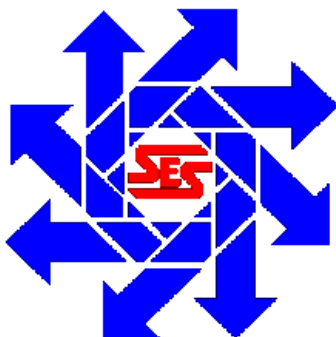


**Devon Energy Production Co LP
Cotton Draw Unit 214H
Produced Water Transfer Line Release
Delineation Report and Work Plan**

**Unit Letter C, Section 36, T24S, R31E
Lea County, New Mexico**

May 27, 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**

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I. Company Contacts

Representative	Company	Telephone	E-mail
Denise Menoud	Devon Energy Prod.	575-746-5544	Denise.Menoud@dvn.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc. (SESI) was engaged by Alfredo's Trucking to perform site delineation of an off-pad produced water release near Cotton Draw Unit 214H. No crude oil was released. The release is on New Mexico state land in Unit Letter C, Section 36, Township 24 South, Range 31 East, Eddy County, New Mexico. The 214H location is at 32.180536° N, 103.734514° W. The spill is adjacent to a lease road approximately 0.1 miles east and 0.1 miles south of the entrances to the 214H location. The GPS coordinates at the point of release are 32.177516° N, 103.733149° W.

According to the C-141 the cause of release was a hose separation from the hammer union off the trunk line. The separation occurred when a pump was activated to send water to the Unit 214 Poseidon tank. An estimated 6 bbls spilled onto the ground of which an estimated 1 bbl was recovered by the vacuum truck. From the point of release the spill travelled approximately 8 feet to the north, 8 feet to the east, 7 feet to the west across the lease road, and 22 feet to the south. The contaminated area is estimated to be 3,500 square-feet.

III. Surficial Soils

The Eddy County Soil Survey prepared by the US Department of Agriculture shows soils in the area to be of the Berino Series. These are deep, noncalcareous, yellowish-red to red, sandy soils that developed in wind-worked material of mixed origin. The surface layer is typically yellowish-red fine sand about 17 inches thick with the substratum to a depth of 60 inches composed of a fine sandy loam (17-23 inches), sandy clay loam (23-50 inches), and clay loam with soft caliche (50-60 inches). Surficial characteristics consist primarily of hummocky sand hills with vegetation consisting of bush muhly, plains bristlegrass, blue grama, mesquite and Harvard oak.

IV. Surface and Ground Water

The nearest surface water is the Pecos River approximately 14 miles west of the location. There are no large arroyos or drainage channels in the immediate area of the release.

The nearest groundwater well of record is approximately 1 mile south of the site. The New Mexico Office of State Engineer record is in Section 1, Township 25 South, Range 31 East. The well was drilled to a depth of 1,025 feet in 1973; there is no record of depth to water in the well. A depth to water map in use by the OCD shows estimated depth to water at the Unit 214 location to be about 375 feet below land surface.

V. 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, ethylbenzene, 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

VI. Work Performed

On May 21, 2015, SESI was onsite with Alfredos Trucking to begin delineation. Five test trenches were dug for sampling and a trench 15 ft x 40 ft. was excavated to a depth of 2 ft. Approximately 45 cubic yards of material was loaded in to a 20 yd. dump truck and hauled to Lea Land for disposal.

Test trench 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:

Sample ID	Depth (feet)	Laboratory Number	Result (mg/kg)
TT-1	2	H501291-01	4,080
TT-1	3	H501291-02	576
TT-1	4	H501291-03	<16.0

Sample ID	Depth (feet)	Laboratory Number	Result (mg/kg)
TT-2	2	H501291-04	304
TT-2	3	H501291-05	2,640
TT-2	4	H501291-06	144

Sample ID	Depth (feet)	Laboratory Number	Result (mg/kg)
TT-3	2	H501291-07	96.0

Note: Field sampling indicated chloride at less than 128 ppm, no deeper samples collected.

Sample ID	Depth (feet)	Laboratory Number	Result (mg/kg)
TT-4	2	H501291-08	560
TT-4	3	H501291-09	1,220
TT-4	4	H501291-10	32.0

Sample ID	Depth (feet)	Laboratory Number	Result (mg/kg)
TT-5	2	H501291-11	<16.0

Note: Field sampling indicated chloride at less than 128 ppm, no deeper samples collected.

VII. Action Plan

Due to the results listed above the following action plan is proposed:

Excavate and remove all chloride-contaminated soil to the depth where the chloride concentration is 1,000 mg/kg or less as determined by sampling of sidewalls and bottom of the excavation. Contaminated soils will be transported to an approved NMOCD facility for disposal. Composite confirmation samples will be taken from the sides and bottom of the excavation area. The excavated area will be backfilled with material similar to that removed.

VIII. Figures & Appendices

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Appendix A – C-141

Appendix B – Photographs

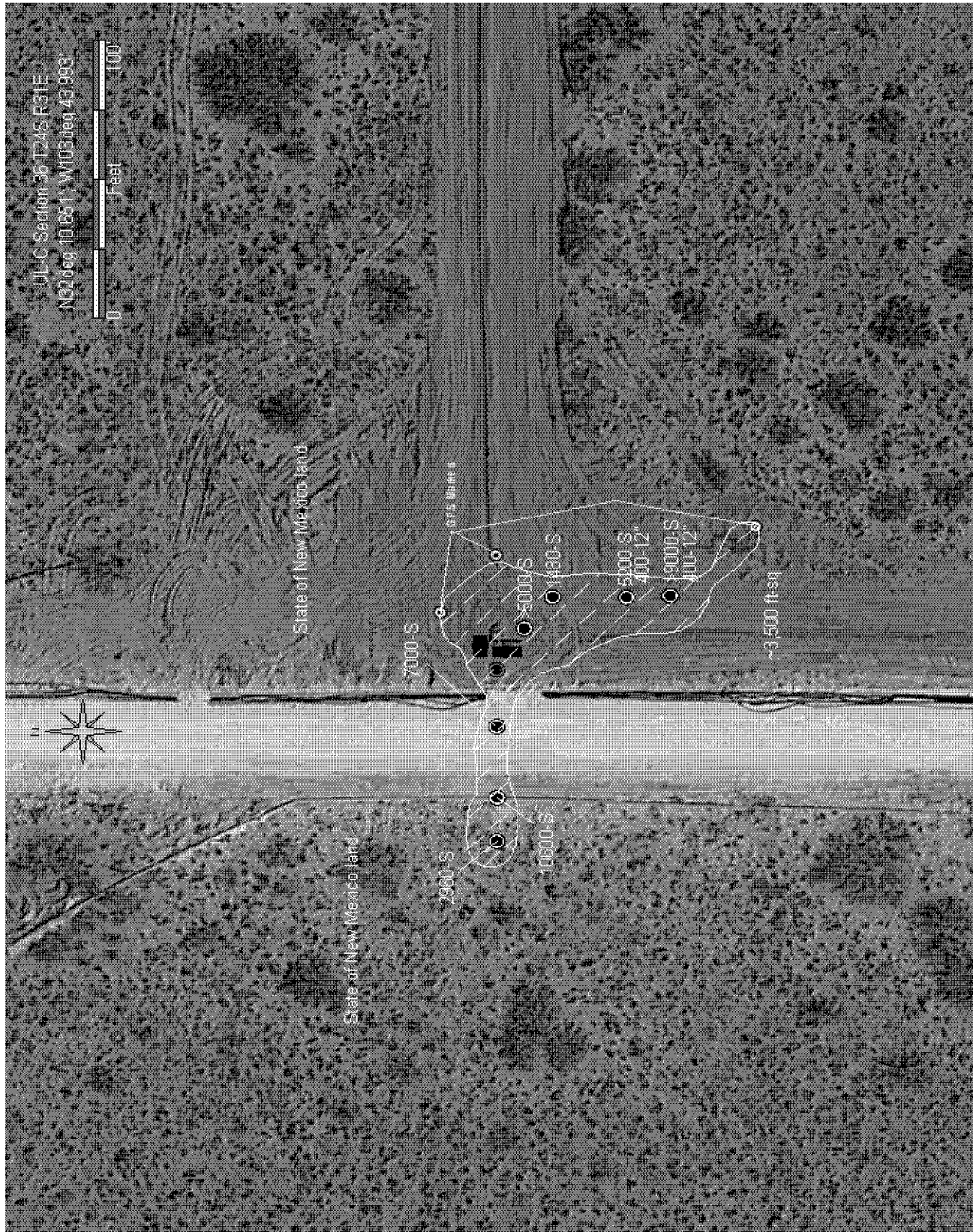
Appendix C – Analytical Results

Figure 1 Vicinity Map



Figure 2

Site Plan



Site plan with chloride surface sample concentrations (PPM)

Appendix A

C-141

Cotton Draw Unit 214H
May 27, 2015

Devon Energy Production
Eddy County, New Mexico

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

NM OIL CONSERVATION
ARTESIA DISTRICT

MAR 20 2015

Form C-141
Revised August 8, 2011

RECEIVED
Submit copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB150823454 OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: Devon Energy Production Co LP (6137)	Contact: Brian Kuh, Devon Completions Foreman
Address: PO Box 250 Artesia, NM 88211	Telephone No. 575-616-1540
Facility Name: Near Cotton Draw Unit 214H	Facility Type: Well location - OFF PAD
Surface Owner: State	Mineral Owner: Federal
API No. 30-015-41537	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	36	24S	31E	200	North	1710	West	Eddy

Latitude: 32 deg 10' 49.931" N Longitude: 103 deg 44' 4.25" W

NATURE OF RELEASE

Type of Release: Produced Water from Trunk Line	Volume of Release: 6 bbls	Volume Recovered: 1 bbl
Source of Release: Water transfer trunk line	Date and Hour of Occurrence: 3/18/2015, 2:45 PM	Date and Hour of Discovery: 3/18/2015, 2:45 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? OCD Artesia - Mike Bratcher BLM Carlsbad - Jim Amos	
By Whom? Brian Kuh, Completions Foreman	Date and Hour: 3/19/15, 8:30 AM - OCD phones out of order 3/20/15, 7:30 AM - voicemail to Mike Bratcher 3/19/15, 8:30 AM - voicemail to Jim Amos	
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.* Bosque Supervisor turned on pump to send water to Cotton Draw Unit 214 Poseidon tank. When the water started flowing, the hose separated from the hammer union off of the trunk line causing the spill.		
Describe Area Affected and Cleanup Action Taken.* The spill traveled approximately 8 feet to the North, 8 feet to the East, 7 feet to the West, and 22 feet to the South of the point of release. A vacuum truck was used to clean up as much water as possible, approximately 1 barrel. Alfredo's was called in to take soil samples.		
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>Denise Menoud</u>	OIL CONSERVATION DIVISION	
Printed Name: Denise Menoud	Signed By: <u>Mike Bratcher</u>	
Title: Field Admin Support	Approved by Environmental Specialist:	
E-mail Address: Denise.Menoud@devn.com	Approval Date: 3/23/15	Expiration Date: N/A
Date: 3/20/2014 Phone: 575-746-5544	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 4/25/15	

* Attach Additional Sheets If Necessary

Attached ☐

2RPT-2904

Appendix B

Site Photographs





Photographs taken by Alfredo's Trucking.

Appendix C – Analytical Results



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

May 27, 2015

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

RE: DEVON COTTON DRAW #214

Enclosed are the results of analyses for samples received by the laboratory on 05/22/15 8:30.

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.

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



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

Analytical Results For:

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

Received:	05/22/2015	Sampling Date:	05/21/2015
Reported:	05/27/2015	Sampling Type:	Soil
Project Name:	DEVON COTTON DRAW #214	Sampling Condition:	** (See Notes)
Project Number:	ALF-15-004	Sample Received By:	Amanda Ponce
Project Location:	EDDY COUNTY, NM		

Sample ID: TT-1 2' BGS (H501291-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4080	16.0	05/27/2015	ND	432	108	400	7.69	

Sample ID: TT-1 3' BGS (H501291-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	05/27/2015	ND	432	108	400	7.69	

Sample ID: TT-1 4' BGS (H501291-03)

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	05/27/2015	ND	432	108	400	7.69	

Sample ID: TT-2 2' BGS (H501291-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	05/27/2015	ND	432	108	400	7.69	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	05/22/2015	Sampling Date:	05/21/2015
Reported:	05/27/2015	Sampling Type:	Soil
Project Name:	DEVON COTTON DRAW #214	Sampling Condition:	** (See Notes)
Project Number:	ALF-15-004	Sample Received By:	Amanda Ponce
Project Location:	EDDY COUNTY, NM		

Sample ID: TT-2 3' BGS (H501291-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2640	16.0	05/27/2015	ND	432	108	400	7.69	

Sample ID: TT-2 4' BGS (H501291-06)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	05/27/2015	ND	432	108	400	7.69	

Sample ID: TT-3 2' BGS (H501291-07)

Chloride, SM4500Cl-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	05/27/2015	ND	432	108	400	7.69	

Sample ID: TT-4 2' BGS (H501291-08)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	05/27/2015	ND	432	108	400	0.00	

Sample ID: TT-4 3' BGS (H501291-09)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1220	16.0	05/27/2015	ND	432	108	400	0.00	

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received:	05/22/2015	Sampling Date:	05/21/2015
Reported:	05/27/2015	Sampling Type:	Soil
Project Name:	DEVON COTTON DRAW #214	Sampling Condition:	** (See Notes)
Project Number:	ALF-15-004	Sample Received By:	Amanda Ponce
Project Location:	EDDY COUNTY, NM		

Sample ID: TT-4 4' BGS (H501291-10)

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	05/27/2015	ND	432	108	400	0.00		

Sample ID: TT-5 2' BGS (H501291-11)

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	05/27/2015	ND	432	108	400	0.00		

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Celest D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Page 1 of 2

Page 6 of 7



CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 2 of 2[illegible]