Ruth Co SWD

1RP-4572-0

Delineation Report

Section 30, Township 18S, Range 39E

Lea County, New Mexico

March 23, 2017

Prepared for:

RXSoil, Inc.
201 Main Street, Suite #1360
Fort Worth, TX 76102

By:

Safety & Environmental Solutions, Inc.

INFORMATION ONLY

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I. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged to perform delineation services on Ruth Co SWD located in Section 30, Township 18S, Range 39E, Lea County, New Mexico. According to the C-141: As the result of a lightning strike, fluids were released from a 750 bbl gun barrel on location. The C-141 notes that all fluids on the ground will be picked up and the bad soil will be hauled off and good dirt brought in. (Appendix D)

II. Surface and Ground Water

According the New Mexico Office of the State Engineer website, there is no record of groundwater in the immediate vicinity, but that average depth to water for the area is 76' bgs. (Appendix E)

III. 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 5000 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**

IV. Work Performed

From November 16, 2016 to December 9, 2016, Dave Boyer, SESI, was on location multiple times. The site and impacted areas were photographed (Appendix B). Boreholes were installed and samples were taken. 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)(Appendix A). The results are represented in the following table:

Soil Sample Results: Cardinal Laboratories 12-16-16

Sample ID	Chlorides (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH EXT DRO (mg/kg)	Bottom of caliche pad/ top of sand (ft.)	Bottom of underlying sand/ top of native caliche (ft.)
BH-1, 0.9-1.1’	<16.0	<10.0	<10.0	<10.0	0.6	5.05
BH-1, 1.9-2.1’	<16.0					
BH-1, 2.7-2.9’	<16.0					
BH-1, 3.5-4’	32.0					
BH-1, 8’	48.0					
BH-2, 0.9-1.1’	32.0	<10.0	<10.0	<10.0	0.4	6.1
BH-2, 1.9-2.1’	64.0					
BH-2, 2.7-2.9’	80.0					
BH-2, 3.5-4’	128					
BH-2, 8’	96.0					
BH-3, 0.9-1.1’	80.0	<10.0	<10.0	<10.0	0.5	N/A
BH-3, 1.9-2.1’	16.0					
BH-3, 2.8-3.0’	16.0					
BH-3, 3.5-4’	64.0					
BH-3, 8’	32.0					
BH-4, 0.9-1.1’	96.0	<10.0	<10.0	<10.0	0.5	7.0
BH-4, 1.9-2.1’	16.0					
BH-4, 2.9-3.1’	16.0					
BH-4, 3.5-4’	16.0					
BH-4, 8’	32.0					
BH-5, 0.9-1.1’	32.0	<10.0	<10.0	<10.0	1.4	6.1
BH-5, 1.9-2.1’	32.0					
BH-5, 2.9-3.1’	48.0					
BH-5, 3.5-4’	48.0					
BH-5, 8’	64.0					
BH-6, 0.9-1.1’	688	<10.0	<10.0	<10.0	1.05	6.65
BH-6, 1.9-2.1’	400					
BH-6, 2.9-3.1’	192					
BH-6, 3.5-4’	80.0					
BH-6, 8’	32.0					
BH-7, 0.9-1.1’	480	<10.0	<10.0	<10.0	1.0	6.1
BH-7, 1.9-2.1’	64.0					
BH-7, 2.9-3.1’	16.0					
BH-7, 3.5-4’	32.0					
BH-7, 8’	<16.0					

BH-8, 0.9-1.1’	1,090	<10.0	<10.0	<10.0	1.3	All sand to 8’
BH-8, 1.9-2.1’	64.0					
BH-8, 2.9-3.1’	144					
BH-8, 3.5-4’	144					
BH-8, 8’	<16.0					
BH-9, 0.9-1.1’	1,250	<10.0	<10.0	<10.0	1.4	5.6
BH-9, 1.9-2.1’	96.0					
BH-9, 2.9-3.1’	80.0					

BH-9, 3.5-4’	48.0					
BH-9, 8’	16.0					
BH-10, 0.9-1.1’	592	<10.0	<10.0	<10.0	0.75	6.15
BH-10, 1.9-2.1’	48.0					
BH-10, 2.9-3.1’	64.0					
BH-10, 3.5-4’	128					
BH-10, 8’	32.0					
BH-11, 0.8-1.2’	2,560	<10.0	348	148	1.2	N/A
BH-11, 1.0-2.1’	832	<10.0	<10.0	13.5		
BH-11, 2.9-3.1’	240					
BH-11, 3.5-4.0’	272					
BH-11, 8’	N/T					
BH-12, 0.9-1.1’	48.0	<10.0	<10.0	<10.0	0.7	5.95
BH-12, 1.9-2.1’	32.0					
BH-12, 2.8-3.0’	32.0					
BH-12, 3.5-4.0’	32.0					
BH-12, 8’	N/T					
BH-13, 0.9-1.1’	80.0	<10.0	<10.0	<10.0	0.8	5.9
BH-13, 1.9-2.1’	16.0					
BH-13, 2.8-3.0’	<16.0					
BH-13, 3.5-4.0’	<16.0					
BH-13, 8’	N/T					
BH-14, 0.9-1.1’	96.0	<10.0	28.0	36.1	1.1	All sand to 8’
BH-14, 1.9-2.1’	48.0					
BH-14, 2.9-3.1’	48.0					
BH-14, 3.5-4.0’	48.0					
BH-14, 8’	N/T					
S-1, 0-0.85’	880	<10.0	<10.0	<10.0		
S-2, 0-0.55’	208	<10.0	26.7	21.0		
S-3, 0-0.55’	224	<10.0	<10.0	<10.0		
S-4, 0-0.55’	32.0	<10.0	<10.0	<10.0		
OS-1, 0-0.5’	4,080	493	13,500	5,430		
OS-2, 0-0.5’	4,000	<100	2,980	1,300		
OS-3, 0-0.5’	6,660	131	7,980	3,930		

N/T – Not tested
N/A – Info not available

V. Action Plan

Due to the depth to groundwater at this site, the entire area of impact will be excavated, placed into containment and cleaned through the RXSoil process. Pad site will be tested horizontally and vertically during excavation to ensure all contaminant have been removed to standards set by EMNRD. Clean material will then be backfilled and stabilized to operational standards.

VI. Figures & Appendices

Appendix A – Analytical Results
Appendix B – Site Photos
Appendix C – Site Map
Appendix D -- C141
Appendix E – Groundwater

Appendix A
Analytical Results

CARDINAL Laboratories

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

December 16, 2016

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: RXS-16-005

Enclosed are the results of analyses for samples received by the laboratory on 12/13/16 10:15.

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:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-1 0.9-1.1' (H602785-01)

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	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*90.0 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*99.1 %*	*28-171*

Sample ID: BH-1 1.9-2.1' (H602785-02)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-1 2.7-2.9' (H602785-03)

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	12/14/2016	ND	416	104	400	3.77	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
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703 East Clinton
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Fax To: (575) 393-4388

Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-2 0.9-1.1' (H602785-04)

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	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*82.9 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*81.6 %*	*28-171*

Sample ID: BH-2 1.9-2.1' (H602785-05)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-2 2.7-2.9' (H602785-06)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	12/14/2016	ND	416	104	400	3.77	

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Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-3 0.9-1.1' (H602785-07)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*78.9 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*79.9 %*	*28-171*

Sample ID: BH-3 1.9-2.1' (H602785-08)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-3 2.8-3.0' (H602785-09)

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	12/14/2016	ND	416	104	400	3.77	

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Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-4 0.9-1.1' (H602785-10)

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	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*76.1 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*83.9 %*	*28-171*

Sample ID: BH-4 1.9-2.1' (H602785-11)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-4 2.9-3.1' (H602785-12)

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	12/14/2016	ND	416	104	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-5 0.9-1.1' (H602785-13)

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	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*85.4 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*90.1 %*	*28-171*

Sample ID: BH-5 1.9-2.1' (H602785-14)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-5 2.9-3.1' (H602785-15)

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	12/14/2016	ND	416	104	400	3.77	

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Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-6 0.9-1.1' (H602785-16)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**688**	16.0	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*87.0 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*91.0 %*	*28-171*

Sample ID: BH-6 1.9-2.1' (H602785-17)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**400**	16.0	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-6 2.9-3.1' (H602785-18)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	12/14/2016	ND	416	104	400	3.77	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
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Fax To: (575) 393-4388

Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-7 0.9-1.1' (H602785-19)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**480**	16.0	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*89.3 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*104 %*	*28-171*

Sample ID: BH-7 1.9-2.1' (H602785-20)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-7 2.9-3.1' (H602785-21)

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	12/14/2016	ND	416	104	400	3.77	

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Analytical Results For:

Safety & Environmental Solutions
Bob Allen
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Fax To: (575) 393-4388

Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-8 0.9-1.1' (H602785-22)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1090**	16.0	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*80.8 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*96.4 %*	*28-171*

Sample ID: BH-8 1.9-2.1' (H602785-23)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-8 2.9-3.1' (H602785-24)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	12/14/2016	ND	416	104	400	3.77	

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Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-9 0.9-1.1' (H602785-25)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1250**	16.0	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*86.9 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*91.0 %*	*28-171*

Sample ID: BH-9 1.9-2.1' (H602785-26)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-9 2.9-3.1' (H602785-27)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	12/14/2016	ND	416	104	400	3.77	

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Received:	12/13/2016	Sampling Date:	12/07/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-10 0.9-1.1' (H602785-28)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**592**	16.0	12/14/2016	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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*89.1 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*106 %*	*28-171*

Sample ID: BH-10 1.9-2.1' (H602785-29)

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	12/14/2016	ND	416	104	400	3.77	

Sample ID: BH-10 2.9-3.1' (H602785-30)

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	12/14/2016	ND	416	104	400	3.77	

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-11 0.8-1.2' (H602785-31)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2560**	16.0	12/15/2016	ND	400	100	400	3.92	QM-07

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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	**348**	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	**148**	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*81.9 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*106 %*	*28-171*

Sample ID: BH-11 1.9-2.1' (H602785-32)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**832**	16.0	12/15/2016	ND	400	100	400	3.92	

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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	**13.5**	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*83.3 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*86.0 %*	*28-171*

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-11 2.9-3.1' (H602785-33)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-11 3.5-4.0 (H602785-34)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-12 0.9-1.1' (H602785-35)

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	12/15/2016	ND	400	100	400	3.92	

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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*88.6 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*97.8 %*	*28-171*

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-12 1.9-2.1' (H602785-36)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-12 2.8-3.0' (H602785-37)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-12 3.5-4.0' (H602785-38)

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	12/15/2016	ND	400	100	400	3.92	

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-13 0.9-1.1' (H602785-39)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	12/15/2016	ND	400	100	400	3.92	

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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*86.4 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*96.2 %*	*28-171*

Sample ID: BH-13 1.9-2.1' (H602785-40)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-13 2.8-3.0' (H602785-41)

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	12/15/2016	ND	400	100	400	3.92	

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-13 3.5-4.0' (H602785-42)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-14 0.9-1.1' (H602785-43)

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	12/15/2016	ND	400	100	400	3.92	

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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	**28.0**	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	**36.1**	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*82.3 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*92.1 %*	*28-171*

Sample ID: BH-14 1.9-2.1' (H602785-44)

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	12/15/2016	ND	400	100	400	3.92	

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: BH-14 2.9-3.1' (H602785-45)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: BH-14 3.5-4.0' (H602785-46)

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	12/15/2016	ND	400	100	400	3.92	

Sample ID: S-1 0-0.85 (H602785-47)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**880**	16.0	12/15/2016	ND	400	100	400	3.92	

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	12/13/2016	ND	209	105	200	1.47	
DRO >C10-C28	<10.0	10.0	12/13/2016	ND	228	114	200	0.353	
EXT DRO >C28-C35	<10.0	10.0	12/13/2016	ND					

Surrogate: 1-Chlorooctane	*87.3 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*103 %*	*28-171*

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: S-2 0-0.55 (H602785-48)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	12/15/2016	ND	400	100	400	3.92	

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	12/14/2016	ND	189	94.6	200	0.431	
DRO >C10-C28	**26.7**	10.0	12/14/2016	ND	199	99.5	200	0.921	
EXT DRO >C28-C35	**21.0**	10.0	12/14/2016	ND					

Surrogate: 1-Chlorooctane	*86.2 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*94.7 %*	*28-171*

Sample ID: S-3 0-0.55' (H602785-49)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	12/15/2016	ND	400	100	400	3.92	

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	12/14/2016	ND	189	94.6	200	0.431	
DRO >C10-C28	<10.0	10.0	12/14/2016	ND	199	99.5	200	0.921	
EXT DRO >C28-C35	<10.0	10.0	12/14/2016	ND					

Surrogate: 1-Chlorooctane	*80.3 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*89.6 %*	*28-171*

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Received:	12/13/2016	Sampling Date:	12/09/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: S-4 0-0.55' (H602785-50)

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	12/15/2016	ND	400	100	400	3.92	

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	12/14/2016	ND	189	94.6	200	0.431	
DRO >C10-C28	<10.0	10.0	12/14/2016	ND	199	99.5	200	0.921	
EXT DRO >C28-C35	<10.0	10.0	12/14/2016	ND					

Surrogate: 1-Chlorooctane	*68.1 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*81.8 %*	*28-171*

Sample ID: OS-1 (H602785-51)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4080**	16.0	12/16/2016	ND	416	104	400	0.00	QM-07

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**493**	100	12/14/2016	ND	189	94.6	200	0.431	
DRO >C10-C28	**13500**	100	12/14/2016	ND	199	99.5	200	0.921	
EXT DRO >C28-C35	**5430**	100	12/14/2016	ND					

Surrogate: 1-Chlorooctane	*112 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*478 %*	*28-171*

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:	12/13/2016	Sampling Date:	12/12/2016
Reported:	12/16/2016	Sampling Type:	Soil
Project Name:	RXS-16-005	Sampling Condition:	Cool & Intact
Project Number:	RXS-16-005	Sample Received By:	Celey D. Keene
Project Location:	NONE GIVEN		

Sample ID: OS-2 (H602785-52)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4000**	16.0	12/16/2016	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	<100	100	12/14/2016	ND	189	94.6	200	0.431	
DRO >C10-C28	**2980**	100	12/14/2016	ND	199	99.5	200	0.921	
EXT DRO >C28-C35	**1300**	100	12/14/2016	ND					

Surrogate: 1-Chlorooctane	*85.2 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*158 %*	*28-171*

Sample ID: OS-3 (H602785-53)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6660**	16.0	12/16/2016	ND	416	104	400	0.00	

TPH 8015M mg/kg **Analyzed By: MS** **S-06**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	**131**	100	12/14/2016	ND	189	94.6	200	0.431	
DRO >C10-C28	**7980**	100	12/14/2016	ND	199	99.5	200	0.921	
EXT DRO >C28-C35	**3930**	100	12/14/2016	ND					

Surrogate: 1-Chlorooctane	*100 %*	*35-147*
Surrogate: 1-Chlorooctadecane	*220 %*	*28-171*

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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

Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside if QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 1

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 #:	RXS-16-005 Project Owner:
Project Name:	
Project Location:	
Sampler Name:	David Boyer

BILL TO

P.O. #:	
Company:	Same RX Soil
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
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: Chlorides	TPH (8015 mod) Ext.*
H602785-01	BH-1 0.9-1.1'	G	1			X					X		12/7/2016	1150	X	X
02	BH-1 1.9-2.1'													1152		
03	BH-1 2.7-2.9'													1154		
04	BH-2 0.9-1.1'													1220		X
05	BH-2 1.9-2.1'													1222		
06	BH-2 2.7-2.9'													1224		
07	BH-3 0.9-1.1'													1233		X
08	BH-3 1.9-2.1'													1233		
09	BH-3 2.8-3.0'													1235		
10	BH-4 0.9-1.1	G	1			X					X		12/7/2016	1302	X	X

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Relinquished By:	Date: 12/12/16	Received By:	
	Time: 10:15		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 2.8°C

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) CK #75

Phone Result: ☐ Yes ☒ No Add'l Phone #:
Fax Result: ☐ Yes ☒ No Add'l Fax #:
REMARKS:
* Ext DRO added 12/16/16 as per Dave. CK 12/16/16

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 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 #:	RX5-16-005 Project Owner:
Project Name:	
Project Location:	
Sampler Name:	DAVID BOYER

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	SAMPLING TIME	CHLORIDES	TPH (8015 Mod) Ext *										
H602785-													2016													
11	BH-4 1.9-2.1'	G	1			X					X		12/7	1302	X											
12	BH-4 2.9-3.1'													1304												
13	BH-5 0.9-1.1'													1335		X										
14	BH-5 1.9-2.1'													1335												
15	BH-5 2.9-3.1'												12/7	1339												
16	BH-6 0.9-1.1													1355		X										
17	BH-6 1.9-2.1													1355												
18	BH-6 2.9-3.1													1355												
19	BH-7 0.9-1.1													1420		X										
20	BH-7 1.9-2.1	G	1			X					X		12/7	1420	X											

Relinquished By:	Date: 12/13/16	Received By:	
	Time: 10:15		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other:

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) CM #75

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

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 3 of 6

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 #:	RX5-16-005	Project Owner:	City:
Project Name:			State: Zip:
Project Location:			Phone #:
Sampler Name:	DAVID Boyer		Fax #:

ANALYSIS REQUEST: CHLORIDES; TPH (8015 Mod) Ext*

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 (2016)	TIME	CHLORIDES	TPH (8015 Mod) Ext*
H602785-21	BH-7 2.9-3.1'	G	1			X					X		12/7	1422	X	
22	BH-8 0.9-1.1													1440		X
23	BH-8 1.9-2.1													1442		
24	BH-8 2.9-3.1'													1446		
25	BH-9 0.9-1.1'													1650		X
26	BH-9 1.9-2.1													1652		
27	BH-9 2.9-3.1													1650		
28	BH-10 0.9-1.1													1710		X
29	BH-10 1.9-2.1													1712		
30	BH-10 2.9-3.1	G	1			X					X		12/7	1710	X	

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Relinquished By: D. Boyer	Date: 12/13/16	Received By: Cyhleene	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 10:15		Fax Result: ☐ Yes ☒ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 2.8°C

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) CK #75

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 6

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 #:	RX5-16-005	Project Owner:	City:
Project Name:			State: Zip:
Project Location:			Phone #:
Sampler Name:	David Boyer		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	SAMPLING TIME	CHLORIDES	TPH (8015 Mod) Ext*										
H602785-													8015													
31	BH-11 0.8-1.2	G	1			X					X		12/9	1405	X	X										
32	BH-11 1.9-2.1													1405		X										
33	BH-11 2.9-3.1													1405												
34	BH-11 3.5-4.0													1405												
35	BH-12 0.9-1.1													1430		X										
36	BH-12 1.9-2.1													1430												
37	BH-12 2.8-3.0													1430												
38	BH-12 3.5-4.0													1430												
39	BH-13 0.9-1.1													1445		X										
40	BH-13 1.4-2.1	G	1			X					X		12/9	1445	X											

Relinquished By:	Date: 12/13/16	Received By:	Phone Result: ☐ Yes ☒ No Add'l Phone #:
	Time: 10:15		Fax Result: ☐ Yes ☒ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 2.8°C

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) #75

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 5 of 6

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 #:	RX5-16-005	Project Owner:	City:
Project Name:			State: Zip:
Project Location:			Phone #:
Sampler Name:	DAVID Boyer		Fax #:

ANALYSIS REQUEST: Chlorides; TPH 8015 Mod Ext #

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	Chlorides	TPH 8015 Mod Ext #
H602785													2016			
-41	BH-13 2.5-3.0'	G	1			X							12/9	1440	X	
42	BH-13 3.5-4.0'	|	|			|							1440	|	
43	BH-14 0.9-1.1	|	|			|							1505	X	
44	BH-14 1.9-2.1	|	|			|							1505	|	
45	BH-14 2.5-3.1	|	|			|							1505	|	
46	BH-14 3.5-4.0'	|	|			|						12/9	1505	|	
47	S-1 0-0.25'	|	|			|						12/7	1320	|	X
48	S-2 0-0.55'	|	|			|						12/9	1520	|	X
49	S-3 0-0.55'	|	|			|						12/9	1535	|	X
50	S-4 0-0.55'	G	1			X							12/9	1542	X	X

Relinquished By: D.Boyer	Date: 12/13	Received By: Celyhelene	Phone Result: ☐ Yes ☒ No Add'l Phone #:
	Time: 10:15		Fax Result: ☐ Yes ☒ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 2.8°C

Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) CH #75

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 6 of 6

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 #:	RX5-16-005 Project Owner:
Project Name:	
Project Location:	
Sampler Name:	DAVID BOYER

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	SAMPLING TIME	Chlorides	TPH 8015 mod Ext*	BTEX 8021B											
H602785													20K															
S1	05-1	G	1			X					X		12/12	1542	X	X	X											
S2	05-2	G	1			X					X		12/12	1543	X	X	X											
S3	05-3	G	1			X					X		12/12	1543	X	X	X											

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Relinquished By:	Date: 12/13/16	Received By:	
	Time: 10:15		
Relinquished By:	Date:	Received By:	
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 2.8°C

Sample Condition: Cool: Yes / No; Intact: Yes / No

CHECKED BY: (Initials) GH #75

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

Appendix B
Site Photos

RuthCo Soil Cores collected December 7 and 9, 2016

Figure 1. Borehole 3, top. White soil is mixture of sand and caliche at pad surface then a uniform fine-grained sand below. Soil sample for analysis to be taken at 1 foot (0.9-1.1 feet)

Figure 2. Borehole 3. Next sample to be taken at 2 feet (1.9-2.1 feet) then at 3 feet and at 4 feet.

Figure 3. Close up of uniform sand at 2 feet.

Figure 4. Core from 4 to 8 feet. Black cap is top of core, red is base. Sand at 4 feet grading to soft caliche at about 6 feet to base at 8 feet. Sample taken for analysis at 8 ft. Intermediate samples not to be tested unless sample at 4 feet shows contamination.

Figure 5. Core from 4 to 8 feet. Black cap is top of core, red is base. Sand at 4 feet grading to soft caliche at about 6 feet to base at 8 feet.

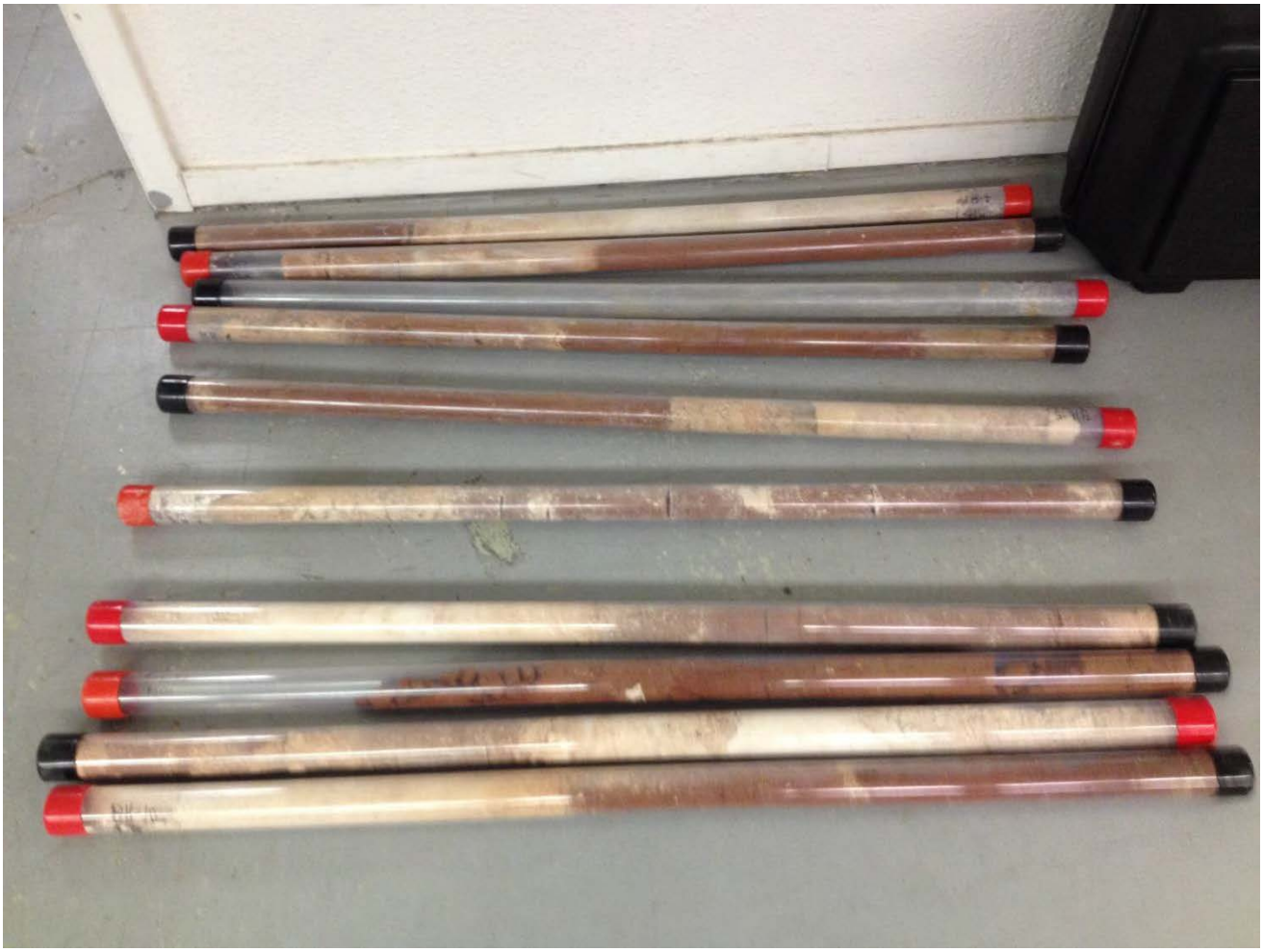
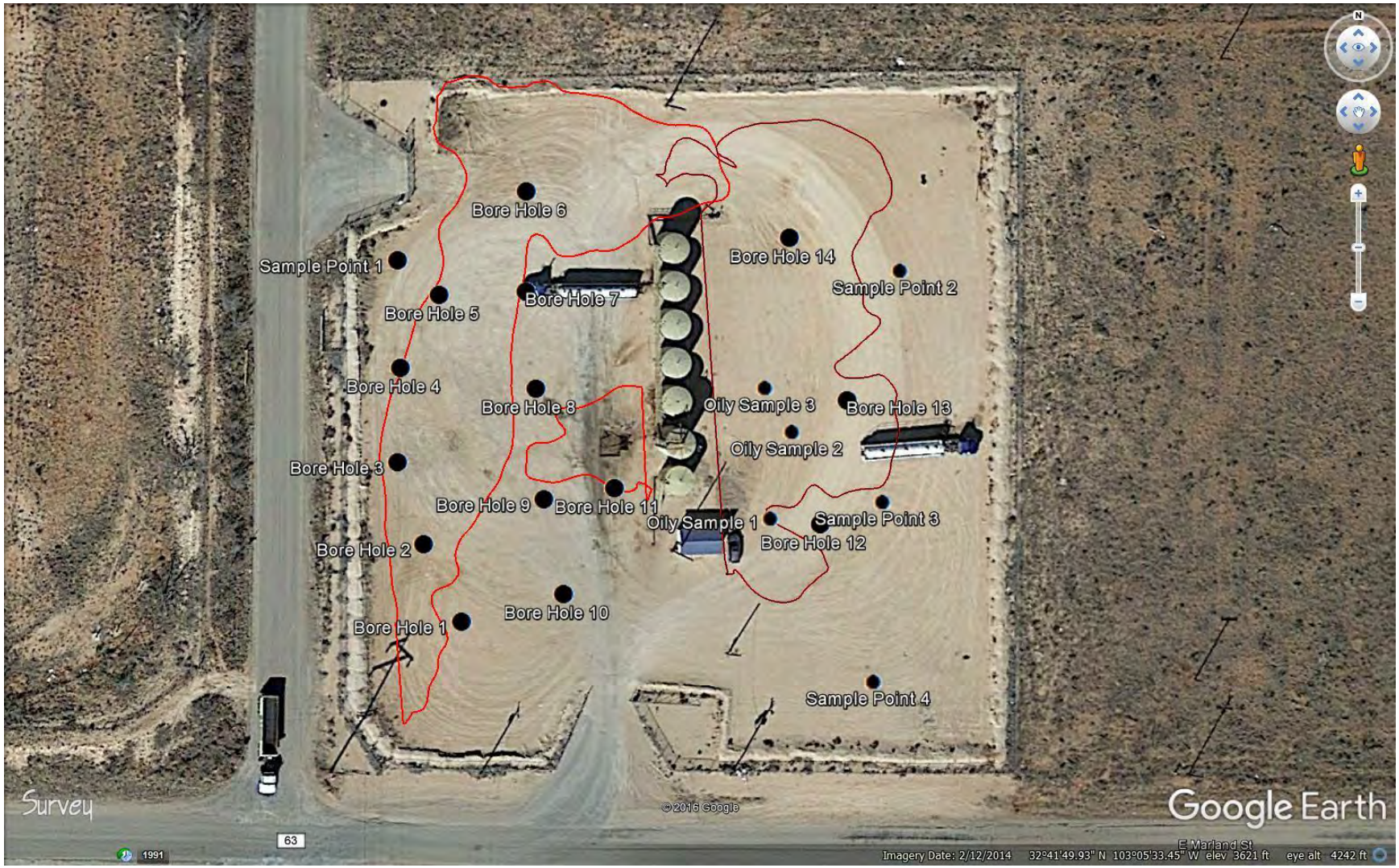


Figure 6. Untested 4 to 8 foot cores. After measurement and visual observations these will be discarded and not tested unless the 0 to 4 feet core shows contamination.

Appendix C
Site Map


Bore Hole 6
Sample Point 1
Bore Hole 14
Sample Point 2
Bore Hole 7
Bore Hole 5
Bore Hole 4
Bore Hole 8
Oily Sample 3
Bore Hole 13
Oily Sample 2
Bore Hole 3
Bore Hole 9
Bore Hole 11
Oily Sample 1
Sample Point 3
Bore Hole 12
Bore Hole 2
Bore Hole 10
Bore Hole 1
Sample Point 4
Survey
© 2016 Google
Google Earth
63
1991
E Marland St
Imagery Date: 2/12/2014 32°41'49.93" N 103°05'33.45" W elev 3621 ft eye alt 4242 ft

Bore Hole
Sample Point
Oil Sample
High in Chlorides
High in TPH

Sample Point # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	880	<10.0

Bore Hole # 5		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	32	<10.0
BH-2'	32	
BH-3'	48	
BH-4'	48	
BH-8'	64	

Bore Hole # 4		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	96	<10.0
BH-2'	16	
BH-3'	16	
BH-4'	16	
BH-8'	32	

Bore Hole # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	80	<10.0
BH-2'	16	
BH-3'	16	
BH-4'	64	
BH-8'	32	

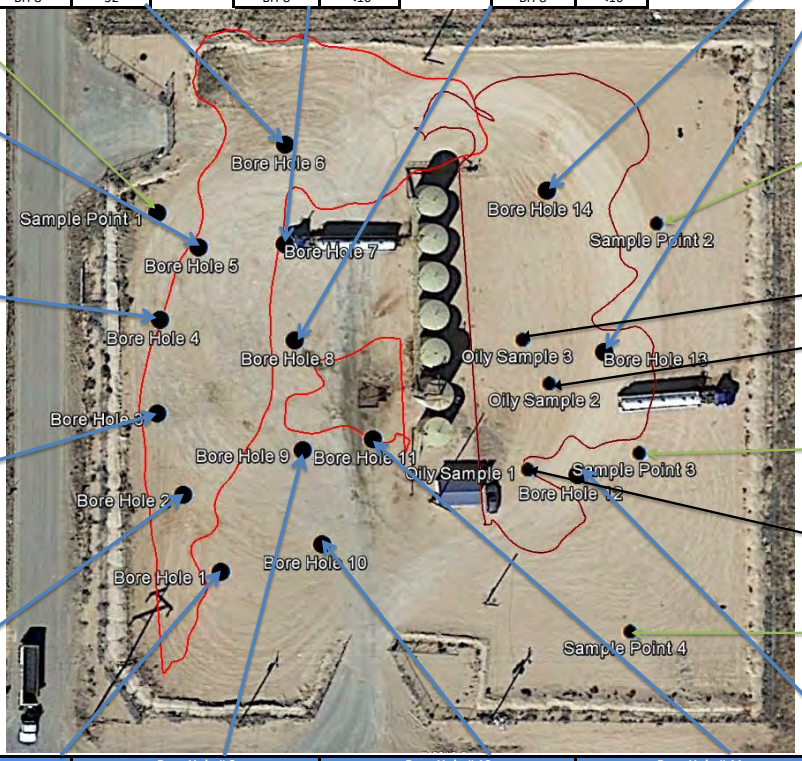
Bore Hole # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	32	<10.0
BH-2'	64	
BH-3'	80	
BH-4'	128	
BH-8'	96	

Bore Hole # 6		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	688	<10.0
BH-2'	400	
BH-3'	192	
BH-4'	80	
BH-8'	32	

Bore Hole # 7		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	480	<10.0
BH-2'	64	
BH-3'	16	
BH-4'	32	
BH-8'	<16	

Bore Hole # 8		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	1090	<10.0
BH-2'	64	
BH-3'	144	
BH-4'	144	
BH-8'	<16	

Bore Hole # 14		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	96	64.1
BH-2'	48	
BH-3'	48	
BH-4'	48	



Bore Hole # 13		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	80	<10.0
BH-2'	16	
BH-3'	<16	
BH-4'	<16	

Sample Point # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	208	47.7

Oil Sample # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	6660	12,041

Oil Sample # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	4000	4,280

Sample Point # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	224	<10.0

Oil Sample # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	4080	19,423

Sample Point # 4		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	32	<10.0

Bore Hole # 12		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	48	<10.0
BH-2'	32	
BH-3'	32	
BH-4'	32	

Bore Hole # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	<16	<10.0
BH-2'	<16	
BH-3'	<16	
BH-4'	32	
BH-8'	48	

Bore Hole # 9		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	1250	<10.0
BH-2'	96	
BH-3'	80	
BH-4'	48	
BH-8'	16	

Bore Hole # 10		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	592	<10.0
BH-2'	48	
BH-3'	64	
BH-4'	128	
BH-8'	32	

Bore Hole # 11		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	2560	496
BH-2'	832	13.5
BH-3'	240	
BH-4'	272	

Appendix D
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 Ruthco Rig Co. LLC	Contact Joshua Ruth
Address	Telephone No. 575-631-0437
Facility Name Ruthco SWD	Facility Type Disposal
Surface Owner	Mineral Owner	API No. 30-025-07950

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
F	30	18S	39E	1980	N	2310	W	Lea

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release water and skim oil	Volume of Release 69 / Volume Recovered 69
Source of Release tanks on location	Date and Hour of Occurrence 11pm 11/6/16 / Date and Hour of Discovery 11pm 11/6/16
Was Immediate Notice Given? ☑ Yes ☐ No ☐ Not Required	If YES, To Whom? Kristen Lynch
By Whom? Joshua Ruth	Date and Hour 11/7/16 8am
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the Watercourse.

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* lightning struck 750 bbl gyp barrel on location — pick up all fluids on ground and going to haul off bad soil and bring back in good dirt.

Describe Area Affected and Cleanup Action Taken.*

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: Joshua Ruth	OIL CONSERVATION DIVISION
Printed Name: Joshua Ruth	Approved by Environmental Specialist:
Title: President	Approval Date: / Expiration Date:
E-mail Address:	Conditions of Approval: / Attached ☐
Date: Phone:	

* Attach Additional Sheets If Necessary

Appendix E
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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 02204		L	LE	1	4	1	30	18S	39E	679189	3621984*	123	65	58
L 05134	R	L	LE	1	1	2	30	18S	39E	679584	3622394*	150	78	72
L 05134 POD2		L	LE	1	1	2	30	18S	39E	679584	3622394*	250		
L 05197		L	LE			2	30	18S	39E	679893	3622093*	100	70	30
L 05924 POD2	R	L	LE		3	2	30	18S	39E	679692	3621892*	150	85	65
L 05924 POD3		L	LE	4	3	2	30	18S	39E	679898	3621873	237		
L 06512		L	LE		2	2	30	18S	39E	680087	3622302*	170	70	100
L 07113		L	LE	4	2	2	30	18S	39E	680186	3622201*	120		
L 07231	R	L	LE	2	3	2	30	18S	39E	679791	3621991*	126	72	54
L 07231 POD2	R	L	LE	2	3	2	30	18S	39E	679791	3621991*	150	50	100
L 07231 POD3		L	LE	2	3	2	30	18S	39E	679791	3621991*	195		
L 07492		L	LE			2	30	18S	39E	679893	3622093*	150	82	68
L 07671 POD1		L	LE	2	4	1	30	18S	39E	679389	3621984*	150		
L 07671 POD2		L	LE	2	4	1	30	18S	39E	679389	3621984*	150		
L 08039		L	LE		4	2	30	18S	39E	680095	3621899*	150	50	100
L 08040		L	LE		4	2	30	18S	39E	680095	3621899*	150	85	65
L 08294		L	LE	2	3	2	30	18S	39E	679791	3621991*	150	90	60
L 08550		L	LE	2	3	2	30	18S	39E	679791	3621991*	150	82	68
L 09289		L	LE	1	2	2	30	18S	39E	679986	3622401*	150	60	90
L 09787	R	L	LE	2	4	2	30	18S	39E	680194	3621998*	150	78	72
L 09912		L	LE		2	2	30	18S	39E	680087	3622302*	155	95	60
L 09948	R	L	LE		2	2	30	18S	39E	680087	3622302*	150	88	62
L 09948 POD2		L	LE	3	2	2	30	18S	39E	679950	3622157	255		
L 10389		L	LE			2	30	18S	39E	679893	3622093*	180	87	93
L 10538		L	LE	1	1	2	30	18S	39E	679584	3622394*	200		
L 11356		L	LE	4	3	2	30	18S	39E	679791	3621791*	238		

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

(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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
L 11498	L	LE	2	3	2	30	18S	39E	679791	3621991*	245		
L 11634	L	LE	4	3	2	30	18S	39E	679791	3621791*	234		
L 11639	L	LE	1	1	2	30	18S	39E	679584	3622394*	250		
L 12305 POD1	L	LE	1	2	4	30	18S	39E	679921	3621593	235		
L 12535 POD1	L	LE	2	2	2	30	18S	39E	680238	3622387	235		
L 12711 POD1	L	LE	2	1	4	30	18S	39E	679895	3621595	250		
L 13397 POD1	L	LE	2	2	2	30	18S	39E	680164	3622398	235	98	137

Average Depth to Water: **76 feet**

Minimum Depth: **50 feet**

Maximum Depth: **98 feet**

Record Count: 33

PLSS Search:

Section(s): 30 **Township:** 18S **Range:** 39E

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

Bore Hole
Sample Point
Oil Sample
High in Chlorides
High in TPH

Bore Hole # 6		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	688	<10.0
BH-2'	400	
BH-3'	192	
BH-4'	80	
BH-8'	32	

Bore Hole # 7		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	480	<10.0
BH-2'	64	
BH-3'	16	
BH-4'	32	
BH-8'	<16	

Bore Hole # 8		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	1090	<10.0
BH-2'	64	
BH-3'	144	
BH-4'	144	
BH-8'	<16	

Bore Hole # 14		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	96	64.1
BH-2'	48	
BH-3'	48	
BH-4'	48	

Sample Point # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	880	<10.0

Bore Hole # 13		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	80	<10.0
BH-2'	16	
BH-3'	<16	
BH-4'	<16	

Bore Hole # 5		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	32	<10.0
BH-2'	32	
BH-3'	48	
BH-4'	48	
BH-8'	64	

Sample Point # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	208	47.7

Bore Hole # 4		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	96	<10.0
BH-2'	16	
BH-3'	16	
BH-4'	16	
BH-8'	32	

Oil Sample # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	6660	12,041

Oil Sample # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	4000	4,280

Bore Hole # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	80	<10.0
BH-2'	16	
BH-3'	16	
BH-4'	64	
BH-8'	32	

Sample Point # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	224	<10.0

Oil Sample # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	4080	19,423

Bore Hole # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	32	<10.0
BH-2'	64	
BH-3'	80	
BH-4'	128	
BH-8'	96	

Sample Point # 4		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	32	<10.0

Bore Hole # 12		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	48	<10.0
BH-2'	32	
BH-3'	32	
BH-4'	32	

Bore Hole # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	<16	<10.0
BH-2'	<16	
BH-3'	<16	
BH-4'	32	
BH-8'	48	

Bore Hole # 9		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	1250	<10.0
BH-2'	96	
BH-3'	80	
BH-4'	48	
BH-8'	16	

Bore Hole # 10		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	592	<10.0
BH-2'	48	
BH-3'	64	
BH-4'	128	
BH-8'	32	

Bore Hole # 11		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	2560	496
BH-2'	832	13.5
BH-3'	240	
BH-4'	272	

Bore Hole
Sample Point
Oil Sample
High in Chlorides
High in TPH

Bore Hole # 6		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	688	<10.0
BH-2'	400	
BH-3'	192	
BH-4'	80	
BH-8'	32	

Bore Hole # 7		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	480	<10.0
BH-2'	64	
BH-3'	16	
BH-4'	32	
BH-8'	<16	

Bore Hole # 8		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	1090	<10.0
BH-2'	64	
BH-3'	144	
BH-4'	144	
BH-8'	<16	

Bore Hole # 14		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	96	64.1
BH-2'	48	
BH-3'	48	
BH-4'	48	

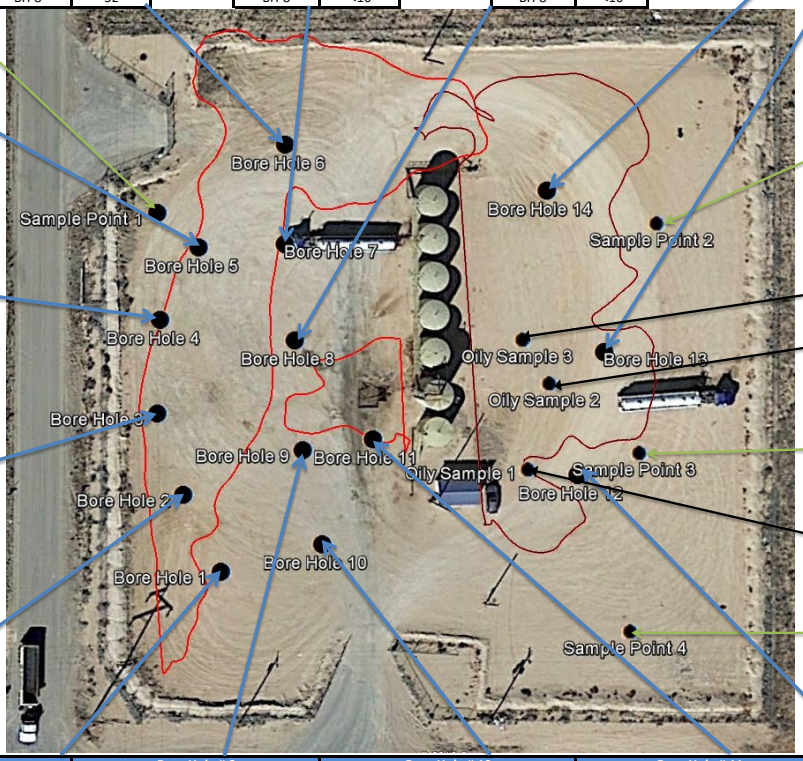
Sample Point # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	880	<10.0

Bore Hole # 5		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	32	<10.0
BH-2'	32	
BH-3'	48	
BH-4'	48	
BH-8'	64	

Bore Hole # 4		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	96	<10.0
BH-2'	16	
BH-3'	16	
BH-4'	16	
BH-8'	32	

Bore Hole # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	80	<10.0
BH-2'	16	
BH-3'	16	
BH-4'	64	
BH-8'	32	

Bore Hole # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	32	<10.0
BH-2'	64	
BH-3'	80	
BH-4'	128	
BH-8'	96	



Bore Hole # 13		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	80	<10.0
BH-2'	16	
BH-3'	<16	
BH-4'	<16	

Sample Point # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	208	47.7

Oil Sample # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	6660	12,041

Oil Sample # 2		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	4000	4,280

Sample Point # 3		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	224	<10.0

Oil Sample # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
OS-S'	4080	19,423

Sample Point # 4		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
SP-S'	32	<10.0

Bore Hole # 12		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	48	<10.0
BH-2'	32	
BH-3'	32	
BH-4'	32	

Bore Hole # 1		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	<16	<10.0
BH-2'	<16	
BH-3'	<16	
BH-4'	32	
BH-8'	48	

Bore Hole # 9		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	1250	<10.0
BH-2'	96	
BH-3'	80	
BH-4'	48	
BH-8'	16	

Bore Hole # 10		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	592	<10.0
BH-2'	48	
BH-3'	64	
BH-4'	128	
BH-8'	32	

Bore Hole # 11		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	2560	496
BH-2'	832	13.5
BH-3'	240	
BH-4'	272	