

RECEIVED

By Kellie Jones at 10:30 am, Jan 04, 2016

APPROVED CONDITIONAL

By Kellie Jones at 10:30 am, Jan 04, 2016

1. Additional sample along the bottom arm is required. This can be field sampling.
2. OCD would like to be present during construction of the trench and observe the washing process.

Devon Energy Production Co LP

Checkers 24 Federal #005

Delineation Report and Work Plan

Unit Letter M, Section 24, T22S, R32E
Lea County, New Mexico

30-025-33702

November 20, 2015

December 30, 2015-(Revised)



Prepared for:

Devon Energy Production Co., LP
PO Box 250
Artesia, New Mexico 88211

By:

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

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I. Company Contacts

Representative	Company	Telephone	E-mail
Brett Fulks	Devon Energy Prod.	575-748-1844	Brett.Fulks@dvn.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was engaged by Devon Energy to perform an initial site assessment and delineation of the site. The Checkers 24 Federal #005 is situated in Lea County, Section 24, Township 22S, and Range 32E.

According to the C-141, a leak resulted from a blown gauge on the wellhead (Appendix A). The operator contacted a vacuum truck to recover a significant amount of fluid minimizing run off and surface impact to pasture area. The tubing was closed on the wellhead and the SI unit. The gauge was replaced with a new one and the unit placed back in operation. The initial site assessment by SESI personnel revealed that the area of impact measured approximately 4,922.03 sq. ft.

III. Surface and Ground Water

There is no record of groundwater in the immediate vicinity of the site location. Further research of the New Mexico Office of the State Engineer website reveals records for Lea County, Section 24, Township 22S, and Range 32E which indicate the average depth to groundwater for the area to be 256' bgs. (Appendix B).

IV. Characterization

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

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

V. Work Performed

On October 26, 2015, SESI was onsite to photograph, assess and map the spill area.

On October 29, 2015 SESI personnel visited the site to conduct a vertical and horizontal delineation of the impacted area. It was determined that four (4) sample point positions would be sufficient given the dynamics and outlay of the area. The Bore holes were advanced to depths of 2' bgs., to 3' bgs., respectively. Representative soil samples were properly packaged, preserved and transported to Cardinal Laboratories, Hobbs New Mexico and analyzed for Chloride (Cl⁻) (Method SM 4500Cl-B). The results of the analysis are presented in the table below (Appendix D):

Sample Date 10/29/15	Chloride (mg/kg)	Total BTEX	GRO C6- C10	DRO >C10- C28
Depth				
AH-1 Surface	6400			
AH-1 1'	1090			
AH-1 2'	96	<0.300	<10.0	42.0
AH-2 Surface	1600			
AH-2 1'	1360			
AH-2 2'	1810			
AH-2 2.5'	80	<0.300	<10.0	14.5
AH-3 Surface	6130			
AH-3 1'	704			
AH-3 2'	16.0	<0.300	<10.0	<10.0
AH-4 1'	11300			
AH-4 2'	80.0	<0.300	<10.0	<10.0

VI. Action Plan

Due to the results listed above and the dynamics of this site; the following action plan is proposed:

VI. Action Plan

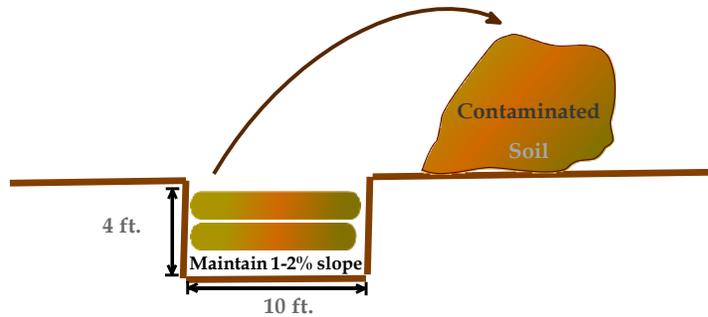
Based on the above confirmation of the soil analyses, SESI is proposing the following Course of action:

1. A treatment trench will be installed near the spill area, the size of which will hold the volume of the contaminated soil from the spill area. The material removed from the treatment trench will be stockpiled.
2. The treatment trench will be lined with a 20 mil liner and a drainage system installed in the bottom of the trench above the liner. The bottom of the test trench will be sloped to insure proper drainage at the bottom of the trench (Figure 2). The drainage system will be connected to piping to allow pumping of the leachate from the treatment trench.
3. The leachate will be pumped into a sump place adjacent to the treatment trench. The leachate will be monitored for electrical conductivity (EC) and transferred to frac tanks for recycling.
4. Upon completion of trench preparation the impacted areas would be excavated. The impacted soils would then be thoroughly blended with Sphagnum Peat Moss. The blended mixture of contaminated soils will be placed in the treatment trench in layers of 18" to 24". Rx soil amendment combined with water will be applied to each lift and allowed to leach through the lifts.
5. The drainage of water from the soil treatment will filter down to the drainage system. The leachate will be retained for recycling. Once target levels for the treated soil have been achieved with confirmed laboratory and/or field analysis the treatment trench will be closed.
6. The clean soils stockpiled from the treatment trench will be used to backfill the excavated spill area.
7. Upon confirmed closure of the treatment trench, the entire area will be seeded with the appropriate seed mixture.
8. SESI will file the appropriate closure documentation with all regulatory agencies.

1. *Excavation* - RXSoil will direct and supervise the excavation of the entire Effected Area (EA). The poly liner will ensure that no collateral contamination happens during the process. The slope of the excavation area will be 1%-2% grade throughout the project to maximize the removal of contaminant, as illustrated in Figure One:

Figure One

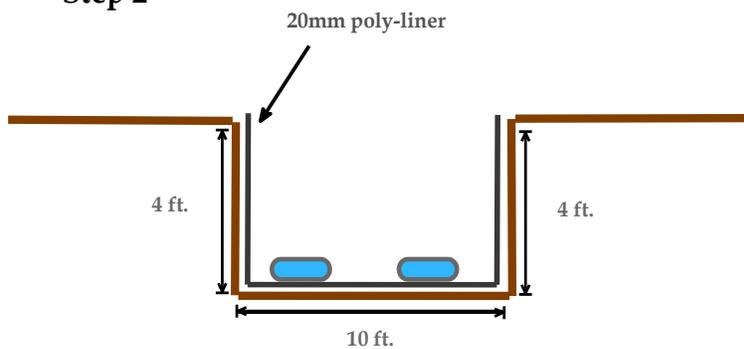
Step 1



2. *Poly-Liner* - Once the poly liner is firmly in place, the drain infrastructure will be placed on top of the liner and run down-slope to a manifold. The drains will be covered with a sock to avoid silting in and the blockage of drainage. All drains and manifolds are engineered with dual linings to ensure structural support as well as maximum flow.

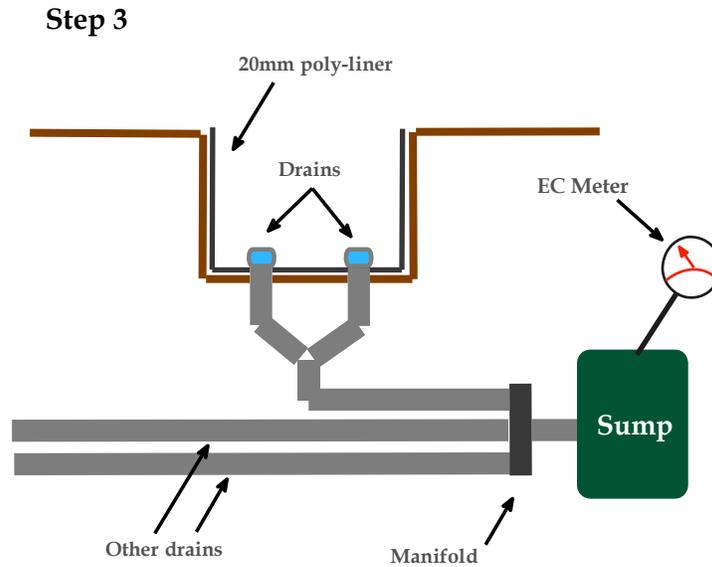
Figure Two

Step 2



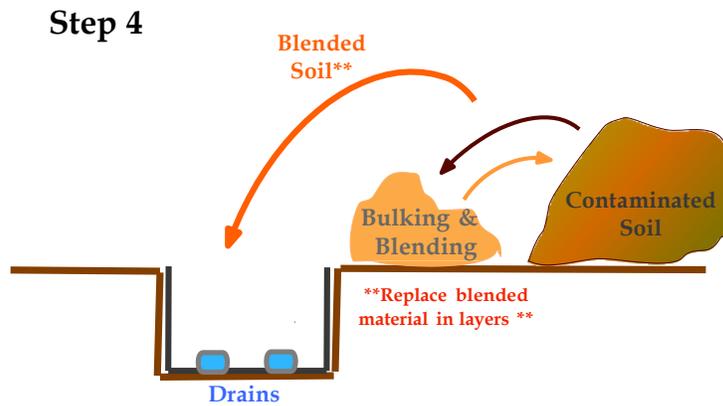
3. *Drainage* - The drainage infrastructure will be attached to a sump area, which includes a submersible pump that activates upon a mercury switch and a redundant backup float system. The sump discharges directly into a series of frac tanks. The discharged leachate will be transferred to third party companies. This will ensure that the used water will be recycled to a secondary industrial purpose.

Figure Three



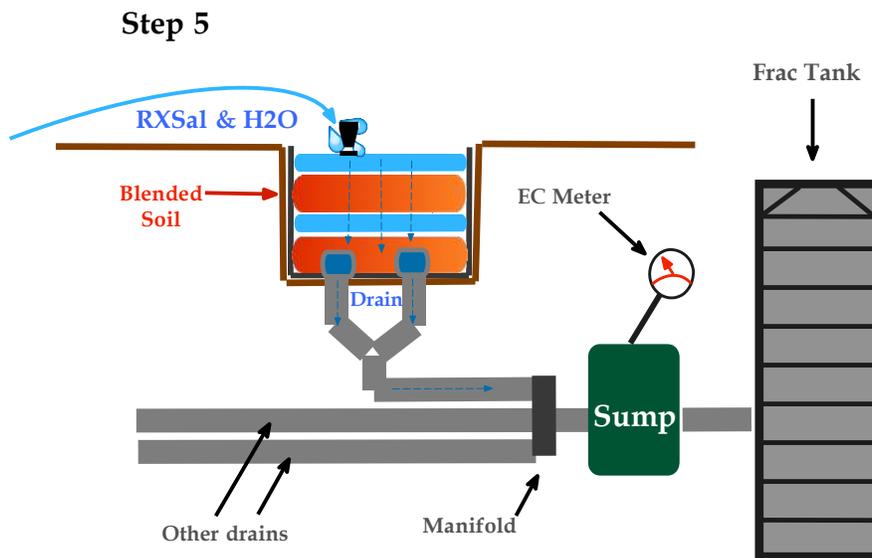
4. *Blending and Bulking* – Blending and bulking is a critical stage in the restoration of the soil to its pre-vegetative state. Canadian sphagnum peat moss or a local organic matter will be used to create a healthy profile and generate a prolific microbial environment. The amount of organic matter used is directly related to the Electrical Conductivity (EC) level. For this example, we will use 5 tons per acre. Adding organic matter (e.g.; peat moss) facilitates percolation and adds a proppant to the soil, substantially increasing the rate at which the soil is remediated

Figure Four



5. *Replacement & Remediation* – Once the soil has been completely blended with the organic matter, it is placed on top of the drain infrastructure in layers (usually 18”-24” lifts). The chemical RXSal is applied between the lifts until saturation is achieved. It takes approximately 30 minutes for the chemical exchange and displacement process to occur. At that point, another layer will be placed and the process repeated. The sodium and chloride contaminant will be collected into frac tanks for secondary recyclable usage.

Figure Five



Note: The piping, sump and frac tank are located adjacent to the trench above ground

6. *Monitoring and Testing* – Once the entire area has been remediated, RXSoil will engage a third party testing agent to conduct comprehensive tests to confirm remediation and compliance with all state and federal guidelines.
7. Closure Documentation will be submitted to all parties of concern upon reaching target concentrations and completion of the site according to guidelines.

VII. Figures & Appendices

Figure 1 – Vicinity Map

Figure 2 – Site Plan

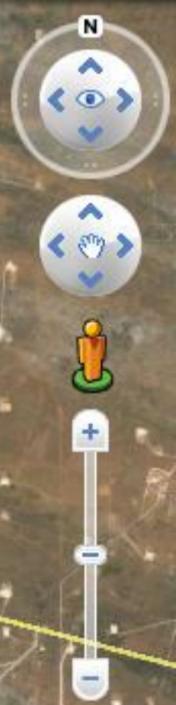
Appendix A – C-141

Appendix B – Groundwater

Appendix C – Photo Documentation

Appendix D - Analytical

Figure 1
Vicinity Map



176

Turn left
Continue straight
Keep right
Turn right

Campbell Rd
Continue straight to stay on Campbell Rd
Continue onto Red Rd

Turn left

Google earth

© 2015 Google

Imagery Date: 2/13/2014 32°27'00.86" N 103°35'04.43" W elev 3709 ft eye alt 19.22 mi

**Figure 2
Site Plan**

Devon
Checkers 24 Fed 05

Bore Hole 2

Spill Area =
4,922.03 sq. ft.

Bore Hole 3

Bore Hole 1

Bore Hole 4

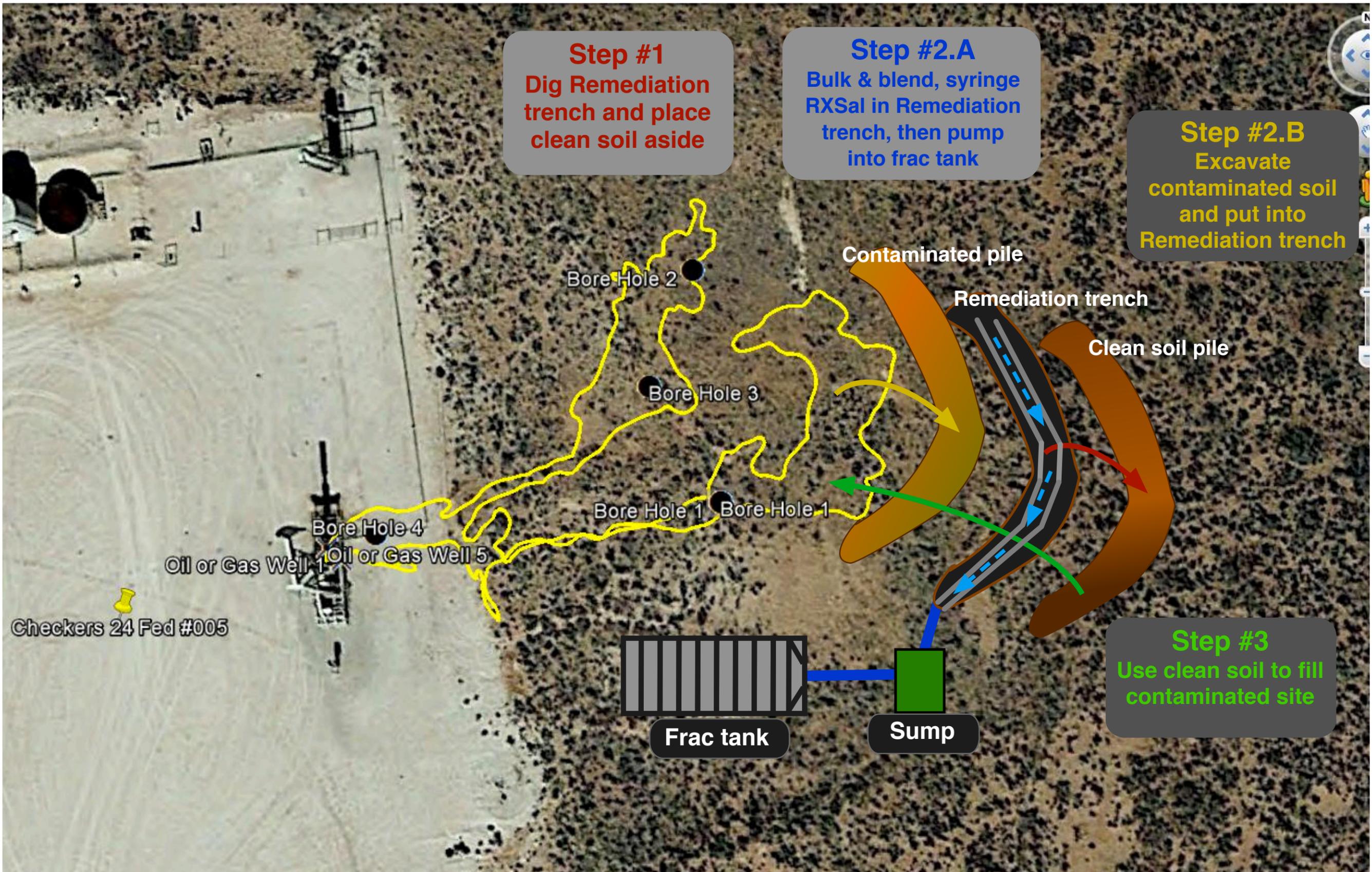
Well 5

Gas Well 1

Google earth

1996

Imagery Date: 2/13/2014 32°22'19.07" N 103°38'07.90" W elev 3760 ft eye alt 3965 ft



Step #1
Dig Remediation trench and place clean soil aside

Step #2.A
Bulk & blend, syringe RXSal in Remediation trench, then pump into frac tank

Step #2.B
Excavate contaminated soil and put into Remediation trench

Step #3
Use clean soil to fill contaminated site

Bore Hole 2

Bore Hole 3

Bore Hole 1

Bore Hole 1

Bore Hole 4

Oil or Gas Well 1

Oil or Gas Well 5

Checkers 24 Fed #005

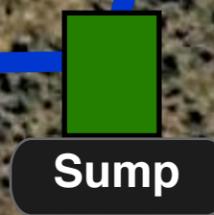
Contaminated pile

Remediation trench

Clean soil pile



Frac tank



Sump

Appendix A

C-141

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

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR Initial Report Final Report

Name of Company Devon Energy Production Company	Contact Randy Gladden; Production Foreman
Address 6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No. 575-513-9463
Facility Name Checkers 24 Federal 5	Facility Type Oil Well

Surface Owner Federal	Mineral Owner Federal	API No 30-025-33702
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	24	22S	32E	660	South	330	West	Lea

Latitude: 32.371731 **Longitude:** -103.635369

NATURE OF RELEASE

Type of Release Oil & produced water release	Volume of Release 7.5BBL oil & 7.5BBL produced water	Volume Recovered 2 BBLS oil
Source of Release Gauge on tubing line at the wellhead	Date and Hour of Occurrence October 23, 2015 4:00 PM	Date and Hour of Discovery October 23, 2015 4:00 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? BLM: Jim Amos OCD: Kellie Jones	
By Whom? BLM: Assistant Production Foreman Rebecca Jamison OCD: EHS Professional Brett Fulks	Date and Hour BLM: October 24, 2015 7:00 PM OCD: November 18, 2015 4:00 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse N/A	

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

Describe Cause of Problem and Remedial Action Taken.*
The top of the gauge on the tubing line at the well head blew out resulting in a release. Upon discovery the tubing was closed and the well was shut in immediately to prevent further release. The gauge has been replaced.

Describe Area Affected and Cleanup Action Taken.*
15 BBLS of oil and produced water mix; approximately 7.5 BBLS oil & 7.5 BBLS produced water was released from the gauge on the tubing line at the wellhead. 4,922.03 sq. ft. was affected. The spill originated at the wellhead and flowed in a northeasterly direction off the pad and into the pasture in two separate streams. Approximately 2 BBLS of oil were recovered via vacuum truck. Environmental Agency has been contacted for remediation.

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: <i>Sandy Farley</i>	OIL CONSERVATION DIVISION	
Printed Name: Sandra Farley	Approved by Environmental Specialist:	
Title: Field Admin Support	Approval Date:	Expiration Date:
E-mail Address: sandy.farley@dvn.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 11/19/2015 Phone: 575.746.5587		

* Attach Additional Sheets If Necessary

Appendix B

Groundwater



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

(R=POD has been replaced,
O=orphaned,
C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02096			ED	2	3	14	22S	32E		627204	3584464*	435	360	75
C 02821	C		LE	2	2	3	14	22S	32E	627303	3584563*	540	340	200
C 02939	C		LE	3	3	1	19	22S	32E	620234	3583042*	280		
C 03717 POD1	C		LE	4	4	1	09	22S	32E	624094	3586365	115	70	45

Average Depth to Water: **256 feet**
 Minimum Depth: **70 feet**
 Maximum Depth: **360 feet**

Record Count: 4

PLSS Search:

Township: 22S **Range:** 32E

*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.

Appendix C

Photo Documentation

**Devon Energy
Checkers 24 Federal #005
API 30-025-33702**



Leak source



View from west to leak source



Spill exiting pad to pasture (west)



Source of leak



West of location pasture impact



Pasture Impact

Appendix D

Analytical



November 05, 2015

Bob Allen
Safety & Environmental Solutions
703 East Clinton
Hobbs, NM 88240

RE: CHECKERS 24 FED #5

Enclosed are the results of analyses for samples received by the laboratory on 10/30/15 8:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style.

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:	10/30/2015	Sampling Date:	10/29/2015
Reported:	11/05/2015	Sampling Type:	Soil
Project Name:	CHECKERS 24 FED #5	Sampling Condition:	Cool & Intact
Project Number:	DEV-15-004	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: AH-1 SURFACE (H502847-01)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6400	16.0	11/03/2015	ND	416	104	400	3.92	

Sample ID: AH-1 1' (H502847-02)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	11/03/2015	ND	416	104	400	3.92	

Sample ID: AH-1 2' (H502847-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2015	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	11/05/2015	ND	2.29	115	2.00	1.45	
Ethylbenzene*	<0.050	0.050	11/05/2015	ND	2.11	105	2.00	2.28	
Total Xylenes*	<0.150	0.150	11/05/2015	ND	6.71	112	6.00	2.34	
Total BTEX	<0.300	0.300	11/05/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	11/03/2015	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

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:	10/30/2015	Sampling Date:	10/29/2015
Reported:	11/05/2015	Sampling Type:	Soil
Project Name:	CHECKERS 24 FED #5	Sampling Condition:	Cool & Intact
Project Number:	DEV-15-004	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: AH-1 2' (H502847-03)

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	11/03/2015	ND	203	101	200	4.48	
DRO >C10-C28	42.0	10.0	11/03/2015	ND	202	101	200	8.20	

Surrogate: 1-Chlorooctane 121 % 35-147

Surrogate: 1-Chlorooctadecane 135 % 28-171

Sample ID: AH-2 SURFACE (H502847-04)

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1600	16.0	11/03/2015	ND	416	104	400	3.92	

Sample ID: AH-2 1' (H502847-05)

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1360	16.0	11/03/2015	ND	416	104	400	3.92	

Sample ID: AH-2 2' (H502847-06)

Chloride, SM4500CI-B	mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1810	16.0	11/03/2015	ND	416	104	400	3.92	

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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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 Fax To: (575) 393-4388

Received:	10/30/2015	Sampling Date:	10/29/2015
Reported:	11/05/2015	Sampling Type:	Soil
Project Name:	CHECKERS 24 FED #5	Sampling Condition:	Cool & Intact
Project Number:	DEV-15-004	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: AH-2 2.5' (H502847-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2015	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	11/05/2015	ND	2.29	115	2.00	1.45	
Ethylbenzene*	<0.050	0.050	11/05/2015	ND	2.11	105	2.00	2.28	
Total Xylenes*	<0.150	0.150	11/05/2015	ND	6.71	112	6.00	2.34	
Total BTEX	<0.300	0.300	11/05/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/03/2015	ND	416	104	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	11/03/2015	ND	203	101	200	4.48	
DRO >C10-C28	14.5	10.0	11/03/2015	ND	202	101	200	8.20	

Surrogate: 1-Chlorooctane 114 % 35-147
Surrogate: 1-Chlorooctadecane 125 % 28-171
Sample ID: AH-3 SURFACE (H502847-08)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6130	16.0	11/03/2015	ND	416	104	400	3.92	

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:	10/30/2015	Sampling Date:	10/29/2015
Reported:	11/05/2015	Sampling Type:	Soil
Project Name:	CHECKERS 24 FED #5	Sampling Condition:	Cool & Intact
Project Number:	DEV-15-004	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: AH-3 1' (H502847-09)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	11/03/2015	ND	416	104	400	3.92	

Sample ID: AH-3 2' (H502847-10)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2015	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	11/05/2015	ND	2.29	115	2.00	1.45	
Ethylbenzene*	<0.050	0.050	11/05/2015	ND	2.11	105	2.00	2.28	
Total Xylenes*	<0.150	0.150	11/05/2015	ND	6.71	112	6.00	2.34	
Total BTEX	<0.300	0.300	11/05/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/03/2015	ND	416	104	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	11/03/2015	ND	203	101	200	4.48	
DRO >C10-C28	<10.0	10.0	11/03/2015	ND	202	101	200	8.20	

Surrogate: 1-Chlorooctane 111 % 35-147

Surrogate: 1-Chlorooctadecane 125 % 28-171

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Analytical Results For:

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

Received:	10/30/2015	Sampling Date:	10/29/2015
Reported:	11/05/2015	Sampling Type:	Soil
Project Name:	CHECKERS 24 FED #5	Sampling Condition:	Cool & Intact
Project Number:	DEV-15-004	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

Sample ID: AH-4 1' (H502847-11)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11300	16.0	11/03/2015	ND	416	104	400	3.92	

Sample ID: AH-4 2' (H502847-12)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/05/2015	ND	2.06	103	2.00	1.01	
Toluene*	<0.050	0.050	11/05/2015	ND	2.29	115	2.00	1.45	
Ethylbenzene*	<0.050	0.050	11/05/2015	ND	2.11	105	2.00	2.28	
Total Xylenes*	<0.150	0.150	11/05/2015	ND	6.71	112	6.00	2.34	
Total BTEX	<0.300	0.300	11/05/2015	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.6-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	11/03/2015	ND	416	104	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	11/03/2015	ND	203	101	200	4.48	
DRO >C10-C28	<10.0	10.0	11/03/2015	ND	202	101	200	8.20	

Surrogate: 1-Chlorooctane 110 % 35-147

Surrogate: 1-Chlorooctadecane 121 % 28-171

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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



Celey D. Keene, Lab Director/Quality Manager



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101 East Marland, Hobbs, NM 88240
(505) 393-2326 Fax (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

Company Name: Safety & Environmental Solutions, Inc.
 Project Manager: Bob Allen
 Address: 703 East Clinton
 City: Hobbs State: NM zip: 88240
 Phone #: 575-397-0510 Fax #: 575-393-4388
 Project #: DEV-15-004 Project Owner: Devon
 Project Name: CHECKERS 24 FD S
 Project Location: EDDY COUNDR
 Sampler Name: Ben Jerry
 Lab I.D.: H502847
 Sample I.D.:
 (G)RAB OR (C)OMP. # CONTAINERS
 MATRIX: GROUNDWATER, WASTEWATER, SOIL, OIL, SLUDGE, OTHER:
 PRESERV: ACID/BASE, ICE / COOL, OTHER:
 DATE: 10/29 TIME: 1020, 1025, 1045, 1100, 1120, 1150, 1210
 ANALYSIS: TP14 (8015), BTex, Chlorides
 RECEIVED BY: [Signature]
 DELIVERED BY: [Signature]

PLEASE NOTE: Liberty and Designated Contractors liability and efforts are restricted to 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. As such, the client agrees to release and hold Cardinal harmless from and against all claims, damages, losses, and expenses, including reasonable attorneys' fees, 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 releases or otherwise.

Delivered By: (Circle One) UPS Bus Other
 Temp. 36.2
 Sample Condition: Cool Intact Yes No
 CHECKED BY: [Signature]
 Phone Result: Yes No
 Add'l Phone #:
 Add'l Fax #:
 REMARKS: #54



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 of 2

ANALYSIS REQUEST

Company Name: Safety & Environmental Solutions, Inc. P.O. #
 Project Manager: Bob Allen Company: Same
 Address: 703 East Clinton
 City: Hobbs State: NM zip: 88240
 Phone #: 575-397-0510 Fax #: 575-393-4388
 Project # Dev-15-004 Project Owner: Devon
 Project Name: CHEVENS rd 7th S
 Project Location: SDD by County
 Sampler Name: Bob Allen
 For Lab Use Only

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS	
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :				
H089847	8 AHT-3	Surface	1			X				10/29	1230	TPH (8015)	
	9 AHT-3	RT	1			X				10/29	1250	BTEX	
	10 AHT-3	RT	1			X				10/29	1330	Chlorides	
	11 AHT-4	RT	1			X				10/29	1415		
	12 AHT-4	RT	1			X				10/29	1430		

Delivered By: (Circle One) UPS - Bus - Other: 3602 #51
 Temp. Sample Condition: Cool Intact Yes No
 Received By: Special Services
 Date: 10/29
 Time: 1430
 Remarks: Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 Terms and Conditions: Patient will be charged on all accounts more than 30 days past due at the rate of 2.5% per annum from the original date of invoice, and all costs of collections, including attorney's fees.