



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

TABLE OF CONTENTS

I. BACKGROUND.....	5
II. SURFACE AND GROUND WATER.....	5
III. CHARACTERIZATION.....	5
IV. WORK PERFORMED.....	5
V. ACTION PLAN.....	7
V. FIGURES & APPENDICES	7
Appendix A – Analytical Results	8
Appendix B - Site Photos	9
Appendix C - Site Map.....	9
Appendix D – C-141	9
Appendix E – Groundwater.....	9

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 contaminants 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

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 accredited 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

Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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

Chloride, SM4500CI-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, SM4500CI-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
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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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 Fax To: (575) 393-4388

 Received: 12/13/2016
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

 Sampling Date: 12/07/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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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Received: 12/13/2016
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

Sampling Date: 12/07/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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

Chloride, SM4500CI-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, SM4500CI-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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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 12/13/2016
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

 Sampling Date: 12/07/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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

Chloride, SM4500CI-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, SM4500CI-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		

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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

Chloride, SM4500CI-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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Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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, SM4500CI-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
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/07/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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

Chloride, SM4500CI-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, SM4500CI-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
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

Sampling Date: 12/09/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

 Sampling Date: 12/09/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/09/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/09/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

Sampling Date: 12/09/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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, SM4500CI-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, SM4500CI-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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Hobbs NM, 88240
Fax To: (575) 393-4388

Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/09/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/13/2016
 Reported: 12/16/2016
 Project Name: RXS-16-005
 Project Number: RXS-16-005
 Project Location: NONE GIVEN

Sampling Date: 12/09/2016
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Celey D. Keene

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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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/09/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

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							

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received: 12/13/2016
Reported: 12/16/2016
Project Name: RXS-16-005
Project Number: RXS-16-005
Project Location: NONE GIVEN

Sampling Date: 12/12/2016
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Celey D. Keene

Sample ID: OS-2 (H602785-52)

Chloride, SM4500CI-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, SM4500CI-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, Lab Director/Quality Manager

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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Celey D. Keene, Lab Director/Quality Manager



CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of 6

BILL TO

ANALYSIS REQUEST

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:

Sample Name: DAD 16 Boyer

FOR LAB USE ONLY

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

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TIME

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Lab I.D.

Sample I.D.

H602785

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134-1 0.9-1.1' 134-1 1.9-2.1' 134-1 2.2-2.9' 134-1 2.9-3.1' 134-1 3.1-3.9' 134-1 3.9-4.1' 134-1 4.1-4.9' 134-1 4.9-5.1' 134-1 5.1-5.9' 134-1 5.9-6.1' 134-1 6.1-6.9' 134-1 6.9-7.1' 134-1 7.1-7.9' 134-1 7.9-8.1' 134-1 8.1-8.9' 134-1 8.9-9.1' 134-1 9.1-9.9' 134-1 9.9-10.1' 134-1 10.1-10.9' 134-1 10.9-11.1' 134-1 11.1-11.9' 134-1 11.9-12.1' 134-1 12.1-12.9' 134-1 12.9-13.1' 134-1 13.1-13.9' 134-1 13.9-14.1' 134-1 14.1-14.9' 134-1 14.9-15.1' 134-1 15.1-15.9' 134-1 15.9-16.1' 134-1 16.1-16.9' 134-1 16.9-17.1' 134-1 17.1-17.9' 134-1 17.9-18.1' 134-1 18.1-18.9' 134-1 18.9-19.1' 134-1 19.1-19.9' 134-1 19.9-20.1' 134-1 20.1-20.9' 134-1 20.9-21.1' 134-1 21.1-21.9' 134-1 21.9-22.1' 134-1 22.1-22.9' 134-1 22.9-23.1' 134-1 23.1-23.9' 134-1 23.9-24.1' 134-1 24.1-24.9' 134-1 24.9-25.1' 134-1 25.1-25.9' 134-1 25.9-26.1' 134-1 26.1-26.9' 134-1 26.9-27.1' 134-1 27.1-27.9' 134-1 27.9-28.1' 134-1 28.1-28.9' 134-1 28.9-29.1' 134-1 29.1-29.9' 134-1 29.9-30.1' 134-1 30.1-30.9' 134-1 30.9-31.1' 134-1 31.1-31.9' 134-1 31.9-32.1' 134-1 32.1-32.9' 134-1 32.9-33.1' 134-1 33.1-33.9' 134-1 33.9-34.1' 134-1 34.1-34.9' 134-1 34.9-35.1' 134-1 35.1-35.9' 134-1 35.9-36.1' 134-1 36.1-36.9' 134-1 36.9-37.1' 134-1 37.1-37.9' 134-1 37.9-38.1' 134-1 38.1-38.9' 134-1 38.9-39.1' 134-1 39.1-39.9' 134-1 39.9-40.1' 134-1 40.1-40.9' 134-1 40.9-41.1' 134-1 41.1-41.9' 134-1 41.9-42.1' 134-1 42.1-42.9' 134-1 42.9-43.1' 134-1 43.1-43.9' 134-1 43.9-44.1' 134-1 44.1-44.9' 134-1 44.9-45.1' 134-1 45.1-45.9' 134-1 45.9-46.1' 134-1 46.1-46.9' 134-1 46.9-47.1' 134-1 47.1-47.9' 134-1 47.9-48.1' 134-1 48.1-48.9' 134-1 48.9-49.1' 134-1 49.1-49.9' 134-1 49.9-50.1' 134-1 50.1-50.9' 134-1 50.9-51.1' 134-1 51.1-51.9' 134-1 51.9-52.1' 134-1 52.1-52.9' 134-1 52.9-53.1' 134-1 53.1-53.9' 134-1 53.9-54.1' 134-1 54.1-54.9' 134-1 54.9-55.1' 134-1 55.1-55.9' 134-1 55.9-56.1' 134-1 56.1-56.9' 134-1 56.9-57.1' 134-1 57.1-57.9' 134-1 57.9-58.1' 134-1 58.1-58.9' 134-1 58.9-59.1' 134-1 59.1-59.9' 134-1 59.9-60.1' 134-1 60.1-60.9' 134-1 60.9-61.1' 134-1 61.1-61.9' 134-1 61.9-62.1' 134-1 62.1-62.9' 134-1 62.9-63.1' 134-1 63.1-63.9' 134-1 63.9-64.1' 134-1 64.1-64.9' 134-1 64.9-65.1' 134-1 65.1-65.9' 134-1 65.9-66.1' 134-1 66.1-66.9' 134-1 66.9-67.1' 134-1 67.1-67.9' 134-1 67.9-68.1' 134-1 68.1-68.9' 134-1 68.9-69.1' 134-1 69.1-69.9' 134-1 69.9-70.1' 134-1 70.1-70.9' 134-1 70.9-71.1' 134-1 71.1-71.9' 134-1 71.9-72.1' 134-1 72.1-72.9' 134-1 72.9-73.1' 134-1 73.1-73.9' 134-1 73.9-74.1' 134-1 74.1-74.9' 134-1 74.9-75.1' 134-1 75.1-75.9' 134-1 75.9-76.1' 134-1 76.1-76.9' 134-1 76.9-77.1' 134-1 77.1-77.9' 134-1 77.9-78.1' 134-1 78.1-78.9' 134-1 78.9-79.1' 134-1 79.1-79.9' 134-1 79.9-80.1' 134-1 80.1-80.9' 134-1 80.9-81.1' 134-1 81.1-81.9' 134-1 81.9-82.1' 134-1 82.1-82.9' 134-1 82.9-83.1' 134-1 83.1-83.9' 134-1 83.9-84.1' 134-1 84.1-84.9' 134-1 84.9-85.1' 134-1 85.1-85.9' 134-1 85.9-86.1' 134-1 86.1-86.9' 134-1 86.9-87.1' 134-1 87.1-87.9' 134-1 87.9-88.1' 134-1 88.1-88.9' 134-1 88.9-89.1' 134-1 89.1-89.9' 134-1 89.9-90.1' 134-1 90.1-90.9' 134-1 90.9-91.1' 134-1 91.1-91.9' 134-1 91.9-92.1' 134-1 92.1-92.9' 134-1 92.9-93.1' 134-1 93.1-93.9' 134-1 93.9-94.1' 134-1 94.1-94.9' 134-1 94.9-95.1' 134-1 95.1-95.9' 134-1 95.9-96.1' 134-1 96.1-96.9' 134-1 96.9-97.1' 134-1 97.1-97.9' 134-1 97.9-98.1' 134-1 98.1-98.9' 134-1 98.9-99.1' 134-1 99.1-99.9' 134-1 99.9-100.1' 134-1 100.1-100.9' 134-1 100.9-101.1' 134-1 101.1-101.9' 134-1 101.9-102.1' 134-1 102.1-102.9' 134-1 102.9-103.1' 134-1 103.1-103.9' 134-1 103.9-104.1' 134-1 104.1-104.9' 134-1 104.9-105.1' 134-1 105.1-105.9' 134-1 105.9-106.1' 134-1 106.1-106.9' 134-1 106.9-107.1' 134-1 107.1-107.9' 134-1 107.9-108.1' 134-1 108.1-108.9' 134-1 108.9-109.1' 134-1 109.1-109.9' 134-1 109.9-110.1' 134-1 110.1-110.9' 134-1 110.9-111.1' 134-1 111.1-111.9' 134-1 111.9-112.1' 134-1 112.1-112.9' 134-1 112.9-113.1' 134-1 113.1-113.9' 134-1 113.9-114.1' 134-1 114.1-114.9' 134-1 114.9-115.1' 134-1 115.1-115.9' 134-1 115.9-116.1' 134-1 116.1-116.9' 134-1 116.9-117.1' 134-1 117.1-117.9' 134-1 117.9-118.1' 134-1 118.1-118.9' 134-1 118.9-119.1' 134-1 119.1-119.9' 134-1 119.9-120.1' 134-1 120.1-120.9' 134-1 120.9-121.1' 134-1 121.1-121.9' 134-1 121.9-122.1' 134-1 122.1-122.9' 134-1 122.9-123.1' 134-1 123.1-123.9' 134-1 123.9-124.1' 134-1 124.1-124.9' 134-1 124.9-125.1' 134-1 125.1-125.9' 134-1 125.9-126.1' 134-1 126.1-126.9' 134-1 126.9-127.1' 134-1 127.1-127.9' 134-1 127.9-128.1' 134-1 128.1-128.9' 134-1 128.9-129.1' 134-1 129.1-129.9' 134-1 129.9-130.1' 134-1 130.1-130.9' 134-1 130.9-131.1' 134-1 131.1-131.9' 134-1 131.9-132.1' 134-1 132.1-132.9' 134-1 132.9-133.1' 134-1 133.1-133.9' 134-1 133.9-134.1' 134-1 134.1-134.9' 134-1 134.9-135.1' 134-1 135.1-135.9' 134-1 135.9-136.1' 134-1 136.1-136.9' 134-1 136.9-137.1' 134-1 137.1-137.9' 134-1 137.9-138.1' 134-1 138.1-138.9' 134-1 138.9-139.1' 134-1 139.1-139.9' 134-1 139.9-140.1' 134-1 140.1-140.9' 134-1 140.9-141.1' 134-1 141.1-141.9' 134-1 141.9-142.1' 134-1 142.1-142.9' 134-1 142.9-143.1' 134-1 143.1-143.9' 134-1 143.9-144.1' 134-1 144.1-144.9' 134-1 144.9-145.1' 134-1 145.1-145.9' 134-1 145.9-146.1' 134-1 146.1-146.9' 134-1 146.9-147.1' 134-1 147.1-147.9' 134-1 147.9-148.1' 134-1 148.1-148.9' 134-1 148.9-149.1' 134-1 149.1-149.9' 134-1 149.9-150.1' 134-1 150.1-150.9' 134-1 150.9-151.1' 134-1 151.1-151.9' 134-1 151.9-152.1' 134-1 152.1-152.9' 134-1 152.9-153.1' 134-1 153.1-153.9' 134-1 153.9-154.1' 134-1 154.1-154.9' 134-1 154.9-155.1' 134-1 155.1-155.9' 134-1 155.9-156.1' 134-1 156.1-156.9' 134-1 156.9-157.1' 134-1 157.1-157.9' 134-1 157.9-158.1' 134-1 158.1-158.9' 134-1 158.9-159.1' 134-1 159.1-159.9' 134-1 159.9-160.1' 134-1 160.1-160.9' 134-1 160.9-161.1' 134-1 161.1-161.9' 134-1 161.9-162.1' 134-1 162.1-162.9' 134-1 162.9-163.1' 134-1 163.1-163.9' 134-1 163.9-164.1' 134-1 164.1-164.9' 134-1 164.9-165.1' 134-1 165.1-165.9' 134-1 165.9-166.1' 134-1 166.1-166.9' 134-1 166.9-167.1' 134-1 167.1-167.9' 134-1 167.9-168.1' 134-1 168.1-168.9' 134-1 168.9-169.1' 134-1 169.1-169.9' 134-1 169.9-170.1' 134-1 170.1-170.9' 134-1 170.9-171.1' 134-1 171.1-171.9' 134-1 171.9-172.1' 134-1 172.1-172.9' 134-1 172.9-173.1' 134-1 173.1-173.9' 134-1 173.9-174.1' 134-1 174.1-174.9' 134-1 174.9-175.1' 134-1 175.1-175.9' 134-1 175.9-176.1' 134-1 176.1-176.9' 134-1 176.9-177.1' 134-1 177.1-177.9' 134-1 177.9-178.1' 134-1 178.1-178.9' 134-1 178.9-179.1' 134-1 179.1-179.9' 134-1 179.9-180.1' 134-1 180.1-180.9' 134-1 180.9-181.1' 134-1 181.1-181.9' 134-1 181.9-182.1' 134-1 182.1-182.9' 134-1 182.9-183.1' 134-1 183.1-183.9' 134-1 183.9-184.1' 134-1 184.1-184.9' 134-1 184.9-185.1' 134-1 185.1-185.9' 134-1 185.9-186.1' 134-1 186.1-186.9' 134-1 186.9-187.1' 134-1 187.1-187.9' 134-1 187.9-188.1' 134-1 188.1-188.9' 134-1 188.9-189.1' 134-1 189.1-189.9' 134-1 189.9-190.1' 134-1 190.1-190.9' 134-1 190.9-191.1' 134-1 191.1-191.9' 134-1 191.9-192.1' 134-1 192.1-192.9' 134-1 192.9-193.1' 134-1 193.1-193.9' 134-1 193.9-194.1' 134-1 194.1-194.9' 134-1 194.9-195.1' 134-1 195.1-195.9' 134-1 195.9-196.1' 134-1 196.1-196.9' 134-1 196.9-197.1' 134-1 197.1-197.9' 134-1 197.9-198.1' 134-1 198.1-198.9' 134-1 198.9-199.1' 134-1 199.1-199.9' 134-1 199.9-200.1' 134-1 200.1-200.9' 134-1 200.9-201.1' 134-1 201.1-201.9' 134-1 201.9-202.1' 134-1 202.1-202.9' 134-1 202.9-203.1' 134-1 203.1-203.9' 134-1 203.9-204.1' 134-1 204.1-204.9' 134-1 204.9-205.1' 134-1 205.1-205.9' 134-1 205.9-206.1' 134-1 206.1-206.9' 134-1 206.9-207.1' 134-1 207.1-207.9' 134-1 207.9-208.1' 134-1 208.1-208.9' 134-1 208.9-209.1' 134-1 209.1-209.9' 134-1 209.9-210.1' 134-1 210.1-210.9' 134-1 210.9-211.1' 134-1 211.1-211.9' 134-1 211.9-212.1' 134-1 212.1-212.9' 134-1 212.9-213.1' 134-1 213.1-213.9' 134-1 213.9-214.1' 134-1 214.1-214.9' 134-1 214.9-215.1' 134-1 215.1-215.9' 134-1 215.9-216.1' 134-1 216.1-216.9' 134-1 216.9-217.1' 134-1 217.1-217.9' 134-1 217.9-218.1' 134-1 218.1-218.9' 134-1 218.9-219.1' 134-1 219.1-219.9' 134-1 219.9-220.1' 134-1 220.1-220.9' 134-1 220.9-221.1' 134-1 221.1-221.9' 134-1 221.9-222.1' 134-1 222.1-222.9' 134-1 222.9-223.1' 134-1 223.1-223.9' 134-1 223.9-224.1' 134-1 224.1-224.9' 134-1 224.9-225.1' 134-1 225.1-225.9' 134-1 225.9-226.1' 134-1 226.1-226.9' 134-1 226.9-227.1' 134-1 227.1-227.9' 134-1 227.9-228.1' 134-1 228.1-228.9' 134-1 228.9-229.1' 134-1 229.1-229.9' 134-1 229.9-230.1' 134-1 230.1-230.9' 134-1 230.9-231.1' 134-1 231.1-231.9' 134-1 231.9-232.1' 134-1 232.1-232.9' 134-1 232.9-233.1' 134-1 233.1-233.9' 134-1 233.9-234.1' 134-1 234.1-234.9' 134-1 234.9-235.1' 134-1 235.1-235.9' 134-1 235.9-236.1' 134-1 236.1-236.9' 134-1 236.9-237.1' 134-1 237.1-237.9' 134-1 237.9-238.1' 134-1 238.1-238.9' 134-1 238.9-239.1' 134-1 239.1-239.9' 134-1 239.9-240.1' 134-1 240.1-240.9' 134-1 240.9-241.1' 134-1 241.1-241.9' 134-1 241.9-242.1' 134-1 242.1-242.9' 134-1 242.9-243.1' 134-1 243.1-243.9' 134-1 243.9-244.1' 134-1 244.1-244.9' 134-1 244.9-245.1' 134-1 245.1-245.9' 134-1 245.9-246.1' 134-1 246.1-246.9' 134-1 246.9-247.1' 134-1 247.1-247.9' 134-1 247.9-248.1' 134-1 248.1-248.9' 134-1 248.9-249.1' 134-1 249.1-249.9' 134-1 249.9-250.1'



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Page 2 of 4

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: Same

Attn:

Address:

City:

State:

Zip:

Phone #:

Fax #:

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 #: 8X5-16-005 Project Owner:

Project Name:

Project Location:

Sample Name: 10/15/15 Boyer

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

11602785-

11 BH-4 4.9-2.1'

12 BH-4 2.9-3.1'

13 BH-5 0.9-1.1'

14 BH-5 1.9-3.1'

15 BH-5 2.9-3.1'

16 BH-6 0.9-1.1'

17 BH-6 1.9-2.1'

18 BH-6 2.9-3.1'

19 BH-7 0.9-1.1'

20 BH-7 1.9-2.1'

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

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Date:

Time:

Received By:

Date:

Time:

Relinquished By:

Date:

Time:

Received By:

Date:

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition

Cool Intact

Yes Yes

No No

CHECKED BY:

(Initials)

2.8c

Col # 75

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

Fax Result: ☐ Yes ☒ No Add'l Fax #:

REMARKS:



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 3066

Company Name: Safety and Environmental Solutions		BILL TO		ANALYSIS REQUEST									
Project Manager: Bob Allen		P.O. #:											
Address: 703 East Clinton, PO Box 1613		Company: Same											
City: Hobbs		Attn:											
Phone #: 575 397-0510		Address:											
Fax #: 575 393-4388		City:											
Project #: RXS-16-005		State:											
Project Owner:		Zip:											
Project Name:		Phone #:											
Project Location:		Fax #:											
Sampler Name: Bob Allen		SAMPLING											
FOR LAB USE ONLY		MATRIX											
Lab I.D.		Sample I.D.											
H00785-		(G)RAB OR (C)OMP.											
		# CONTAINERS											
		GROUNDWATER											
		WASTEWATER											
		SOIL											
		OIL											
		SLUDGE											
		OTHER :											
		ACID/BASE:											
		ICE / COOL											
		OTHER :											
		DATE											
		TIME											
21		12/1											
22		14/2											
23		14/4											
24		14/6											
25		16/5											
26		16/5											
27		17/10											
28		17/10											
29		17/10											
30		17/10											

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 analysis. 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: [Signature]	Date: 12/15/16	Received By: [Signature]	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By: [Signature]	Date: 12/15/16	Received By: [Signature]	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
REMARKS:				

Delivered By: (Circle One) ☒ UPS ☐ Bus ☐ Other: 2.8°C

Sample Condition: ☒ Cool ☐ Intact ☐ Yes ☒ No

CHECKED BY: [Signature]

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
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Page 4 of 6

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 #: 15-16-005 Project Owner: Project Name: Project Location: Sampler Name: David Royce <small>FOR LAB USE ONLY</small>				BILL TO P.O. #: Company: Same Attn: Address: City: State: Zip: Phone #: Fax #:							
Lab I.D. Sample I.D.				MATRIX (G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER : DATE TIME				PRESERV SAMPLING CH Horizon TPH (2015 mg/L) EXT*			
31 BH-11 0.8-1.2 21 12/9 1405 X 32 BH-11 1.9-2.1 21 1405 X 33 BH-11 2.9-3.1 21 1405 X 34 BH-11 3.5-4.2 21 1405 X 35 BH-12 0.9-1.1 21 1430 X 36 BH-12 1.9-2.1 21 1430 X 37 BH-12 2.8-3.0 21 1430 X 38 BH-12 3.5-4.0 21 1430 X 39 BH-13 0.9-1.1 21 1445 X 40 BH-13 1.9-2.1 21 1445 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: [Signature] Date: 12/13/15 Time: 10:15 Relinquished By: [Signature] Date: Time:		Received By: [Signature] Date: Time:	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition Cool - Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No CHECKED BY: [Signature] #75	

REMARKS:



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
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Page 6

Page 26 of 27



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(575) 393-2326 FAX (575) 393-2476

BILL TO

ANALYSIS REQUEST

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:										P.O. #: Company: Same Attn: Address: City: State: Zip: Phone #: Fax #:		BILL TO		ANALYSIS REQUEST									
Lab I.D. H602785 Sample I.D.										(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		MATRIX PRESERV. SAMPLING		DATE TIME <div style="display: flex; justify-content: space-between;"> <div> 18/12 1542 12/12 1543 12/12 1543 </div> <div> X X X </div> <div> X X X </div> </div>									
Relinquished By: <i>[Signature]</i> Relinquished By:										Date: 12/13/16 Time: 10:15 Date: Time:		Received By: <i>[Signature]</i> Received By:		Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #: Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Fax #: REMARKS:									
Delivered By: (Circle One) Sampler - UPS - Bus - Other:										Sample Condition Cool: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: <i>[Signature]</i> (Initials)		2.8°C									

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.

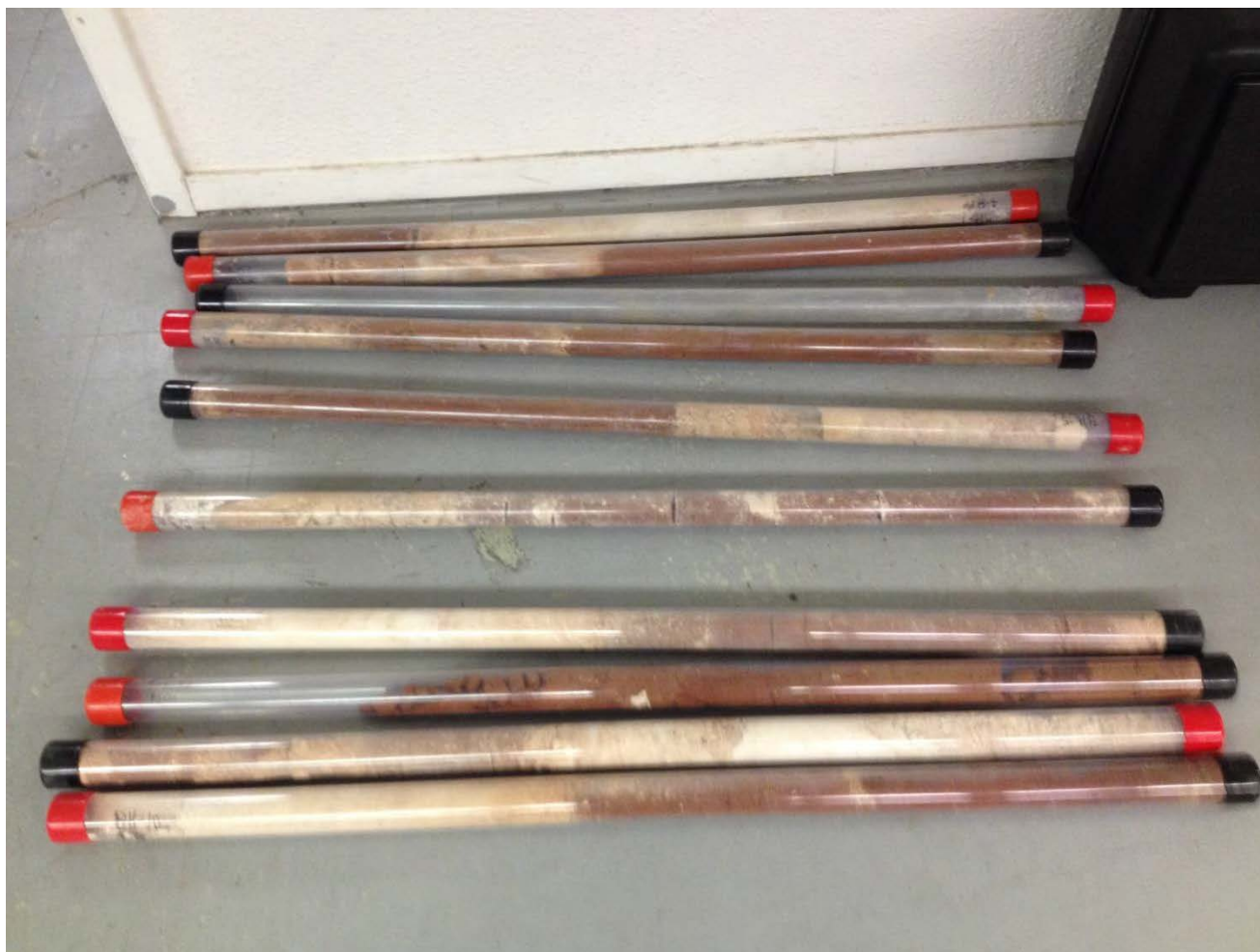
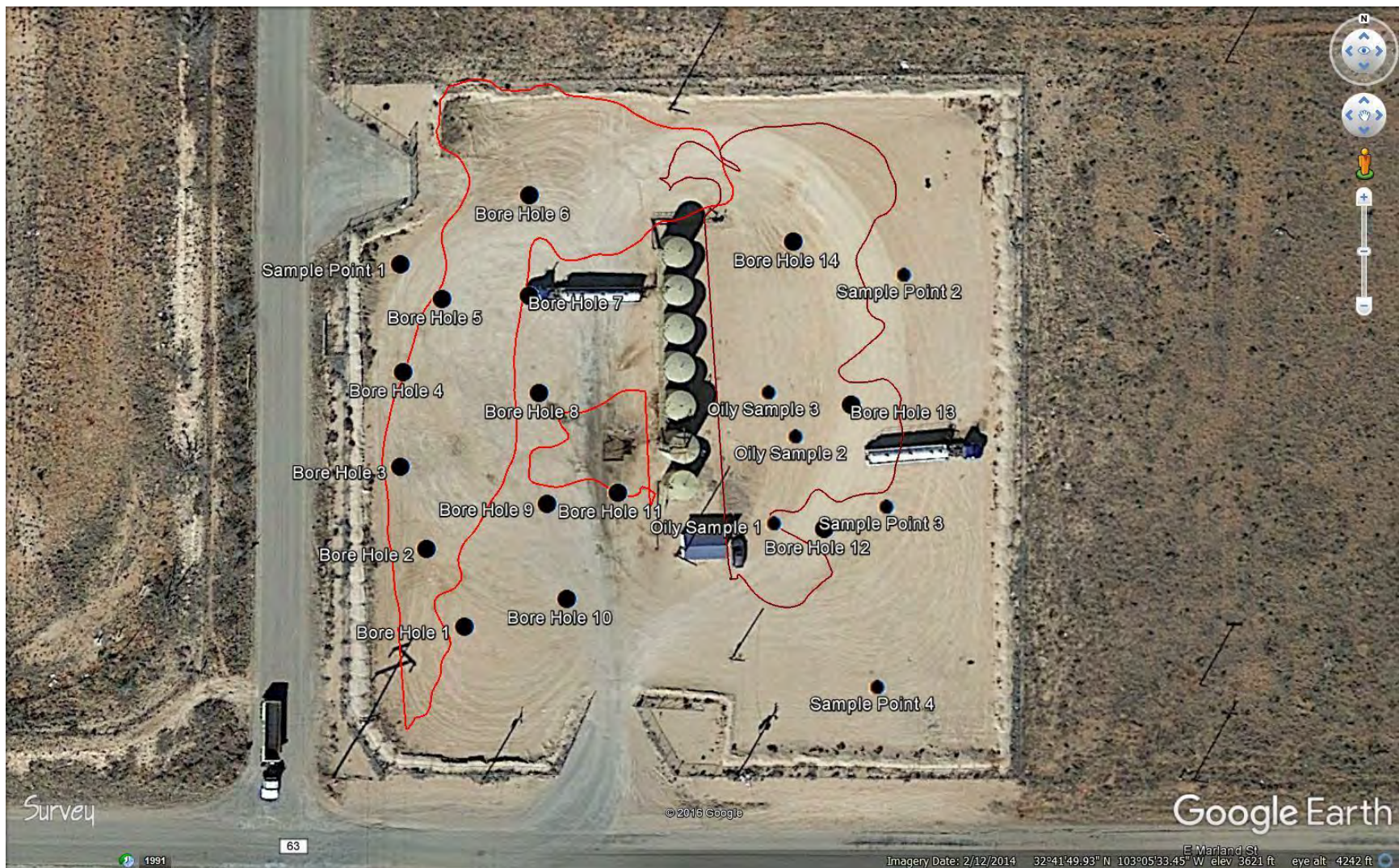


Figure 6. Untested 4 to 8 foot cores. After measurement and visual observations these will be discarded and not tested unless the 0 to 4 feet core shows contamination.

Appendix C

Site Map



Bore Hole
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-2'	64	<10.0
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

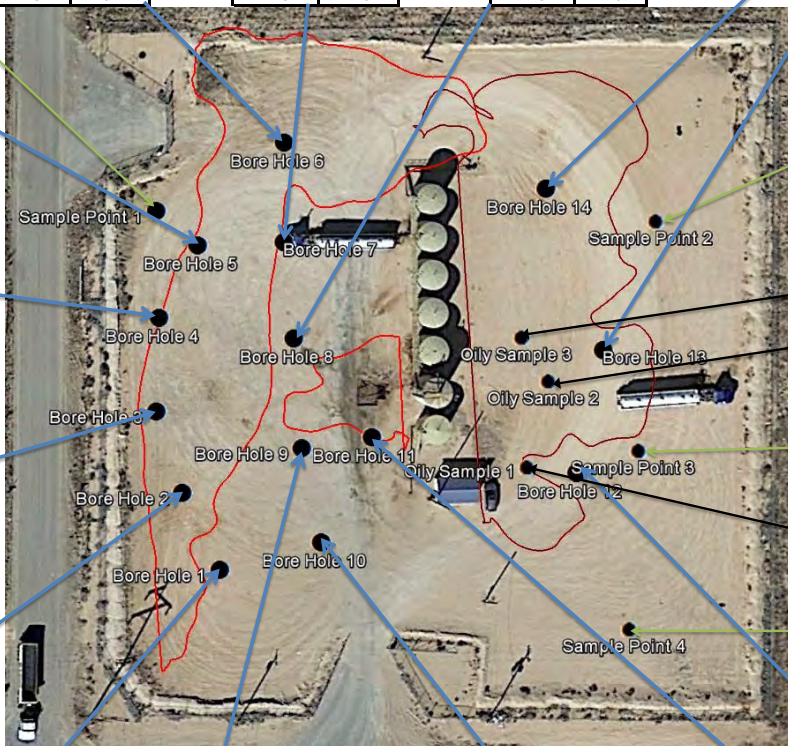
Bore Hole # 12		
12/13/2016	CL	TPH
Depth ft'	ppm	ppm
BH-1'	48	<10.0
BH-2'	32	
BH-3'	32	
BH-4'	32	

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

Name of Company <u>Ruthco Oil Co. LLC</u>		OPERATOR		<input checked="" type="checkbox"/> Initial Report	<input type="checkbox"/> Final Report
Address		Contact <u>Joshua Ruth</u>			
Facility Name <u>Ruthco SWD</u>		Telephone No. <u>575-631-0437</u>			
		Facility Type <u>Disposal</u>			
Surface Owner		Mineral Owner		API No. <u>30-025-07950</u>	

LOCATION OF RELEASE								
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
<u>F</u>	<u>30</u>	<u>18S</u>	<u>39E</u>	<u>1980</u>	<u>N</u>	<u>2310</u>	<u>W</u>	<u>hea</u>

Latitude _____ Longitude _____

Type of Release <u>water and skin oil</u>		Volume of Release <u>69</u>	Volume Recovered <u>69</u>
Source of Release <u>tanks on location</u>		Date and Hour of Occurrence <u>11/6/16</u>	Date and Hour of Discovery <u>11/6/16</u>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required		If YES, To Whom? <u>Kristen Lynch</u>	
By Whom? <u>Joshua Ruth</u>		Date and Hour <u>11/7/16 8am</u>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* lightning struck TSD oil gun 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: <u>Josh E Ruth</u>		OIL CONSERVATION DIVISION	
Printed Name: <u>Joshua Ruth</u>		Approved by Environmental Specialist:	
Title: <u>President</u>		Approval Date:	Expiration Date:
E-mail Address:		Conditions of Approval:	
Date:	Phone:	Attached <input type="checkbox"/>	

* 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	POD Sub-Code	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-Code	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

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

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	

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-2'	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	

