



June 1, 2015

Mr. Mike Bratcher  
New Mexico Oil Conservation Division  
811 S First Street  
Artesia, NM 88210

RE: Work Plan for Bioremediation and Excavation  
Salt Draw 11 Federal Com No. 1  
API No.: 30-015-23692  
Eddy County, New Mexico  
Sphere 3 Project No.: 047730.00

Dear Mr. Bratcher:

Sphere 3 Environmental, Inc. (Sphere 3) has prepared this work plan for bioremediation and excavation activities at the Salt Draw 11 Federal Com No. 1 location on behalf of Matador Production Company (Matador). A topographic map showing the location of the project is included in Attachment 1. The purpose of this work plan is to provide details of the bioremediation of total petroleum hydrocarbon (TPH) contaminated soil in and around the onsite tank battery and to describe the excavation and disposal of chloride-contaminated soils from a nearby legacy pit. Bioremediation of the TPH-contaminated soil to an approximate depth of four (4) feet and the removal and disposal of the chloride-contaminated soils from the upper two (2) feet of the soil profile will be carried out in accordance with the direction set forth by the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM).

## **Background**

### Spill Area

On July 31, 2013, a release of approximately 252 bbl. of crude oil was discovered at the Salt Draw 11 Federal Com No. 1 well site. The release was caused by the blowout of a plug on one of the onsite crude oil tanks. The released crude oil was contained within the earthen firewall around the tank. Approximately 71 bbl. of crude oil was recovered from within the firewall on July 31, 2013. Matador excavated approximately 420 cubic yards of contaminated soil in August 2013.

Sphere 3 conducted a Limited Subsurface Investigation in September 2013 in order to confirm the presence or absence of contaminated soils. Under the instruction of the NMOCD, Sphere 3 conducted an additional investigation in November 2014. Twenty-two geoprobe borings were drilled on the site ranging in depth from 8 feet below the ground surface to 28 feet below the ground surface. The soil from each 4-foot core sample was placed in plastic bags and screened using a

photoionization detector (PID) in order to obtain organic vapor readings. A total of 34 soil samples were collected. A diagram depicting each of the sample locations is included in Attachment 1. The soil samples were placed in laboratory-provided jars and stored in a cooler of ice. The samples were hand delivered to Cardinal Laboratories in Hobbs, New Mexico. The samples were then analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH). The analytical results are outlined below in Table 1, and a copy of the lab results are provided as Attachment 2.

**Table 1 – Sample Summary**

<b>Soil Boring ID</b>	<b>Depth</b>	<b>Date Collected</b>	<b>Benzene (mg/kg)</b>	<b>BTEX (mg/kg)</b>	<b>TPH (mg/kg)</b>	<b>Chlorides</b>
GB1	4-8'	September 4, 2013	0.191	11	<b>1,840</b>	--
GB3	20-24'	September 4, 2013	<0.050	1.78	<b>433</b>	--
GB4	4-8'	September 4, 2013	<0.050	1.32	<b>1,940</b>	--
GB5	12-16'	September 4, 2013	0.078	3.77	<b>1,600</b>	--
GB6	4-8'	September 4, 2013	<0.050	<0.300	<b>&lt;100</b>	--
GB7	12-16'	September 4, 2013	0.064	4.45	<b>6,140</b>	--
GB8	12-16'	September 4, 2013	<0.200	7.39	<b>6,660</b>	--
GB9	0-4'	September 4, 2013	<0.050	<0.300	<b>3,390</b>	--
GB10	12'-16'	November 18, 2014	<0.050	<0.300	<10.0	480
GB10	16'-20'	November 18, 2014	<0.050	<0.300	<10.0	480
GB11	8'-12'	November 18, 2014	<0.050	<0.300	<10.0	608
GB11	20'-22'	November 18, 2014	<0.050	<0.300	<10.0	672
GB12	8'-12'	November 18, 2014	<0.050	0.318	<b>484</b>	<16.0
GB12	20'-24'	November 18, 2014	<0.050	<0.300	<10.0	80.0
GB13	8'-12'	November 18, 2014	<0.050	<0.300	<b>305</b>	240
GB13	20'-22'	November 18, 2014	<0.050	<0.300	<b>116</b>	160
GB14	0'-4'	November 18, 2014	<0.050	<0.300	<10.0	<16.0
GB14	20'-21.5'	November 18, 2014	<0.050	<0.300	<10.0	208
GB15	0'-4'	November 18, 2014	<0.200	11.9	<b>1483</b>	48.0
GB15	16'-20'	November 18, 2014	<0.050	7.78	96.4	32.0
GB16	4'-8'	November 18, 2014	<0.200	12.8	<b>1977</b>	<16.0
GB16	20'-23'	November 18, 2014	<0.050	5.80	<b>263</b>	144
GB17	8'-12'	November 18, 2014	<0.050	<0.300	<10.0	80.0
GB17	20'-22.5'	November 18, 2014	<0.050	<0.300	<10.0	160
GB18	12'-16'	November 18, 2014	<0.050	<0.300	<10.0	928
GB18	16'-20'	November 18, 2014	<0.050	<0.300	<10.0	224
GB19	12'-16'	November 18, 2014	<0.050	<0.300	<10.0	368
GB19	20'-22'	November 18, 2014	0.147	0.305	<10.0	400
GB20	12'-16'	November 18, 2014	<0.050	<0.300	36.6	16.0
GB20	16'-20'	November 18, 2014	<0.050	<0.300	<10.0	64.0
GB21	0'-4'	November 19, 2014	<0.050	0.611	<b>2382.7</b>	<16.0

GB21	20'-24'	November 19, 2014	<0.050	<0.300	<10.0	192
GB22	0'-4'	November 19, 2014	<0.050	<0.300	<10.0	304
GB22	16'-20'	November 19, 2014	<0.050	<0.300	<10.0	112
NMOCD Guidelines for Remediation of Leaks, Spills, and Releases Limits						
			10	50	100	

mg/kg – milligrams per kilograms

Based on the findings of the Limited Subsurface Investigations performed on the facility in September 2013 and November 2014, concentrations of TPH were determined to be elevated above the cleanup standards set forth in the *NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993)*. This guideline determines remediation levels by assessing the site for the severity of contamination and potential environmental and public health threats using a risk-based ranking system. This system uses three factors to establish remediation standards: 1.) Depth to Groundwater, 2.) Wellhead Protection Area, and 3.) Distance to Nearest Surface Water Body. The Salt Draw 11 Federal Com No. 1 well site is not located within a wellhead protection area, nor is it located in an area that would potentially pose a threat to a surface water body. According to the New Mexico Office of the State Engineer's water well database, the depth to groundwater in the area of this facility is approximately 40 feet below the ground surface. Based on this information, the most stringent cleanup levels of 10 ppm for benzene, 50 ppm for BTEX, and 100 ppm for TPH were applied to the remediation of this site.

The results of the sampling activities at the Salt Draw 11 Federal Com No. 1 were used to develop a proposed plan of remediation. Development of this remediation plan was largely based on discussions in a meeting held on February 26, 2015 by and between Matador, Sphere 3, and representatives of the NMOCD and subsequent conversations between Sphere 3, the NMOCD, and the BLM regarding agency requirements and expectations.

### **Proposed Work Plan**

Allied International (Allied) will conduct the bioremediation of TPH-contaminated soil to an approximate depth of four (4) feet in and around the tank battery and the excavation and disposal of chloride-contaminated soils from the first two (2) feet of the legacy pit at the Salt Draw 11 Federal Com No. 1. The approximate boundaries of the spill area were determined by Sphere 3 during the subsurface investigations conducted in September 2013 and November 2014. Approximately 2,380 cubic yards of soils will be removed from the spill area. Approximately 5,110 cubic yards of soil will be removed from the legacy pit area.

### **Legacy Pit Excavation Area**

The approximate boundaries of the legacy pit area were determined by the BLM during a site visit in November 2014. The legacy pit is located north of the well site and was estimated to be approximately 280 feet by 300 feet. Based on the direction received from the BLM, Allied will excavate the first two (2) feet of soil from the legacy pit. This soil will be trucked to the Lea Land Landfill (Lea Land) for disposal, and each truck will be completed emptied then return from Lea Land with clean caliche that will be utilized as fill. The caliche will be stockpiled onsite while the excavation is being completed. The excavated area will then be lined with a plastic barrier in preparation for the bioremediation of TPH-contaminated soils from the spill area. The excavated

TPH-contaminated soils from the spill area will be placed in the legacy pit excavation area for bioremediation purposes. After bioremediation is complete, samples will be collected from the treated soils for submittal to NMOCD and BLM. If the levels of TPH have been sufficiently lowered to concentrations approved by NMOCD and BLM, the soils will be spread over the lined pit area. The stockpiled caliche will then be used to return the pit area to grade. Based on recommendations from the BLM, the legacy pit area will be seeded with BLM Seed Mix No. 1.

#### Spill Area Remediation Area

Based on the requirements of the NMOCD and BLM, Allied will excavate the spill area to an approximate depth of four (4) feet. The TPH-contaminated soil will be stockpiled on the lined pit area prior to returning the excavated pit area to original grade. Sphere 3 will collect grab samples one foot below the excavated level to be analyzed for TPH (EPA Method 8015). Analytical data from the samples will be submitted to the NMOCD and BLM for closure approval. If closure approval is granted, the excavated spill area will be backfilled with clean caliche, the tank battery will be reconstructed, and production will resume.

During the BLM inspection in November 2014, African rue (*Peganum harmala*) was found to be growing on the site. The BLM considers this plant a threat to livestock health. Prior to closure, Allied will remove all African rue located on the site as required by BLM. The African rue will be bagged with its root severed and placed in the open excavation area for burial.

Allied will treat the stockpiled, TPH-contaminated soils with microbial solution until the TPH levels are below NMOCD cleanup levels. Sphere 3 will collect samples from the treated soil piles for analysis of TPH (EPA Method 8015). The analytical results will be submitted to the NMOCD for approval of successful bioremediation. After NMOCD and BLM approval, the treated soil and remaining clean caliche will be used to return the pit area to grade prior to seeding.

Sphere 3 will maintain close coordination with the NMOCD and the BLM throughout the field work to ensure that all parties are kept informed during the remediation and excavation process.

If you have any questions, or if we can be of additional service, please call us at 903-297-4673.

Sincerely,  
Sphere 3 Environmental, Inc.



Crissy Forrest  
Environmental Scientist

#### **Attachments:**

*Attachment 1 – Maps*

*Attachment 2 – Laboratory Analysis Report*

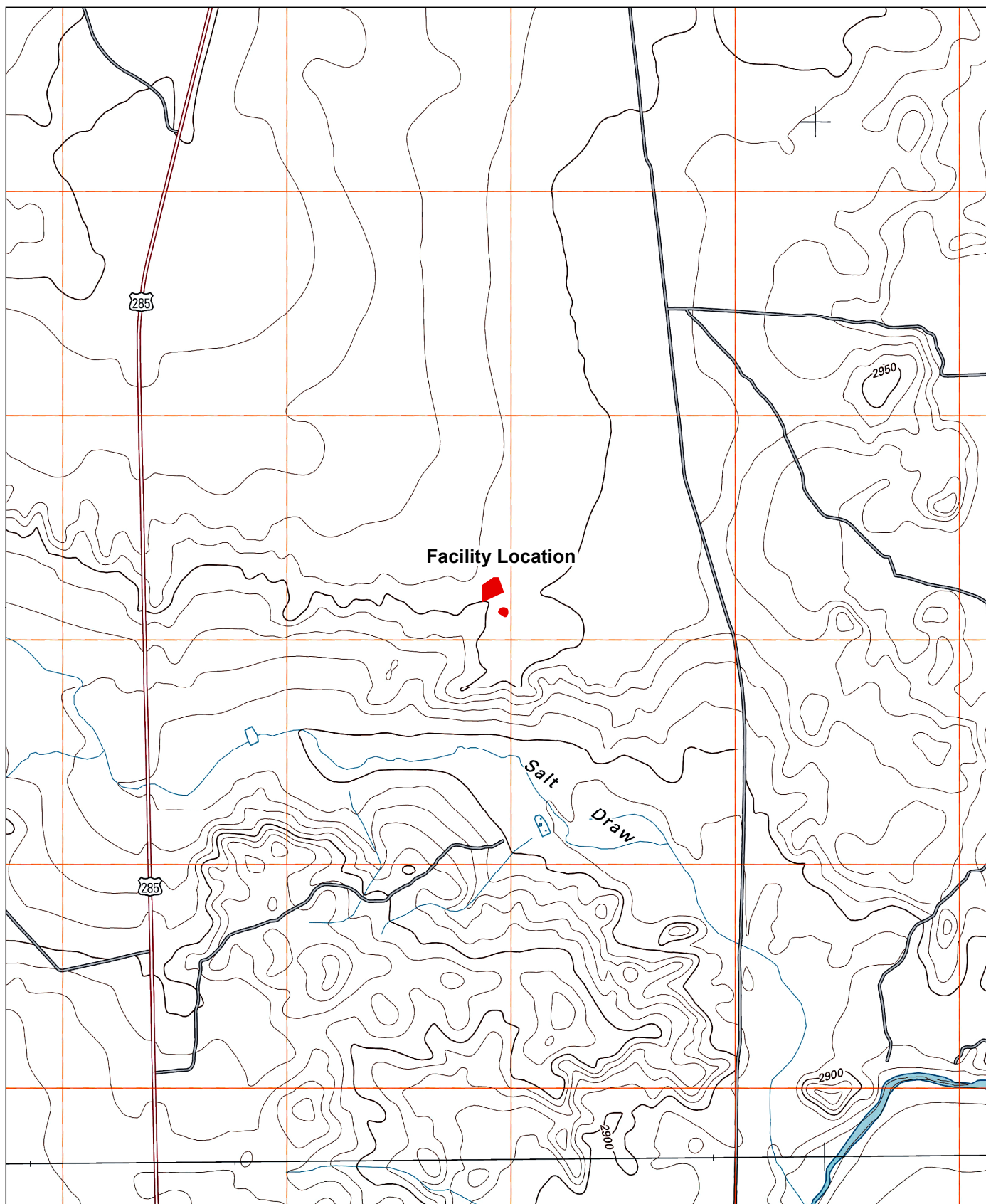


Figure 1  
Topographic Features of the Salt Draw 11 Fed Com No. 1 Investigation  
in Eddy County, NM



0 1,000 2,000 4,000 6,000 8,000 Feet

Matador Resources Company  
Project Number: 047730.00

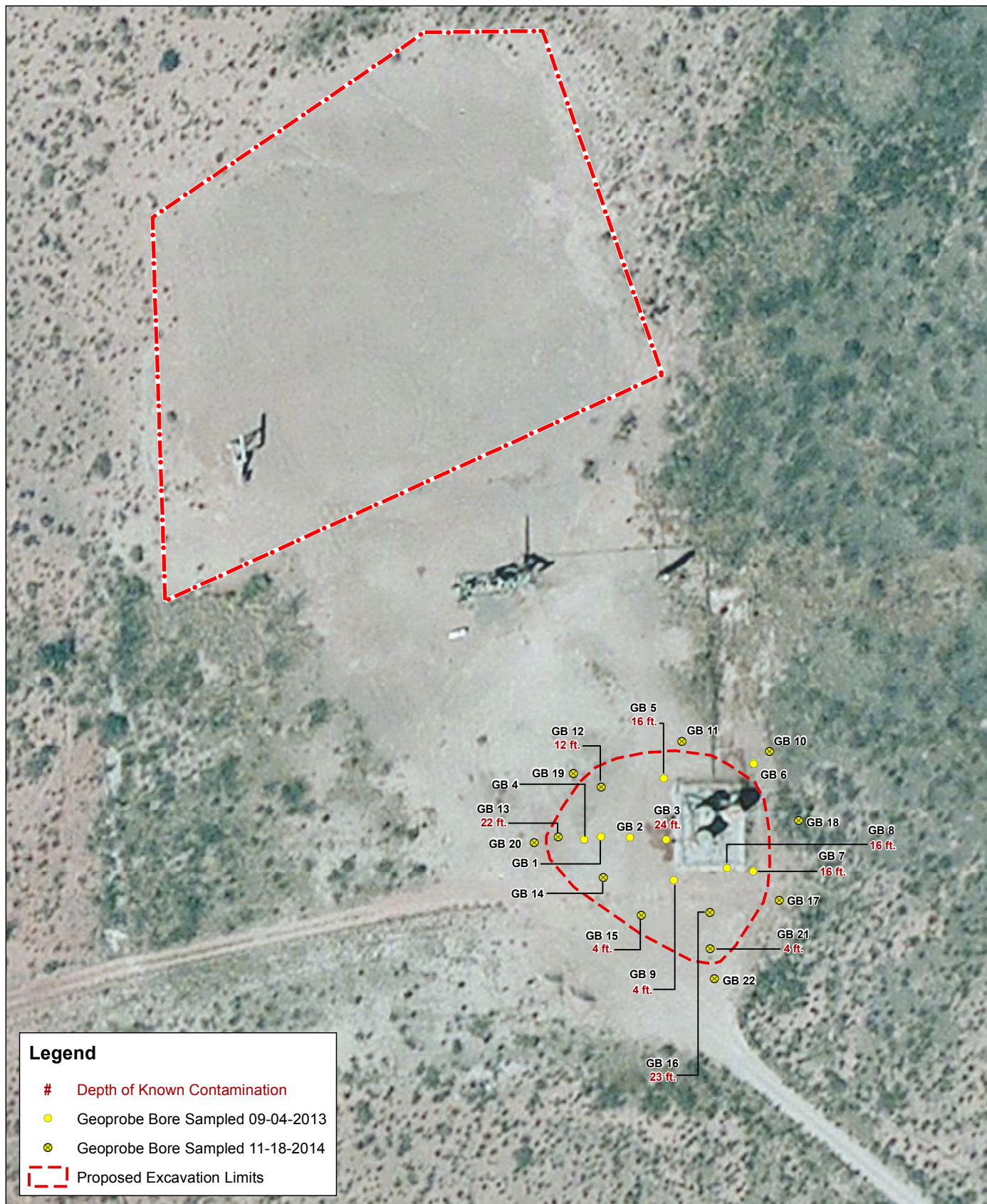
Date: 06/01/2015

Base Map: USGS 7.5 Minute Topographic  
Quadrangle: Malaga, NM (Published, 2013)



1501 Bill Owens Parkway  
Longview, TX 75604  
Phone: (903) 297-4673  
Fax: (903) 297-4675





**AERIAL PHOTOGRAPH**  
Salt Draw 11 Fed Com No. 1 Investigation  
in Eddy County, NM



1501 Bill Owens Parkway  
Longview, TX 75604  
Phone: (903) 297-4673  
Fax: (903) 297-4675

Matador Resources Company  
Project Number: 047730.00

Date: 11/18/2014

Base Map: Bing Aerial Imagery  
OnTerra WMS Service



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

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September 05, 2013

CRISSY FORREST

SPHERE 3 ENVIRONMENTAL

1501 BILL OWENS PARKWAY

LONGVIEW, TX 75604

RE: SALT DRAW NO. 1 SPILL

Enclosed are the results of analyses for samples received by the laboratory on 09/04/13 16:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

Received:	09/04/2013	Sampling Date:	09/04/2013
Reported:	09/05/2013	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 1 4-8 (H302141-01)**

BTEX 8021B		mg/kg		Analyzed By: DW				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.191</b>	0.050	09/05/2013	ND	2.09	105	2.00	2.81	
<b>Toluene*</b>	<b>0.619</b>	0.050	09/05/2013	ND	2.26	113	2.00	2.06	
<b>Ethylbenzene*</b>	<b>3.02</b>	0.050	09/05/2013	ND	2.38	119	2.00	1.62	
<b>Total Xylenes*</b>	<b>7.21</b>	0.150	09/05/2013	ND	7.19	120	6.00	0.796	
<b>Total BTEX</b>	<b>11.0</b>	0.300	09/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 144 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>TPH 418.1</b>	<b>1840</b>	100	09/05/2013	ND	5140	103	5000	4.63	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

Received:	09/04/2013	Sampling Date:	09/04/2013
Reported:	09/05/2013	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 5 12-16 (H302141-02)**

BTEX 8021B		mg/kg		Analyzed By: DW				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.078</b>	0.050	09/05/2013	ND	2.09	105	2.00	2.81	
<b>Toluene*</b>	<b>0.464</b>	0.050	09/05/2013	ND	2.26	113	2.00	2.06	
<b>Ethylbenzene*</b>	<b>0.531</b>	0.050	09/05/2013	ND	2.38	119	2.00	1.62	
<b>Total Xylenes*</b>	<b>2.70</b>	0.150	09/05/2013	ND	7.19	120	6.00	0.796	
<b>Total BTEX</b>	<b>3.77</b>	0.300	09/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 159 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>TPH 418.1</b>	<b>1600</b>	100	09/05/2013	ND	5140	103	5000	4.63	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	09/04/2013	Sampling Date:	09/04/2013
Reported:	09/05/2013	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 8 12-16 (H302141-03)**

BTEX 8021B		mg/kg		Analyzed By: DW				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	09/05/2013	ND	2.09	105	2.00	2.81	
<b>Toluene*</b>	<b>0.492</b>	0.200	09/05/2013	ND	2.26	113	2.00	2.06	
<b>Ethylbenzene*</b>	<b>2.37</b>	0.200	09/05/2013	ND	2.38	119	2.00	1.62	
<b>Total Xylenes*</b>	<b>4.40</b>	0.600	09/05/2013	ND	7.19	120	6.00	0.796	
<b>Total BTEX</b>	<b>7.39</b>	1.20	09/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 148 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>TPH 418.1</b>	<b>6660</b>	100	09/05/2013	ND	5140	103	5000	4.63	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675Received: 09/04/2013  
Reported: 09/05/2013  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NMSampling Date: 09/04/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson**Sample ID: GB 7 12-16 (H302141-04)**

BTEX 8021B		mg/kg		Analyzed By: DW				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.064</b>	0.050	09/05/2013	ND	2.09	105	2.00	2.81	
<b>Toluene*</b>	<b>0.394</b>	0.050	09/05/2013	ND	2.26	113	2.00	2.06	
<b>Ethylbenzene*</b>	<b>1.58</b>	0.050	09/05/2013	ND	2.38	119	2.00	1.62	
<b>Total Xylenes*</b>	<b>2.42</b>	0.150	09/05/2013	ND	7.19	120	6.00	0.796	
<b>Total BTEX</b>	<b>4.45</b>	0.300	09/05/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 163 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>TPH 418.1</b>	<b>6140</b>	100	09/05/2013	ND	5140	103	5000	4.63	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### 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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Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



24 Hour Rush  
results

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

email to: Kivland@Sphere3Environmental.com  
Forester@Sphere3Environmental.com

Company Name: Sphere 3 Environmental

Project Manager: Cissy Forrest

Address: 1501 Bill Owens Parkway

City: Lovington State: TX Zip: 75604

Phone #: 903.297.4673 Fax #: 903.297.4675

Project #: 0217730 Project Owner:

Project Name: Salt Draw 1001 Spill

Project Location: Salt Draw 1001 Eddy Co., NM

Sampler Name: Cissy Forrest

FOR LAB USE ONLY

Lab I.D. Sample I.D.

H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

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TIME

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TIME

DATE

TIME

H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

DATE

TIME

DATE

TIME

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H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

TIME

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H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

DATE

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H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

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H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

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H309141

1 681 4-8

2 435 12-10

3 438 12-10

4 437 12-10

(G)RAB OR (C)





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

---

September 10, 2013

CRISSY FORREST

SPHERE 3 ENVIRONMENTAL

1501 BILL OWENS PARKWAY

LONGVIEW, TX 75604

RE: SALT DRAW NO. 1 SPILL

Enclosed are the results of analyses for samples received by the laboratory on 09/04/13 16:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	09/04/2013	Sampling Date:	09/04/2013
Reported:	09/10/2013	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB3 20-24 (H302142-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/09/2013	ND	2.11	106	2.00	7.67	
<b>Toluene*</b>	<b>0.370</b>	0.050	09/09/2013	ND	2.28	114	2.00	6.92	
<b>Ethylbenzene*</b>	<b>0.216</b>	0.050	09/09/2013	ND	2.39	120	2.00	6.93	
<b>Total Xylenes*</b>	<b>1.19</b>	0.150	09/09/2013	ND	7.29	122	6.00	6.30	
<b>Total BTEX</b>	<b>1.78</b>	0.300	09/09/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>TPH 418.1</b>	<b>433</b>	100	09/05/2013	ND	5140	103	5000	4.63	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675Received: 09/04/2013  
Reported: 09/10/2013  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NMSampling Date: 09/04/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson**Sample ID: GB4 4-8 (H302142-02)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/09/2013	ND	2.11	106	2.00	7.67	
Toluene*	<b>0.196</b>	0.050	09/09/2013	ND	2.28	114	2.00	6.92	
Ethylbenzene*	<b>0.451</b>	0.050	09/09/2013	ND	2.39	120	2.00	6.93	
Total Xylenes*	<b>0.677</b>	0.150	09/09/2013	ND	7.29	122	6.00	6.30	
Total BTEX	<b>1.32</b>	0.300	09/09/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 141 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TPH 418.1	<b>1940</b>	100	09/05/2013	ND	5140	103	5000	4.63	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 09/04/2013  
 Reported: 09/10/2013  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 09/04/2013  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB6 4-8 (H302142-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/09/2013	ND	2.11	106	2.00	7.67	
Toluene*	<0.050	0.050	09/09/2013	ND	2.28	114	2.00	6.92	
Ethylbenzene*	<0.050	0.050	09/09/2013	ND	2.39	120	2.00	6.93	
Total Xylenes*	<0.150	0.150	09/09/2013	ND	7.29	122	6.00	6.30	
Total BTEX	<0.300	0.300	09/09/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
TPH 418.1	<100	100	09/05/2013	ND	5140	103	5000	4.63		

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675Received: 09/04/2013  
Reported: 09/10/2013  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NMSampling Date: 09/04/2013  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson**Sample ID: GB9 0-4 (H302142-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/09/2013	ND	2.11	106	2.00	7.67	
Toluene*	<0.050	0.050	09/09/2013	ND	2.28	114	2.00	6.92	
Ethylbenzene*	0.059	0.050	09/09/2013	ND	2.39	120	2.00	6.93	
Total Xylenes*	<0.150	0.150	09/09/2013	ND	7.29	122	6.00	6.30	
Total BTEX	<0.300	0.300	09/09/2013	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 89.4-126

TPH 418.1		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
TPH 418.1	3390	500	09/05/2013	ND	5140	103	5000	4.63	

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Celey D. Keene, Lab Director/Quality Manager



### 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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Celey D. Keene, Lab Director/Quality Manager



Routine team assessment time.

email results to:

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

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

forever@sphere3environmental.com

[illegible]



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

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November 26, 2014

CRISSY FORREST

SPHERE 3 ENVIRONMENTAL

1501 BILL OWENS PARKWAY

LONGVIEW, TX 75604

RE: SALT DRAW NO. 1 SPILL

Enclosed are the results of analyses for samples received by the laboratory on 11/19/14 11:15.

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,

Hope S. Moreno For Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NM

Sampling Date: 11/18/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: GB 10 12' - 16' (H403559-01)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	11/20/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.28	
DRO >C10-C28	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.21	

Surrogate: 1-Chlorooctane 113 % 47.2-157

Surrogate: 1-Chlorooctadecane 131 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 11/19/2014  
 Reported: 11/26/2014  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/18/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB 10 16' - 20' (H403559-02)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	11/20/2014	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.28	
DRO >C10-C28	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.21	


Surrogate: 1-Chlorooctane 120 % 47.2-157

Surrogate: 1-Chlorooctadecane 133 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 11 8' - 12' (H403559-03)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	608	16.0	11/20/2014	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.28	
DRO >C10-C28	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.21	


Surrogate: 1-Chlorooctane 118 % 47.2-157

Surrogate: 1-Chlorooctadecane 130 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 11 20' - 22' (H403559-04)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	672	16.0	11/20/2014	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.28	
DRO >C10-C28	<10.0	10.0	11/20/2014	ND	182	90.8	200	3.21	


Surrogate: 1-Chlorooctane 118 % 47.2-157

Surrogate: 1-Chlorooctadecane 130 % 52.1-176

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\*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NM

Sampling Date: 11/18/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: GB 12 8' - 12' (H403559-05)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25	
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06	
Ethylbenzene*	<b>0.140</b>	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62	
<b>Total Xylenes*</b>	<b>0.178</b>	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90	
<b>Total BTEX</b>	<b>0.318</b>	0.300	11/24/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 61-154

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	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>30.0</b>	10.0	11/21/2014	ND	182	90.8	200	3.28	
<b>DRO &gt;C10-C28</b>	<b>454</b>	10.0	11/21/2014	ND	182	90.8	200	3.21	

Surrogate: 1-Chlorooctane 120 % 47.2-157

Surrogate: 1-Chlorooctadecane 148 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 11/19/2014  
 Reported: 11/26/2014  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/18/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB 12 20' - 24' (H403559-06)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.1 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	182	90.8	200	3.28	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	182	90.8	200	3.21	

Surrogate: 1-Chlorooctane 116 % 47.2-157

Surrogate: 1-Chlorooctadecane 133 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 13 8' - 12' (H403559-07)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	305	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 149 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 13 20' - 22' (H403559-08)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	116	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 123 % 47.2-157

Surrogate: 1-Chlorooctadecane 138 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 11/19/2014  
 Reported: 11/26/2014  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/18/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB 14 0' - 4' (H403559-09)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTEX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 135 % 52.1-176

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Hope S. Moreno For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 14 20' - 21.5' (H403559-10)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90		
Total BTX	<0.300	0.300	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 61-154

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	208	16.0	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 136 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 15 0' - 4' (H403559-11)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.200	0.200	11/24/2014	ND	1.85	92.5	2.00	7.25		
<b>Toluene*</b>	<b>0.465</b>	0.200	11/24/2014	ND	1.78	89.0	2.00	6.06		
<b>Ethylbenzene*</b>	<b>1.38</b>	0.200	11/24/2014	ND	1.74	87.1	2.00	6.62		
<b>Total Xylenes*</b>	<b>10.1</b>	0.600	11/24/2014	ND	5.27	87.8	6.00	6.90		
<b>Total BTX</b>	<b>11.9</b>	1.20	11/24/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>48.0</b>	16.0	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10</b>	<b>223</b>	10.0	11/21/2014	ND	202	101	200	2.50		
<b>DRO &gt;C10-C28</b>	<b>1260</b>	10.0	11/21/2014	ND	207	104	200	5.04		

Surrogate: 1-Chlorooctane 142 % 47.2-157

Surrogate: 1-Chlorooctadecane 143 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 15 16' - 20' (H403559-12)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25	
<b>Toluene*</b>	<b>0.399</b>	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06	
<b>Ethylbenzene*</b>	<b>0.965</b>	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62	
<b>Total Xylenes*</b>	<b>6.42</b>	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90	
<b>Total BTEX</b>	<b>7.78</b>	0.300	11/24/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10</b>	<b>22.3</b>	10.0	11/21/2014	ND	202	101	200	2.50	
<b>DRO &gt;C10-C28</b>	<b>74.1</b>	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 131 % 47.2-157

Surrogate: 1-Chlorooctadecane 142 % 52.1-176

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**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 11/19/2014  
 Reported: 11/26/2014  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/18/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB 16 4' - 8' (H403559-13)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	11/24/2014	ND	1.85	92.5	2.00	7.25	
Toluene*	0.446	0.200	11/24/2014	ND	1.78	89.0	2.00	6.06	
Ethylbenzene*	1.10	0.200	11/24/2014	ND	1.74	87.1	2.00	6.62	
Total Xylenes*	11.2	0.600	11/24/2014	ND	5.27	87.8	6.00	6.90	
Total BTX	12.8	1.20	11/24/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	247	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	1730	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 152 % 47.2-157

Surrogate: 1-Chlorooctadecane 156 % 52.1-176

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\*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 16 20' - 23' (H403559-14)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25	
Toluene*	0.283	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06	
Ethylbenzene*	0.664	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62	
Total Xylenes*	4.85	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90	
Total BTEX	5.80	0.300	11/24/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	53.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	210	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 130 % 47.2-157

Surrogate: 1-Chlorooctadecane 143 % 52.1-176

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CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NMSampling Date: 11/18/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson**Sample ID: GB 17 8' - 12' (H403559-15)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/24/2014	ND	1.85	92.5	2.00	7.25	
Toluene*	<0.050	0.050	11/24/2014	ND	1.78	89.0	2.00	6.06	
Ethylbenzene*	<0.050	0.050	11/24/2014	ND	1.74	87.1	2.00	6.62	
Total Xylenes*	<0.150	0.150	11/24/2014	ND	5.27	87.8	6.00	6.90	
Total BTEX	<0.300	0.300	11/24/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 61-154

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	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 127 % 47.2-157

Surrogate: 1-Chlorooctadecane 140 % 52.1-176

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CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 17 20' - 22.5' (H403559-16)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/25/2014	ND	1.85	92.5	2.00	7.25		
Toluene*	<0.050	0.050	11/25/2014	ND	1.78	89.0	2.00	6.06		
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	6.62		
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.27	87.8	6.00	6.90		
Total BTX	<0.300	0.300	11/25/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 124 % 47.2-157

Surrogate: 1-Chlorooctadecane 135 % 52.1-176

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 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 18 12' - 16' (H403559-17)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02		
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01		
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94		
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36		
Total BTEX	<0.300	0.300	11/25/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	928	16.0	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 127 % 47.2-157

Surrogate: 1-Chlorooctadecane 137 % 52.1-176

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CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 18 16' - 20' (H403559-18)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02		
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01		
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94		
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36		
Total BTX	<0.300	0.300	11/25/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50		
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04		

Surrogate: 1-Chlorooctane 126 % 47.2-157

Surrogate: 1-Chlorooctadecane 136 % 52.1-176

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CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/18/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 19 12' - 16' (H403559-19)**

BTX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02		
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01		
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94		
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36		
Total BTX	<0.300	0.300	11/25/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50		
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04		


Surrogate: 1-Chlorooctane 126 % 47.2-157

Surrogate: 1-Chlorooctadecane 137 % 52.1-176

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CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NM

Sampling Date: 11/18/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: GB 19 20' - 22' (H403559-20)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.147	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02	
Toluene*	0.132	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01	
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94	
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36	
Total BTEX	0.305	0.300	11/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 126 % 47.2-157

Surrogate: 1-Chlorooctadecane 136 % 52.1-176

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CRISSY FORREST  
1501 BILL OWENS PARKWAY  
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Fax To: (903) 297-4675

Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NM

Sampling Date: 11/18/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: GB 20 12' - 16' (H403559-21)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02	
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01	
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94	
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36	
Total BTEX	<0.300	0.300	11/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.6 % 61-154

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	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	36.6	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 142 % 52.1-176

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 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 11/19/2014  
 Reported: 11/26/2014  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/18/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB 20 16' - 20' (H403559-22)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02		
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01		
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94		
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36		
Total BTEX	<0.300	0.300	11/25/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.1 % 61-154

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	11/20/2014	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 127 % 47.2-157

Surrogate: 1-Chlorooctadecane 137 % 52.1-176

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\*=Accredited Analyte

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

 Received: 11/19/2014  
 Reported: 11/26/2014  
 Project Name: SALT DRAW NO. 1 SPILL  
 Project Number: 047730  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 11/19/2014  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: GB 21 0' - 4' (H403559-23)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02	
Toluene*	0.108	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01	
Ethylbenzene*	0.159	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94	
Total Xylenes*	0.344	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36	
Total BTEX	0.611	0.300	11/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	72.7	50.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	2310	50.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 130 % 47.2-157

Surrogate: 1-Chlorooctadecane 178 % 52.1-176

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Hope S. Moreno For Caley D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 SPHERE 3 ENVIRONMENTAL  
 CRISSY FORREST  
 1501 BILL OWENS PARKWAY  
 LONGVIEW TX, 75604  
 Fax To: (903) 297-4675

Received:	11/19/2014	Sampling Date:	11/19/2014
Reported:	11/26/2014	Sampling Type:	Soil
Project Name:	SALT DRAW NO. 1 SPILL	Sampling Condition:	Cool & Intact
Project Number:	047730	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: GB 21 20' - 24' (H403559-24)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02		
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01		
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94		
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36		
Total BTEX	<0.300	0.300	11/25/2014	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 61-154

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	11/20/2014	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 125 % 47.2-157

Surrogate: 1-Chlorooctadecane 134 % 52.1-176

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**Analytical Results For:**

SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675

Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NM

Sampling Date: 11/19/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: GB 22 0' - 4' (H403559-25)**

BTX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02	
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01	
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94	
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36	
Total BTEX	<0.300	0.300	11/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 61-154

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	11/20/2014	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	

Surrogate: 1-Chlorooctane 127 % 47.2-157

Surrogate: 1-Chlorooctadecane 136 % 52.1-176

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**Analytical Results For:**SPHERE 3 ENVIRONMENTAL  
CRISSY FORREST  
1501 BILL OWENS PARKWAY  
LONGVIEW TX, 75604  
Fax To: (903) 297-4675Received: 11/19/2014  
Reported: 11/26/2014  
Project Name: SALT DRAW NO. 1 SPILL  
Project Number: 047730  
Project Location: EDDY COUNTY, NMSampling Date: 11/19/2014  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson**Sample ID: GB 22 16' - 20' (H403559-26)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/25/2014	ND	1.82	90.8	2.00	3.02	
Toluene*	<0.050	0.050	11/25/2014	ND	1.74	87.1	2.00	5.01	
Ethylbenzene*	<0.050	0.050	11/25/2014	ND	1.72	85.9	2.00	3.94	
Total Xylenes*	<0.150	0.150	11/25/2014	ND	5.23	87.2	6.00	4.36	
Total BTEx	<0.300	0.300	11/25/2014	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 61-154

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	112	16.0	11/20/2014	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/21/2014	ND	202	101	200	2.50	
DRO >C10-C28	<10.0	10.0	11/21/2014	ND	207	104	200	5.04	


Surrogate: 1-Chlorooctane 127 % 47.2-157

Surrogate: 1-Chlorooctadecane 137 % 52.1-176

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### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
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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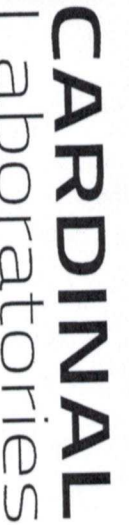
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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Forest@sphere3environmental.com

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Forrest @ Sphere 3 Environmental .com

Company Name: Sphere 3 Environmental		P.O. #: 047730		BILL TO																																							
Project Manager: Crissy Forrest		Company: Sphere 3		ANALYSIS REQUEST																																							
Address: 1501 Bill Owens Parkway		Attn: Jacque Starks																																									
City: Longview State: TX Zip: 75604		Address: 1501 Bill Owens Parkway																																									
Phone #: 903-297-41673 Fax #: 903-297-41675		City: Longview																																									
Project #: 047730 Project Owner: Matador		State: TX Zip: 75604																																									
Project Name: Salt Draw DO.1		Phone #: 903-297-41673																																									
Project Location: Eddy County, NM		Fax #: 903-297-41675																																									
Sampler Name: Crissy Forrest																																											
FOR LAB USE ONLY																																											
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME															
H403559		11-18-14 1235		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
12-15 01-41		11-18-14 1310		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
13-15 16-20		11-18-14 1325		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
14-16 4'-8'		11-18-14 1400		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
15-16 20'-23'		11-18-14 1415		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
16-17 8'-12'		11-18-14 1505		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
17-17 20'-22.5'		11-18-14 1530		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
18-18 12'-16'		11-18-14 1550		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
19-18 16'-20'		11-18-14 1600		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
20-19 12'-16'		11-18-14 1625		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
21-19 20'-22'		11-18-14 1645		X		X		X		X		X		X		X		X		X		X		X		X		X		X													
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Relinquished By: [Signature]		Date: 11-19-14		Received By: [Signature]		Date: 11-19-14		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15													
Relinquished By: [Signature]		Date: 11-19-14		Received By: [Signature]		Date: 11-19-14		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15		Time: 11:15													
Delivered By: (Circle One)		Sample Condition		Cool		Intact		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]		Checked By: [Signature]													
Sampler - UPS - Bus - Other:		3.42		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No		Yes		No													

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#54





## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Forest @ sphere 3 environmental - very

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