Received By:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	13.1°C	Sample Condition Cool: Yes / No Intact: Yes / No	CHECKED BY: (Initials) T.O. #75

Phone Result:	☐ Yes	☒ No	Add'l Phone #:
Fax Result:	☐ Yes	☒ No	Add'l Fax #:
REMARKS:			

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

April 25, 2017

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: TER -17-002

Enclosed are the results of analyses for samples received by the laboratory on 04/20/17 7:58.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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 (V1, 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. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/20/2017	Sampling Date:	04/19/2017
Reported:	04/25/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TRENCH LINE SP-1 (H701039-01)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.1 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/21/2017	ND	188	93.9	200	1.40	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	195	97.4	200	0.145	
EXT DRO >C28-C36	<10.0	10.0	04/21/2017	ND					

Surrogate: 1-Chlorooctane *73.3 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *72.4 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/20/2017	Sampling Date:	04/19/2017
Reported:	04/25/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TRENCH LINE SP-2 (H701039-02)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**448**	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	207	104	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	04/21/2017	ND					

Surrogate: 1-Chlorooctane *98.4 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *94.5 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/20/2017	Sampling Date:	04/19/2017
Reported:	04/25/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TRENCH LINE SP-3 (H701039-03)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.7 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	207	104	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	04/21/2017	ND					

Surrogate: 1-Chlorooctane *88.8 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *85.9 %* *34.7-157*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

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Received:	04/20/2017	Sampling Date:	04/19/2017
Reported:	04/25/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TRENCH LINE SP-4 (H701039-04)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.1 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**352**	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	207	104	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	04/21/2017	ND					

Surrogate: 1-Chlorooctane *97.2 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *96.1 %* *34.7-157*

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Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	04/20/2017	Sampling Date:	04/19/2017
Reported:	04/25/2017	Sampling Type:	Soil
Project Name:	TER -17-002	Sampling Condition:	** (See Notes)
Project Number:	TER - 17- 002	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TRENCH LINE SP-5 (H701039-05)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/22/2017	ND	1.94	96.8	2.00	0.897	
Toluene*	<0.050	0.050	04/22/2017	ND	1.85	92.7	2.00	1.13	
Ethylbenzene*	<0.050	0.050	04/22/2017	ND	1.87	93.3	2.00	0.506	
Total Xylenes*	<0.150	0.150	04/22/2017	ND	5.32	88.7	6.00	0.459	
Total BTEX	<0.300	0.300	04/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.6 %* *72-148*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**336**	16.0	04/24/2017	ND	448	112	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	04/21/2017	ND	198	98.8	200	1.91	
DRO >C10-C28	<10.0	10.0	04/21/2017	ND	207	104	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	04/21/2017	ND					

Surrogate: 1-Chlorooctane *92.9 %* *28.3-164*

Surrogate: 1-Chlorooctadecane *87.3 %* *34.7-157*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

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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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name:	Safety and Environmental Solutions
Project Manager:	Bob Allen
Address:	703 East Clinton, PO Box 1613
City:	Hobbs State: NM Zip: 88240
Phone #:	575 397-0510 Fax #: 575 393-4388
Project #:	TCR-17-002 Project Owner:
Project Name:	
Project Location:	
Sampler Name:	

BILL TO

P.O. #:	
Company:	Same
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	TPH (8015 Ext)	CHLORIDES
H701039	1 TRENCH LINE SP-1	G	1			X					X		04/19	1500	X	X	X
	2 TRENCH LINE SP-2	G	1			X					X			1515	X	X	X
	3 TRENCH LINE SP-3	G	1			X					X			1530	X	X	X
	4 TRENCH LINE SP-4	G	1			X					X			1545	X	X	X
	5 TRENCH LINE SP-5	G	1			X					X		04/19	1600	X	X	X

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 04/20/17	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
Relinquished By:	Time: 0800	Received By:	Fax Result: ☐ Yes ☐ No Add'l Fax #:
Delivered By: (Circle One)	Date: 4/20/17	Sample Condition: Cool ☐ Yes ☑ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Time: 7:58a	6.6°	T.O. #15

REMARKS:

Appendix D
Site Photos