

# **Devon Energy Production Co LP**

**Cotton Draw Unit SWD 181**

## **Delineation Report and Work Plan**

**(Revised)**

**Unit Letter H, Section 36, T24S, R31E  
Eddy County, New Mexico**

**30-015-41649**

**December 9, 2015**



**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**

## TABLE OF CONTENTS

<b>I. COMPANY CONTACTS.....</b>	<b>1</b>
<b>II. BACKGROUND.....</b>	<b>1</b>
<b>III. SURFACE AND GROUND WATER.....</b>	<b>1</b>
<b>IV. CHARACTERIZATION.....</b>	<b>1</b>
<b>V. WORK PERFORMED.....</b>	<b>2</b>
<b>VI. ACTION PLAN.....</b>	<b>2</b>
<b>VII. FIGURES &amp; APPENDICES .....</b>	<b>3</b>
Figure 1 – Vicinity Map.....	5
Figure 2 – Site Plan .....	6
Appendix A – C-141 .....	9
Appendix B – Groundwater .....	11
Appendix C – Photo Documentation .....	12
Appendix D – Analytical Data.....	123

## 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 site assessment and delineation on the Cotton Draw Unit SWD 181, concerning a one hundred barrel (100 bbl) release comprising of produced water. This site is situated in Eddy County, Section 36, Township 24S, and Range 31E.

According to the C-141, a load line valve was inadvertently left open. This resulted in a 100 bbl. Release of produced water onto the pad area. The valve was shut in as soon as possible. This created an area of impact measuring approximately 50' X 100'. A vacuum truck was utilized to recover approximately Fifty (50 bbl.) of fluid in order to minimize impact to ground surface (Appendix A). Check valves have since been installed on the load lines in an effort to prevent this type of spill from reoccurrence.

## 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 Eddy County, Section 36, Township 24S, and Range 31E which indicate the average depth to groundwater for the area to be 182' 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 12, 2015, SESI was onsite to photograph, assess and map the spill area.

SESI personnel visited the site to conduct a vertical and horizontal delineation of the impacted area. It was determined that two (2) sample point positions would be sufficient given the dynamics and outlay of the area. The two bore holes were advanced to depths of 4' bgs., where vertical extent was reached in each bore hole. Representative soil samples were properly packaged, preserved and transported to Cardinal Laboratories, Hobbs New Mexico and analyzed for Chloride (Cl<sup>-</sup>) (Method SM 4500Cl-B). The results of the analysis are presented in the table below (Appendix D):

Sample Date 10/12/2015		Chloride (mg/kg)	
Depth			
BH-1 Surf-1'		64.0	
BH-1 2'		32.0	
BH-1 3'		272	
BH-1 4'		16.0	
BH-2 Surf-1'		128	
BH-2 2'		48.0	
BH-2 3'		32.0	
BH-2 4'		64.0	

On October 23, 2015, Bob Allen from SESI met on-site with representative, Brett Fulks and Gary Michaels from Devon Energy. The site is a Salt Water Disposal Facility with a significant amount of trucking and disposal activity. The location of the spill area is immediately under the load line stations for trucks. The spill traversed west into the bermed area south of the battery. The area under the load lines has a significant number of water, as well as electrical lines that crisscross the area making excavation in this area unfeasible. Excavation in this area will necessitate the costly shutdown of the facility for an undetermined amount of time. Saving the removal of the lines, excavation in this area would not achieve reasonable remediation of the spill. (Appendix C).

On December 01, 2015, SESI personnel together with personnel of Custom Welding revisited the site per the request of the NMOCD (Artesia District). Test Trenches were excavated and simultaneous field testing of representative soil samples conducted in order to confirm vertical extent of Chloride constituencies in the same locations as were previously reported by Enviro Clean Services, L.L.C. The representative soil samples were properly packaged, preserved and transport to Cardinal Laboratories, Hobbs New Mexico and analyzed for Chloride (Cl<sup>-</sup>) (Method SM 4500C:-B). The results of the analysis are presented in the table below (Appendix D):

<b>Sample Date</b> <b>12/01/2015</b>	<b>Chloride</b> <b>(mg/kg)</b>
<b>Depth</b>	
TT-1 Surface	224
TT-1 1'	32.0
TT-2 Surface	13000
TT-2 1'	448
TT-2 2'	704
TT-2 3'	80.0
TT-3 Surface	6040
TT-3 1'	<16.0
TT-4 Surface	1630
TT-4 1'	48.0

On January 08, 2016 SESI personnel returned to the site together with personnel and equipment from Custom Welding in order to further delineate the pad area. Test Trenches were then advanced to depths of 6' and 7' bgs., respectively. Representative soil samples were retrieved at 1' intervals in depth. The representative soil samples were properly packaged, preserved and transported to Cardinal Laboratories, Hobbs New Mexico and analyzed for Chloride (Cl<sup>-</sup>) (Method SM 4500C:-B). The results of the analysis are presented in the table below (Appendix D):

<b>Sample Date</b> <b>01/08/2016</b>	<b>Chloride</b> <b>(mg/kg)</b>
<b>Depth</b>	
TT-1 Surface	816
TT-1 4'	208
TT-1 6'	48
TT-1 7'	32
TT-2 Surface	192
TT-2 2'	32
TT-2 4'	<16.0
TT-2 5'	64
TT-2- 7'	<16.0
TT-3 Surface	48
TT-3 2'	528
TT-3 4'	64.0
TT-3 5'	48
TT-3 7'	64
TT-4 Surface	<16.0
TT-4 2'	48
TT-4 4'	64
TT-4 5'	32
TT-4 7'	64

## **VI. Action Plan**

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

Excavate 2' of contaminated soils from the south and west side of the tank battery, as indicated in (Figure 2). The excavated material will be transported to an approved NMOCD facility for disposal. The pad area is to be excavated to 6" bgs.' and representative soil samples taken from the bottom, and field tested. NMOCD is to be apprised of the chloride levels at that depth. If the chloride levels are not within NMOCD guidelines, an additional 6" is to be removed for a maximum total of a 1' bgs removal, and bottom samples retrieved for confirmation of acceptable levels. In all areas; composite samples will be taken from the sides and bottom of the excavated areas. The samples will be taken to a commercial laboratory for final analysis and confirmation. The excavated area will be backfilled with material similar to that removed, returning to grade and esthetically restore the area. All closure documentation will be submitted to Devon representative, NMOCD and BLM upon completion of site remediation.

## **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**



Turn left onto NM-128 E Turn left onto NM-128 E

Cotton Draw Unit SWD 181

Cotton Draw 10 Federal Com 3H  
Devon Cotton Draw 11

© 2015 Google

Google earth

Imagery Date: 2/13/2014 32°10'49.01" N 103°38'57.48" W elev 3558 ft eye alt 16.17 mi



**Figure 2**  
**Site Plan**



BH-1

1'	Cl 64.0 mg/kg
2'	Cl 32.0
3'	Cl 272
4'	Cl 16.0

Tank 7  
Tank 8  
Tank 14  
Tank 15  
Tank 6  
Tank 16  
Tank 5  
Tank 17  
Tank 18

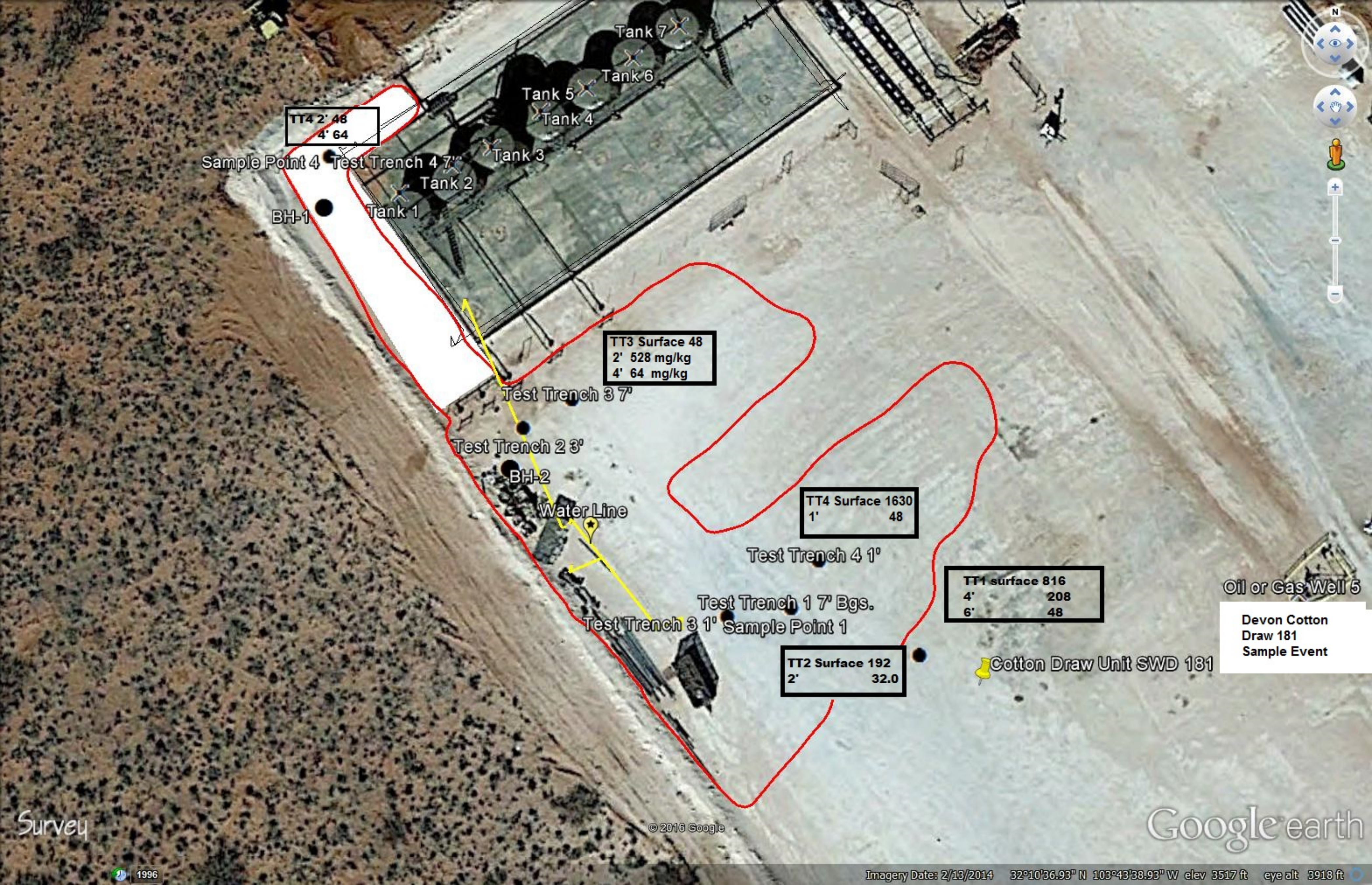
BH-2

1'	Cl 128 mg/kg
2'	Cl 48
3'	Cl 32
4'	Cl 64

Cotton Draw Unit SWD 181

Google earth





TT4 2' 48  
4' 64

Sample Point 4

Test Trench 4 7'

BH-1

Tank 1

Tank 2

Tank 3

Tank 4

Tank 5

Tank 6

Tank 7

TT3 Surface 48  
2' 528 mg/kg  
4' 64 mg/kg

Test Trench 3 7'

Test Trench 2 3'

BH-2

Water Line

TT4 Surface 1630  
1' 48

Test Trench 4 1'

Test Trench 1 7' Bgs.

Test Trench 3 1' Sample Point 1

TT2 Surface 192  
2' 32.0

TT1 surface 816  
4' 208  
6' 48

Cotton Draw Unit SWD 181

Oil or Gas Well 5

Devon Cotton  
Draw 181  
Sample Event

Survey

© 2016 Google

Google earth

1996

Imagery Date: 2/13/2014 32°10'36.93" N 103°43'38.93" W elev 3517 ft eye alt 3918 ft



# **Appendix A**

## **C-141**



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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised August 8, 2011

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

## Release Notification and Corrective Action

### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Devon Energy Production Company	Contact	Joah Weidemann; Production Foreman
Address	6488 Seven Rivers Hwy Artesia, NM 88210	Telephone No.	575-513-1528
Facility Name	Cotton Draw Unit SWD 181	Facility Type	Salt Water Disposal

Surface Owner:	Federal	Mineral Owner:	Federal	API No	30-015-41649
----------------	---------	----------------	---------	--------	--------------

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
H	36	24S	31E	1568	North	1189	East	Eddy

Latitude: N 32.1767786

Longitude: W 103.7268063

### NATURE OF RELEASE

Type of Release	produced water spill	Volume of Release	100BBLS	Volume Recovered	30BBLS
Source of Release	Load line valve left open	Date and Hour of Occurrence	February 24, 2015 3:00 PM	Date and Hour of Discovery	February 24, 2015 3:00 PM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Jeff Robertson; BLM & Mike Bratcher; OCD		
By Whom?	Assistant Production Foreman; Kevin Phillips	Date and Hour	February 24, 2015 @6:45PM		
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.\*

A load line valve was left open resulting in 100BBLS of produced water being released onto the location. The valve was shut as soon as the release was noticed.

Describe Area Affected and Cleanup Action Taken.\*

The 100BBLS of released produced water affected an area approximately 50' x 100' on the southwest side of the location. A vacuum truck recovered 30BBLS of the released fluid. The produced water did not leave the pad and did not reach the pasture.

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>	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Sandra Farley			
Title: <b>Field Admin Support</b>	Approved by Environmental Specialist:	Approval Date:	Expiration Date:
E-mail Address: <b>sandy.farley@dvn.com</b>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 2.26.15 Phone: <b>575.746.5587</b>			

\* 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
<a href="#">C 02405</a>	C	ED		4	1	02	24S	31E		617690	3568631*	275	160	115
<a href="#">C 02440</a>	C	ED		2	3	10	24S	31E		616103	3566599*	350		
<a href="#">C 02460</a>	C	ED		3	02		24S	31E		617496	3568022*	320		
<a href="#">C 02460 POD2</a>	C	ED		3	02		24S	31E		617496	3568022*	320		
<a href="#">C 02464</a>	C	ED		3	4	1	02	24S	31E	617589	3568530*	320	205	115
<a href="#">C 02661</a>		ED		3	3	1	04	24S	31E	613969	3568485*	708		
<a href="#">C 02783</a>	CUB	ED		3	3	1	04	24S	31E	613911	3568461	708		
<a href="#">C 02783 POD2</a>	C	ED		3	3	1	04	24S	31E	613911	3568461	672		
<a href="#">C 02784</a>	C	ED		4	2	4	04	24S	31E	613911	3568461	584		
<a href="#">C 02785</a>		ED		3	3	1	04	24S	31E	613969	3568485*	692		

Average Depth to Water: **182 feet**

Minimum Depth: **160 feet**

Maximum Depth: **205 feet**

Record Count: 10

### Basin/County Search:

County: Eddy

### PLSS Search:

Township: 24S

Range: 31E

\*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  
Cotton Draw Unit SWD 181  
API 30-015-41649**



Site at Fill Lines



Looking Northeast



Impact at rear of tanks



Impacted area north side of site



## **Appendix D Analytical**



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

---

October 20, 2015

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: COTTON DRAW #181 SWD

Enclosed are the results of analyses for samples received by the laboratory on 10/16/15 15:30.

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](http://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 with a large, stylized 'C' and 'K'.

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:	10/16/2015	Sampling Date:	10/16/2015
Reported:	10/20/2015	Sampling Type:	Soil
Project Name:	COTTON DRAW #181 SWD	Sampling Condition:	** (See Notes)
Project Number:	DEV-15-003	Sample Received By:	Jodi Henson
Project Location:	LEA COUNTY, NM		

**Sample ID: BH-1 SURF - 1' (H502714-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	10/20/2015	ND	448	112	400	7.41	

**Sample ID: BH-1 2' (H502714-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/20/2015	ND	352	88.0	400	12.8	

**Sample ID: BH-1 3' (H502714-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	272	16.0	10/20/2015	ND	352	88.0	400	12.8	

**Sample ID: BH-1 4' (H502714-04)**

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	10/20/2015	ND	352	88.0	400	12.8	

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 10/16/2015  
Reported: 10/20/2015  
Project Name: COTTON DRAW #181 SWD  
Project Number: DEV-15-003  
Project Location: LEA COUNTY, NM

Sampling Date: 10/16/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: BH-2 SURF - 1' (H502714-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/20/2015	ND	352	88.0	400	12.8		

**Sample ID: BH-2 2' (H502714-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/20/2015	ND	352	88.0	400	12.8	

**Sample ID: BH-2 3' (H502714-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/20/2015	ND	352	88.0	400	12.8		

**Sample ID: BH-2 4' (H502714-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	10/20/2015	ND	352	88.0	400	12.8		

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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

---

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager



# CARDINAL LABORATORIES

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_\_ of \_\_\_\_\_

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 #: DEL-15-003 Project Owner: DENVER

Project Name: Central Draw (81 SWD)

Project Location: Lee County

Sampler Name: Scott Jerny

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST									
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :												
1	BH-1	Surf-1 ft	1									1000									
2	BH-1	2 ft	1									1010									
3	BH-1	3 ft	1									1015									
4	BH-1	4 ft	1									1030									
5	BH-2	Surf 1 ft	1									1100									
6	BH-2	2 ft	1									1105									
7	BH-2	3 ft	1									1130									
8	BH-2	4 ft	1									1145									

PLEASE NOTE: Liability and Damages: Cardinal's liability and the extent of its liability for any claim arising out of or related to the performance of services rendered by Cardinal is 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 agents shall not be held liable for the performance of services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished:

Date: 10/16/15

Received By:

Scott Jerny

Scott Jerny

Date:

Received By:

Time:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Temp. 14.8C

Sample Condition  
Cool ☒ Intact ☒  
Yes ☒ No ☐

CHECKED BY: [Signature]

Phone Result: ☐ Yes ☐ No

Fax Result: ☐ Yes ☐ No

Add'l Phone #: \_\_\_\_\_

Add'l Fax #: \_\_\_\_\_

REMARKS:

Chlorides

\* Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476.

#54



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

---

December 08, 2015

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: COTTON DRAW #181 SWD

Enclosed are the results of analyses for samples received by the laboratory on 12/02/15 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](http://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, flowing 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:	12/02/2015	Sampling Date:	12/01/2015
Reported:	12/08/2015	Sampling Type:	Soil
Project Name:	COTTON DRAW #181 SWD	Sampling Condition:	** (See Notes)
Project Number:	DEV-15-003	Sample Received By:	Jodi Henson
Project Location:	EDDY CO.		

**Sample ID: TT-1 SURFACE (H503146-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	12/04/2015	ND	464	116	400	3.51		

**Sample ID: TT-1 1' (H503146-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/04/2015	ND	464	116	400	3.51		

**Sample ID: TT-2 SURFACE (H503146-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	13000	16.0	12/04/2015	ND	464	116	400	3.51		

**Sample ID: TT-2 1' (H503146-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	12/04/2015	ND	464	116	400	3.51		

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 12/02/2015  
Reported: 12/08/2015  
Project Name: COTTON DRAW #181 SWD  
Project Number: DEV-15-003  
Project Location: EDDY CO.

Sampling Date: 12/01/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: TT-2 2' (H503146-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	704	16.0	12/04/2015	ND	464	116	400	3.51	

**Sample ID: TT-2 3' (H503146-06)**

Chloride, SM4500Cl-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	12/04/2015	ND	464	116	400	3.51	

**Sample ID: TT-3 SURFACE (H503146-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6040	16.0	12/04/2015	ND	464	116	400	3.51	

**Sample ID: TT-3 1' (H503146-08)**

Chloride, SM4500Cl-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	12/04/2015	ND	400	100	400	3.92		

**Sample ID: TT-4 SURFACE (H503146-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1630	16.0	12/04/2015	ND	400	100	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 12/02/2015  
Reported: 12/08/2015  
Project Name: COTTON DRAW #181 SWD  
Project Number: DEV-15-003  
Project Location: EDDY CO.

Sampling Date: 12/01/2015  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Jodi Henson

**Sample ID: TT-4 1' (H503146-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	12/04/2015	ND	400	100	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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

---

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager





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

---

January 12, 2016

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: COTTON DRAW #181 SWD

Enclosed are the results of analyses for samples received by the laboratory on 01/11/16 9:00.

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](http://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, flowing 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:	01/11/2016	Sampling Date:	01/07/2016
Reported:	01/12/2016	Sampling Type:	Soil
Project Name:	COTTON DRAW #181 SWD	Sampling Condition:	** (See Notes)
Project Number:	DEV-15-003	Sample Received By:	Jodi Henson
Project Location:	EDDY CO.		

**Sample ID: TT-1 SURFACE (H600045-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	816	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-1 4' (H600045-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-1 6' (H600045-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-1 7' (H600045-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/11/2016	ND	432	108	400	3.77	

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 01/11/2016  
 Reported: 01/12/2016  
 Project Name: COTTON DRAW #181 SWD  
 Project Number: DEV-15-003  
 Project Location: EDDY CO.

 Sampling Date: 01/07/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: TT-2 SURFACE (H600045-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-2 2' (H600045-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-2 4' (H600045-07)**

Chloride, SM4500Cl-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	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-2 5' (H600045-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-2 7' (H600045-09)**

Chloride, SM4500Cl-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	01/11/2016	ND	432	108	400	3.77		

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 01/11/2016  
 Reported: 01/12/2016  
 Project Name: COTTON DRAW #181 SWD  
 Project Number: DEV-15-003  
 Project Location: EDDY CO.

 Sampling Date: 01/07/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: TT-3 SURFACE (H600045-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-3 2' (H600045-11)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-3 4' (H600045-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-3 5' (H600045-13)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-3 7' (H600045-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/11/2016	ND	432	108	400	3.77	

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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: 01/11/2016  
 Reported: 01/12/2016  
 Project Name: COTTON DRAW #181 SWD  
 Project Number: DEV-15-003  
 Project Location: EDDY CO.

 Sampling Date: 01/07/2016  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Jodi Henson

**Sample ID: TT-4 SURFACE (H600045-15)**

Chloride, SM4500Cl-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	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-4 2' (H600045-16)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	01/11/2016	ND	432	108	400	3.77	

**Sample ID: TT-4 4' (H600045-17)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	01/11/2016	ND	432	108	400	3.77		

**Sample ID: TT-4 5' (H600045-18)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/11/2016	ND	448	112	400	3.64	

**Sample ID: TT-4 7' (H600045-19)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	01/11/2016	ND	448	112	400	3.64	

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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

---

Cardinal Laboratories

\*=Accredited Analyte

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 client for 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 thirty (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 the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240  
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page 1 of 2

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: SEST					
Project Manager:					
Address: 703 E. CLINTON, #103					
City: HOBBS State: NM Zip: 88240					
Phone #: (505) 397-0510					
Fax #: (505) 393-4388					
Project #: Del-15-003 Project Owner: Denver					
Project Name: Corral Verde 181					
Project Location: 3082 Jerry					
FOR LAB USE ONLY					
LAB I.D.					
Sample I.D.					
H000045					
(G)RAB OR (C)OMP.					
# CONTAINERS					
GROUNDWATER					
WASTEWATER					
SOIL					
OIL					
SLUDGE					
OTHER:					
ACID:					
ICE / COOL					
OTHER:					
DATE					
TIME					
MATRIX					
PRES.					
SAMPLING					
1 TT-1 Surface 5/1 1030					
2 TT-1 4ft 5/1 1045					
3 TT-1 6ft 5/1 1115					
4 TT-1 7ft 5/1 1200					
5 TT-2 Surface 5/1 1215					
6 TT-2 2ft 5/1 1220					
7 TT-2 4ft 5/1 1230					
8 TT-2 5ft 5/1 1245					
9 TT-2 7ft 5/1 1250					
10 TT-3 Surface 5/1 1300					
REMARKS: X					
ANALYSIS REQUEST					



