

AMARILLO 921 North Bivins Amarillo, Texas 79107 Phone 806.467.0607 Fax 806.467.0622

ARTESIA 408 West Texas Ave. Artesia, New Mexico 88210 Phone 575.746.8768 Fax 575.748.8905

HOBBS 318 East Taylor Street Hobbs, New Mexico 88241 Phone 505.393.4261 Fax 505.393.4658

MIDLAND 2901 State Highway 349 Midland, Texas 79706 Phone 432.522.2133 Fax 432.522.2180

OKLAHOMA CITY 7700 North Hudson Ave Suite 10 Oklahoma City, Oklahoma 73116 Phone 405.486.7030 Fax 806.467.0622

> SAN ANTONIO 13111 Lookout Way San Antonio, TX 78233 Phone 210.265.8025 Fax 210.568.2191

ENVIRONMENTAL CONSULTING
ENGINEERING
DRILLING
CONSTRUCTION
SPILL MANAGEMENT
GENERAL CONTRACTING

February 14, 2014

Mr. Mike Bratcher **NMOCD District 2** 811 S. 1<sup>st</sup> Street Artesia, NM 88210

Subject:

Soil Assessment and Remediation Work Plan

Devon Energy

Cotton Draw Unit No. 114 API # 30-015-37410 2RP-962 & 2RP-2076

FEB **2 1** 2014 NMOCD ARTESIA

RECEIVED

Dear Mr. Bratcher,

Devon Energy has contracted Talon/LPE (Talon) to perform soil assessment and remediation services for the Cotton Draw Unit No. 114 release. The results of our soil assessment and proposed remediation activities consist of the following:

#### **Incident Date**

November 11, 2011 & November 16, 2013

#### **Background Information**

The Cotton Draw Unit No. 114 is located approximately forty-eight (48) miles southeast of Carlsbad, New Mexico. The legal location for the site is Section 34, Township 24 South and Range 31 East in Eddy County, New Mexico. More specifically, the Latitude and Longitude for the release are 32.1801170 North and -103.763554 West.

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services, the soil in this area is made up of Berino complex with 0 to 3 percent slopes. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is Quaternary in age and is comprised of eolian sands and piedmont deposits which include silty soils under lain with sandy clay loam and hard caliche. Drainage courses in this area are normally dry. According to the Texaco/Chevron Eddy County Water Trend Data Map (2005), the depth to groundwater is approximately 450-feet deep.

The ranking for this site is 0 based on the as following:

Depth to ground water >100'
Wellhead Protection Area >1000'
Distance to surface water body >1000'

Toll Free: 866.742.0742 www.talonipe.com

#### **Incident Description**

A gasket ruptured on the fire tube of the heater treater causing a release of 60 barrels oil. Vacuum trucks were immediately called to the location to pick up the standing oil and they recovered 50 barrels of oil. The heater treater was repaired. The area effected from this release was under the separators, heater treaters and pipelines, as shown on the attached site plan.

#### **Actions Taken**

On January 27, 2014 Talon mobilized personnel to begin the site assessment and soil sampling for the construction of a work plan. Grab soil samples were collected utilizing a hand auger to a depth of 3-feet deep below ground surface around the separators and heater treaters. Soil sample locations are illustrated on the attached site plan.

All soil samples were collected by Talon personnel wearing clean nitrile gloves. The soil samples were placed in laboratory provided sample containers, iced and transported to Cardinal Laboratories in Hobbs, New Mexico for analysis. The samples were tested for TPH (Total Petroleum Hydrocarbons) using EPA Method 8015M, and volatile organics (BTEX) using EPA Method 8021B. The chloride samples were analyzed per method SM4500Cl-B. The complete laboratory report is attached.

#### **Analytical Results**

Analytical results received from Cardinal Laboratories are summarized below:

January 21, 2014

Sample BG	<u>Depth</u> 0' 1'	BTEX <0.300 <0.300	<u>TPH</u> <10 <10	Chlorides (mg/kg) <16 <16
S-1	0'	101	3607	368
	1'	<0.300	29.2	160
	2'	<0.300	36.2	160
	3'	<0.300	<10	544
S-2	0'	308	12250	688
	1'	<0.300	<10	112
	2'	<0.300	<10	48
	3'	<0.300	<10	32
S-3	0' 1' 2' 3'	<0.300 <0.300 <0.300 <0.300	35.8 <10 <10 <10	3880 2160 688 176

For this site's ranking, New Mexico Oil Conservation District action level criterion for BTEX is 50 mg/kg, Benzene is 10 mg/kg and TPH is 5000 mg/kg.

#### **Summary and Conclusions**

- Ground water in the project vicinity is approximately 450-feet below land surface.
- Based on the depth to groundwater, it is unlikely that the impacts identified from this release will pose a threat to groundwater after proposed remediation activities are complete.

#### **Proposed Remedial Actions**

- The impacted gravel and caliche under the separators, heater treaters and the historical release will be treated with mircoblaze, a bioremediation agent.
- Confirmation samples will be collected after 90-days to verify effectiveness of treatment.
- A final closure report documenting all remedial actions and analytical results will be provided to the NMOCD Artesia Office and the BLM along with a Final C-141 Form.

Should you have any questions or if further information is required, please do not hesitate to contact our office at 575,746,8768.

Respectfully submitted,

TALON/LPE

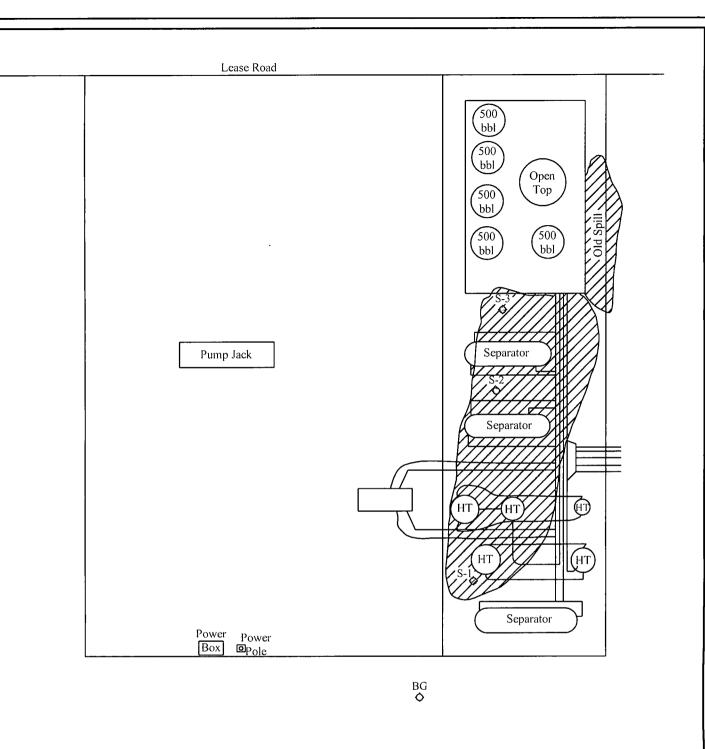
Kimberly M. Wilson

Project Manager

David J. Adkins

District Manager

#### SITE MAP





#### Legend

Sample Location

///// - New Spill Area

- Old Spill Area



Date: 02/04/2014

Scale: NTS

Drawn By: TJS

Cotton Draw 114
Devon Energy Corporation
Eddy County, New Mexico
Figure 1 - Site Plan

# APPENDIX I GROUNDWATER DATA INITIAL C-141



## 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										
	Sub-	Q			_	_				•	Depth Water
POD Number	Code basin County	<u>64 1</u>	<u>64</u>	Sec	Tws	Rng	X	Υ	Distance	Well	Water Column
C 02574	ED	1	1 2	02	25S	31E	618092	3559494* 🚱	1994		
C 02571	ED	4	1 2	02	258	31E	618292	3559294* 🚱	2275	860	
C 02572	ED	4 2	2 2	02	25S	31E	618695	3559294* 🕥	2546	852	
C 02573	ED	1 4	1 2	02	258	31E	618499	3559091* 🚱	2563		
C 02569	ED	4 4	1 2	02	25S	31E	618699	3558891* 🚱	2845	1016	
C 02568	ED	4 :	3 1	01	25S	31E	619103	3558892* 💽	3119	1025	
<u>C 02570</u>	ED	4 2	2 4	02	25S	31E	618704	3558489* 🕥	3166	895	
								Δ		\^/- +- ·	

Average Depth to Water:

Minimum Depth:

Maximum Depth:

Record Count: 7

UTMNAD83 Radius Search (in meters):

Easting (X): 616872

**Northing (Y):** 3561072

Radius: 5000

District I
1625 N French Dr Hobbs, NM 88240
District II
1301 W Grand Avenue, 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 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Form C-141 Revised March 17, 1999

30-015-37410

#### **Release Notification and Corrective Action**

nMLB//33	639798			OP	ERA'	TOR		⊠ It	nitial Re	port [		Final Report
Name of (		Devon E	nergy	6137		Contact□	Roger Herna	ndez				
Address 1	P. O. Box	x 250		( )	,	Telephone	No.□ 575-7	48-52	38			
Artesia, N	M 8821	1			ĺ							
Facility N	ame Cot	ton Draw	Unit #1	14		Facility T	ype□Oil Wel	11				
Surface O	wner			Mineral	Owne	er			Lease	No.□		
				LOCA	TIO	N OF REI	EASE		•			
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/V	Vest Line	County		
	34	24S	31E	330	North		1980	East		Eddy		
	·		1	NAT	IDE	OF RELI	F A STF			<u> </u>		
Type of Rele	ase Oil			INAI	UKE	<del></del>	Release 40 BO		Volume F	Recovered	30 BC	)
Source of Re		~~~				<del></del>	lour of Occurrence	e				y011-11-11
Separator	•					11-11-11	9 00 AM		9 00 AM			
Was Immedi	ate Notice (		Yes [	] No ☐ Not Re	quired		Whom? BLM (J e Bratcher – Arte		s – Carlsba	ad)		
By Whom?							lour□ BLM – 11/			OCD - 11/	11/11	11 50 AM
Was a Water	course Read		Yes ⊠	] No		If YES, Vo	lume Impacting t	the Wate	ercourse			
If a Waterco	urse was Im	pacted, Descr	ibe Fully	ŧ						·····	******	
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		and Cleanup A 60', called va		k to pickup fluid	:				· · .	,- <del>,-</del> -		
regulations a public health should their or the environed federal, state	Il operators for the envious re- operations in a nment. In a	are required to ave failed to	o report a acceptant adequately OCD accep	e is true and comp nd/or file certain r ce of a C-141 repo mivestigate and ro stance of a C-141	elease n ort'by the emediai	otifications a e NMOCD m e contaminati	knowledge and und perform correct arked as "Final Roun that pose a thing the operator of	inderstantive act leport" of eat to grant respons	nd that purs ions for rel loes not rel round water ibility for c	suant to NM eases which neve the ope to surface we ompliance v	1OCD n may e erator o eater, in with a	endanger . of liability iuman healtn
							OIL CON	<u>SERV</u>	<u>'ATION</u>	DIVISIO	<u>NC</u>	
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Printed Nam	e Adrienn	e Verkler				Approved by	Signed Byuped	BYIC /	OKNOW			
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District I
1625 N. French Dr., Hobbs, NM 88240
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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

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

			Rele	ease Notific	atior	and Co	rrective A	ction				
NMW	1333	02.983	35.			OPERAT	ΓOR			al Report		Final Report
	mpany De	von Energy	Red.	6137		Contact Tr						
		Artesia, NN					lo. 575.513.062	8				
Facility Nar	me Cotton	Draw Unit I	14			Facility Typ	e Oil Well					
Surface Ow	ner Federa	1		Mineral C	)wner				API No	. 3001537	410	
						OF REI	LEASE					
Unit Letter . <b>B</b>	Section 34	Township 24S	Range 31E	Feet from the 330	1	South Line	Feet from the 1980		Vest Line East	County Eddy		
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If a Watercoo	ırse was Im	pacted, Descr	ibe Fully.			·						
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I hereby certi	futher the	nformation a	von abovo	is to so and some	loto to th	o host of	knowledge and u		d shae a		OCD	-1 d
regulations a public health should their or or the enviro	II operators or the envir operations h nment. In a	are required to ronment. The ave failed to a	o report ar acceptance adequately OCD accep	nd/or file certain r se of a C-141 report investigate and r	elease no ort by the emediate	otifications ar e NMOCD ma e contamination	nd perform correct arked as "Final Re on that pose a three the operator of re	tive acti eport" de eat to gr	ons for rele oes not reli ound water	eases which ieve the ope , surface wa	may er rator of ater, hu	idanger Tliability man health
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Printed Name						Approved by	Environmental Sp	oeciaßie	ned By	Alike,	Ben	Colette.
Title: Field A						Approval NO	<del></del>		Expiration	Date:		
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Date: 11/19/				: 575.746.5587	Reme	diation per	OCD Rule & Guid			Attached		
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### APPENDIX II LABORATORY RESULTS



February 04, 2014

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: COTTON DRAW UNIT #114

Enclosed are the results of analyses for samples received by the laboratory on 01/29/14 10:11.

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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accred certif.html.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2

Haloacetic Acids (HAA-5)

Method EPA 524.2

Total Trihalomethanes (TTHM)

Method EPA 524.4

Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

Celey D. Keine

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210 Fax To: (575) 745-8905

Received:

01/29/2014

Sampling Date:

01/27/2014

Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number:

Project Location:

700794.092.01 B-34-24-31

Sample Received By:

Kathy Perez

#### Sample ID: BG 0' (H400279-01)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifie
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	< 0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 9	% 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	<10.0	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	85.0	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	84.6	% 63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager



TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210 (575) 745-8905 Fax To:

Received:

01/29/2014

Sampling Date:

01/27/2014

Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number:

700794.092.01

Project Location:

Sample Received By:

Kathy Perez

B-34-24-31

Sample ID: BG 1' (H400279-02)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2014	ND	2.28	114	2.00	1.96	
Toluene*	< 0.050	0.050	02/03/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	02/03/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	02/03/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	02/03/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	<10.0	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	91.3 9	65.2-14	0						
Surrogate: 1-Chlorooctadecane	101 %	63.6-15	4						

#### Cardinal Laboratories

\*=Accredited Analyte

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TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210

Fax To:

(575) 745-8905

Received:

01/29/2014

Sampling Date:

01/27/2014

Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number:

700794.092.01

Project Location:

B-34-24-31

Sample Received By:

Kathy Perez

#### Sample ID: S-1 0' (H400279-03)

BTEX 8021B	mg	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	1.98	1.00	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	26.9	1.00	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	12.8	1.00	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	59.2	3.00	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	101	6.00	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	143	% 89.4-12	6						
Chloride, SM4500Cl-B	mg	/kg	Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg	/kg	Analyze	d By: ms			<del></del>		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	907	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	2700	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	133	% 65.2-14	10						
Surrogate: 1-Chlorooctadecane									

#### 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 familiation, 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.



TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210

Fax To: (575) 745-8905

Received:

01/29/2014 02/04/2014

Reported: Project Name:

COTTON DRAW UNIT #114

Project Number:

700794.092.01

Project Location:

B-34-24-31

Sampling Date:

01/27/2014

Sampling Type:

Soil

Sampling Condition: Sample Received By: Cool & Intact

Kathy Perez

Sample ID: S-1 1' (H400279-04)

BTEX 8021B	mg/	'kg	Analyze	d By: MS		<u>.</u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	114 9	% 89.4-12	6	_					
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	29.2	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	87.7	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	91.8	% 63.6-15	4						

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Received:

01/29/2014

Sampling Date:

01/27/2014

Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number:

700794.092.01

Sample Received By:

Kathy Perez

Project Location:

B-34-24-31

Sample ID: S-1 2' (H400279-05)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	36.2	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	87.7	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	94.7	% 63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



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02/04/2014

Sampling Date:

01/27/2014

Reported:

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number: Project Location: 700794.092.01

Sample Received By:

Kathy Perez

B-34-24-31

Sample ID: S-1 3' (H400279-06)

BTEX 8021B	mg/	kg .	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BŞ	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/03/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	02/03/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	02/03/2014	ИD	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	02/03/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	02/03/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	109 %	6 89.4-12	16						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	<10.0	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	81.15	% 65.2-14	10						
Surrogate: 1-Chlorooctadecane	89.9	% 63.6-15	4						

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Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number:

700794.092.01

Sample Received By:

Kathy Perez

Project Location:

B-34-24-31

Sample ID: S-2 0' (H400279-07)

BTEX 8021B	mg,	/kg	Analyze	d By: MS					S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	3.34	2.00	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	67.3	2.00	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	36.7	2.00	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	201	6.00	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	308	12.0	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	153	% 89.4-12	6						
Chloride, SM4500Cl-B	mg,	/kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	688	16.0	02/03/2014	. ND	416	104	400	0.00	
TPH 8015M	mg,	/kg	Analyze	d By: ms					5-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	3510	10.0	01/30/2014	ND	200	99.9	200	2.61	
DRO >C10-C28	8740	10.0	01/30/2014	ND	199	99.4	200	2.43	
Surrogate: 1-Chlorooctane	163	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	201	% 63.6-15	4						

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Project Name:

COTTON DRAW UNIT #114

Project Number: Project Location:

700794.092.01 B-34-24-31 Sampling Date:

01/27/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Kathy Perez

Sample ID: S-2 1' (H400279-08)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	< 0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	115 9	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	218	109	200	10.7	
DRO >C10-C28	<10.0	10.0	01/30/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	80.6	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	87.9	% 63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



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Sampling Type:

Soil

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Sampling Condition:

Cool & Intact

Project Name: Project Number:

700794.092.01

Sample Received By:

Project Location:

B-34-24-31

Kathy Perez

#### Sample ID: S-2 2' (H400279-09)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	elenes* <0.150 0.150			ND	6.54	109	6.00	0.808	
Total BTEX <0.300		0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 9	% 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>48.0</b> 16.0		02/03/2014 ND		416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/30/2014	ND	218	109	200	10.7	
DRO >C10-C28	<10.0	10.0	01/30/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	79.5	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	89.4	% 63.6-15	4						

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02/04/2014

Sampling Type:

Soil

Project Name:

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Sampling Condition:

Cool & Intact

Project Number:

700794.092.01

Sample Received By:

Kathy Perez

Project Location:

B-34-24-31

Sample ID: S-2 3' (H400279-10)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	<0.300 0.300		ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	6 89.4-12	6						
Chloride, SM4500Cl-B	mg/kg		Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>32.0</b> 16.0		02/03/2014 ND		416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		01/30/2014	ND	218	109	200	10.7	
DRO >C10-C28	O >C10-C28 <10.0 10.0		01/30/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	2: 1-Chlorooctane 90.6 % 65.2-1		0						
Surrogate: 1-Chlorooctadecane	92.8	% 63.6-15	4						

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Sampling Date:

01/27/2014

Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number: Project Location:

700794.092.01

B-34-24-31

Sample Received By:

Kathy Perez

#### Sample ID: S-3 0' (H400279-11)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050		01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 9	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3880	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0 10.0		01/30/2014	ND	218	109	200	10.7	
DRO >C10-C28	35.8	10.0	01/30/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	78.6	% 65.2-14	0						
Surrogate: 1-Chlorooctadecane	86.5	% 63.6-15	4						

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Sampling Date:

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Reported:

02/04/2014

Sampling Type:

Soil

Project Name:

COTTON DRAW UNIT #114

Sampling Condition:

Cool & Intact

Project Number:

700794.092.01

Project Location:

B-34-24-31

Sample Received By:

Kathy Perez

Sample ID: S-3 1' (H400279-12)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050 0.050		01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	110 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2160	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/31/2014	ND	218	109	200	10.7	
DRO >C10-C28	<10.0	10.0	01/31/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	81.7	% 65.2-14	0			. =			
Surrogate: 1-Chlorooctadecane	88.8	% 63.6-15	4						

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Celey D. Keene, Lab Director/Quality Manager



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Reported: 02/04/2014

Project Name: COTTON DRAW UNIT #114

01/29/2014

Project Number: 700794.092.01

Project Location: B-34-24-31 Sampling Date:

01/27/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By:

Kathy Perez

Sample ID: S-3 2' (H400279-13)

Received:

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result.	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	<0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150	0.150	01/31/2014	ND	6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	111 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte ·	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>688</b> 16.0		02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/31/2014	ND	218	109	200	10.7	
DRO >C10-C28	<10.0	10.0	01/31/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	85.7	% 65.2-14	0			<del></del>			
Surrogate: 1-Chlorooctadecane	89.9	% 63.6-15	4						

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\*=Accredited Analyte

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TALON LPE DAVID ADKINS 408 W. TEXAS AVE. ARTESIA NM, 88210

Fax To:

(575) 745-8905

Received:

01/29/2014

Reported:

02/04/2014

Project Name:

COTTON DRAW UNIT #114

Project Number: Project Location:

700794.092.01 B-34-24-31 Sampling Date:

01/27/2014

Sampling Type:

Soil

Sampling Condition:

Cool & Intact

Sample Received By: Kat

Kathy Perez

#### Sample ID: S-3 3' (H400279-14)

BTEX 8021B	mg/	kg	Analyze	d By: MS					
Analyte	Result Reporting Limit		Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/31/2014	ND	2.28	114	2.00	1.96	
Toluene*	< 0.050	0.050	01/31/2014	ND	2.24	112	2.00	1.60	
Ethylbenzene*	<0.050	0.050	01/31/2014	ND	2.22	111	2.00	1.54	
Total Xylenes*	<0.150 0.150		01/31/2014 ND		6.54	109	6.00	0.808	
Total BTEX	<0.300	0.300	01/31/2014	ND					
Surrogate: 4-Bromofluorobenzene (PID	109 %	6 89.4-12	6						
Chloride, SM4500CI-B	mg/	kg	Analyze	d By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	02/03/2014	ND	416	104	400	0.00	
TPH 8015M	mg/	kg	Analyze	d By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	01/31/2014	ND	218	109	200	10.7	
DRO >C10-C28	RO >C10-C28 <10.0		01/31/2014	ND	225	112	200	14.2	
Surrogate: 1-Chlorooctane	82.4 9	65.2-14	0	-					
Surrogate: 1-Chlorooctadecane	94.6	63.6-15	4						

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#### **Notes and Definitions**

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

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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#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ANALYSIS REQUEST

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

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City: Artes	oia State: NN	1zip: 88216	Attn:									İ			
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Project Name: /	otton Draw Und	+ # 114	State: Zip:		4								ı		
Project Location	1: B-34-24-31		Phone #:		<b>A</b>										
Sampler Name:	Robbie DeRosie	eV.	Fax #:	,	) <i>(</i> /										
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P.O. #:



#### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

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<sup>†</sup> Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476