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## **Soil Assessment and Remediation Work Plan**

Anemone ANE Federal #2  
API # 30-015-27982 \* 2RP-703  
Talon Project No. 700438.194.01

### **Prepared For:**

EOG Resources  
105 4<sup>th</sup> Street  
Artesia, New Mexico 88210

### **Prepared By:**

TALON/LPE  
408 W. Texas Avenue  
Artesia, New Mexico 88210

**March 21, 2018**

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

Subject: **Soil Assessment and Remediation Work Plan**  
Anemone ANE Federal #2  
API # 30-015-27982 \* 2RP-703

Dear Mr. Bratcher,

EOG Resources has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

### **Site Information**

The Anemone ANE Federal #2 is located approximately forty (40) miles southwest of Artesia, New Mexico. The legal location for this release is Unit Letter D, Section 9, Township 22 South and Range 24 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.40957 North and -104.50867 West. A site plan is presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services (NRCS) the soil in this area is made up of both Ector Stony Loam, 0 to 9 percent slopes and Ector Extremely Rocky Loam, 9 to 25 percent slopes. The local surface and shallow geology, Paleozoic Age sedimentary deposits, is comprised of the Artesia Group, Guadalupian and Moenkopi formations, which are made up of residuum-weathered limestone underlain by very cobbly loam and hard caliches. Drainage courses in this area are normally dry.

### **Ground Water and Site Ranking**

The New Mexico State Engineer web site indicates the nearest ground water is approximately 585' below ground surface (BGS). Per NMOCD approved site ranking from 11/06/2012.

Therefore the ranking for this site is a **0** based on the following:

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

Based upon the site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene and 5,000 mg/kg for TPH. The recommended guidelines for total chlorides is 600 mg/kg.

## Incident Description and Initial Remedial Actions

On October 9, 2009 the water leg broke off the back of tank resulting in a release of 166 barrels of mixed fluids inside the berm. A vacuum truck recovered 160 barrels of fluid. A site plan is presented in [Appendix I](#) which illustrates the impacted area.

On August 24, 2017 Talon mobilized personnel to begin the site assessment and soil sampling activities for vertical delineation purposes. Grab soil samples were collected utilizing a hand auger to depths where refusal was encountered at 0.5-feet deep.

Talon again mobilized personnel to continue the site assessment and soil sampling activities for the construction of a work plan. Grab soil samples were collected from around the location utilizing a excavator and again refusal was encountered.

Talon personnel returned to the location to obtain additional samples at greater depths utilizing an air rotary drill rig on February 13, 2018, however, borings could not be advanced due to infrastructure at sample location S-5 (tanks, steel flowlines, etc.) and there was not access to sample location S-6 because of the steep drop off from the lease road to this portion of the location.

See [Appendix III](#) for complete report of laboratory results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH EXT (mg/kg)
S-1	0.0	<0.300	<16.0	<10.0	<10.0	<10.0
	0.5	<0.300	<16.0	<10.0	<10.0	<10.0
	1.0	<0.300	64.0	<10.0	<10.0	<10.0
	2.0	<0.300	32.0	<10.0	<10.0	<10.0
	Refusal	<0.300	32.0	<10.0	<10.0	<10.0
S-2	0.0	<0.300	<16.0	<10.0	<10.0	<10.0
	0.5	<0.300	48.0	<10.0	<10.0	<10.0
	1.0	<0.300	48.0	<10.0	<10.0	<10.0
	2.0	<0.300	96.0	<10.0	<10.0	<10.0
	3.0	<0.300	32.0	<10.0	<10.0	10.8
	Refusal	<0.300	<16.0	<10.0	<10.0	<10.0
S-3 Refusal	0.0	<0.300	160.0	<10.0	<10.0	<10.0
	0.5	<0.300	<16.0	<10.0	<10.0	<10.0
S-4	1.0	<0.300	<16.0	<10.0	<10.0	<10.0
	2.0	<0.300	16.0	<10.0	<10.0	<10.0
	Refusal	<0.300	96.0	<10.0	<10.0	<10.0
S-5	0.0	<0.300	80.0	<10.0	2600.0	861.0
	Refusal	<0.300	64.0	<10.0	745.0	222.0
S-6	0.0	<0.300	1140.0	<50.0	26500	8370.0
	Refusal	182.0	1630.0	1000.0	2090.0	299.0

### Proposed Remedial Actions

- The impacted area surrounding sample location S-6 will be hand excavated to a depth of 1-foot deep or the maximum extent possible where refusal is encountered at top of rock.
- A confirmation sample will be collected at S-6 to document conditions at maximum excavation depths.
- All of the excavated material will be hauled to Lea Land LLC, a NMOCD approved disposal facility.
- The excavated areas will be backfilled to grade using new caliche. Once the backfilling activities are complete the work area will be contoured to match the surrounding location.
- A final closure report documenting all remedial actions will be provided to the NMOCD Artesia Office along with a Final C-141 Form.

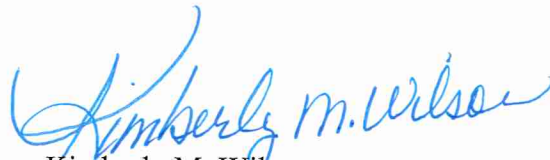
Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE



Jacob Laird  
Environmental Scientist



Kimberly M. Wilson  
Project Manager

Attachments:

Appendix I    Site Plan  
Appendix II   Initial C-141  
Appendix III   Laboratory Results




## **APPENDIX I**

### **SITE MAP**



# Anemone Ane Federal #2

EOG Resources , Eddy County , NM

**Legend**  
 Impacted area





## **APPENDIX II**

### **INITIAL C-141**

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

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

*nkmw 1109454725*

#### OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Yates Petroleum Corporation	OGRID Number 25575	Contact Robert Asher
Address 104 S. 4 <sup>th</sup> Street		Telephone No. 575-748-1471
Facility Name Anemone ANE Federal #2	API Number 30-015-27982	Facility Type Battery

Surface Owner Federal	Mineral Owner Federal	Lease No. NM-72814
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#### LOCATION OF RELEASE

Unit Letter D	Section 9	Township 22S	Range 24E	Feet from the 1090	North/South Line North	Feet from the 840	East/West Line West	County Eddy
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Latitude 32.40957 Longitude 104.50867

#### NATURE OF RELEASE

Type of Release <u>Crude Oil and Produced Water</u>	Volume of Release 11 B/O & 155 B/PW	Volume Recovered 10 B/O & 150 B/PW
Source of Release Water Tank	Date and Hour of Occurrence 10/9/2009 - AM	Date and Hour of Discovery 10/9/2009 - AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bratcher, NMOC District II	
By Whom? Jerry Fanning/Yates Petroleum Corporation	Date and Hour 10/9/2009 - AM (voicemail & e-mail)	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

*13L oil SPW*

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

Describe Cause of Problem and Remedial Action Taken.\*

Support brackets on the water leg broke causing overflow line on back of tank to fall over. Oil and produced water contained inside berm. Called vacuum truck.

Describe Area Affected and Cleanup Action Taken.\*

An approximate area of 210' X 60'. Incoming production diverted to other tanks on location, vacuumed up remaining oil and water, repairs being made. Will conduct vertical & horizontal delineation to determine extent of contamination (samples will be sent to an NMOC approved laboratory). Sample results will determine next actions (closure request or a work plan will be submitted). **Depth to Ground Water: 50-99', Wellhead Protection Area: No, Distance to Surface Water Body: >1000', SITE RANKING IS 10.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOC rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOC marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOC acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Robert Asher</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Robert Asher	Approved by District Supervisor: <i>Mike Bratcher</i>	
Title: Environmental Regulatory Agent	Approval Date: <i>4/4/11</i>	Expiration Date:
E-mail Address: boba@ypcnm.com	Conditions of Approval: <input type="checkbox"/> Attached <input type="checkbox"/>	
Date: Wednesday, October 21, 2009 Phone: 575-748-4217	REMEDATION per OCD Rules and Guidelines. <b>SUBMIT REMEDIATION PROPOSAL BY:</b>	

\* Attach Additional Sheets If Necessary

5/4/11

*2 RP-703*



**APPENDIX III**  
**LABORATORY RESULTS**

December 27, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ANEMONE #2

Enclosed are the results of analyses for samples received by the laboratory on 12/15/17 16:14.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. 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:**

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

 Received: 12/15/2017  
 Reported: 12/27/2017  
 Project Name: ANEMONE #2  
 Project Number: 700438.194.01  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/15/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-1 1' (H703495-01)**

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	12/23/2017	ND	1.79	89.3	2.00	0.496		
Toluene*	<0.050	0.050	12/23/2017	ND	1.83	91.4	2.00	1.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	1.89	94.6	2.00	0.339		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	5.85	97.6	6.00	1.05		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 93.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03	
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58	
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND					

Surrogate: 1-Chlorooctane 80.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.7 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-1 2' (H703495-02)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93	QM-07	
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 94.0 % 72-148

Chloride, SM4500Cl-B			mg/kg							
			Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03		
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58		
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND						

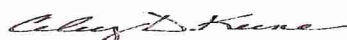
Surrogate: 1-Chlorooctane 81.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.8 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-1 3' R (H703495-03)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEx	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 92.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03	
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58	
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND					

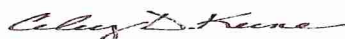
Surrogate: 1-Chlorooctane 79.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.9 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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Fax To: (575) 745-8905

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-2 1' (H703495-04)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEx	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 94.8 % 72-148

Chloride, SM4500Cl-B			mg/kg							
			Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03		
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58		
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND						

Surrogate: 1-Chlorooctane 75.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.8 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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 Fax To: (575) 745-8905

 Received: 12/15/2017  
 Reported: 12/27/2017  
 Project Name: ANEMONE #2  
 Project Number: 700438.194.01  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/15/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-2 2' (H703495-05)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEx	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 94.0 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03		
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58		
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND						

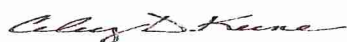
Surrogate: 1-Chlorooctane 79.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 80.8 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-2 3' (H703495-06)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 93.6 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03	
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58	
EXT DRO >C28-C36	10.8	10.0	12/22/2017	ND					

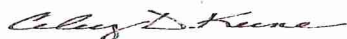
Surrogate: 1-Chlorooctane 86.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.8 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

 Received: 12/15/2017  
 Reported: 12/27/2017  
 Project Name: ANEMONE #2  
 Project Number: 700438.194.01  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/15/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-2 5' R (H703495-07)**

BTEX 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 93.9 % 72-148

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	12/21/2017	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	12/22/2017	ND	193	96.7	200	1.03		
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	184	92.1	200	4.58		
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND						

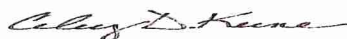
Surrogate: 1-Chlorooctane 84.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-3 0' (H703495-08)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93	
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05	
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49	
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28	
Total BTX	<0.300	0.300	12/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 92.8 % 72-148

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/21/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	<10.0	10.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	12/24/2017	ND					

Surrogate: 1-Chlorooctane 96.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.1 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

 Received: 12/15/2017  
 Reported: 12/27/2017  
 Project Name: ANEMONE #2  
 Project Number: 700438.194.01  
 Project Location: EDDY COUNTY, NM

 Sampling Date: 12/15/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Jodi Henson

**Sample ID: S-4 1' (H703495-09)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 92.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/21/2017	ND	416	104	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	<10.0	10.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	12/24/2017	ND					

Surrogate: 1-Chlorooctane 89.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-4 2' (H703495-10)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.4 % 72-148

Chloride, SM4500Cl-B			mg/kg							Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	16.0	16.0	12/21/2017	ND	416	104	400	3.92			

TPH 8015M		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	12/24/2017	ND	218	109	200	1.85		
DRO >C10-C28*	<10.0	10.0	12/24/2017	ND	205	102	200	5.50		
EXT DRO >C28-C36	<10.0	10.0	12/24/2017	ND						

Surrogate: 1-Chlorooctane 90.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 88.7 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-4 3' R (H703495-11)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 94.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	12/21/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	<10.0	10.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	<10.0	10.0	12/24/2017	ND					

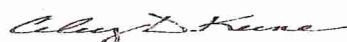
Surrogate: 1-Chlorooctane 87.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.8 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-5 0' (H703495-12)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.0 % 72-148

Chloride, SM4500Cl-B			mg/kg							Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
Chloride	80.0	16.0	12/21/2017	ND	432	108	400	3.77			

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	2600	10.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	861	10.0	12/24/2017	ND					

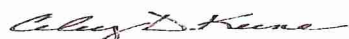
Surrogate: 1-Chlorooctane 86.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 140 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-5 0.5' R (H703495-13)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93	
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05	
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49	
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28	
Total BTEX	<0.300	0.300	12/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 92.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	12/21/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	745	10.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	222	10.0	12/24/2017	ND					

Surrogate: 1-Chlorooctane 99.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 114 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-6 0' (H703495-14)**

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	12/23/2017	ND	3.82	95.5	4.00	2.93		
Toluene*	<0.050	0.050	12/23/2017	ND	3.77	94.3	4.00	4.05		
Ethylbenzene*	<0.050	0.050	12/23/2017	ND	3.76	94.1	4.00	3.49		
Total Xylenes*	<0.150	0.150	12/23/2017	ND	11.4	94.7	12.0	3.28		
Total BTEX	<0.300	0.300	12/23/2017	ND						

Surrogate: 4-Bromofluorobenzene (PII) 93.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1140	16.0	12/21/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	26500	50.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	8370	50.0	12/24/2017	ND					

Surrogate: 1-Chlorooctane 82.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 981 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 12/15/2017  
Reported: 12/27/2017  
Project Name: ANEMONE #2  
Project Number: 700438.194.01  
Project Location: EDDY COUNTY, NM

Sampling Date: 12/15/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Jodi Henson

**Sample ID: S-6 0.5' R (H703495-15)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	12/27/2017	ND	3.82	95.5	4.00	2.93	
Toluene*	30.2	0.500	12/27/2017	ND	3.77	94.3	4.00	4.05	
Ethylbenzene*	14.9	0.500	12/27/2017	ND	3.76	94.1	4.00	3.49	
Total Xylenes*	137	1.50	12/27/2017	ND	11.4	94.7	12.0	3.28	
Total BTX	182	3.00	12/27/2017	ND					

Surrogate: 4-Bromofluorobenzene (PI) 110 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1630	16.0	12/21/2017	ND	432	108	400	3.77	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	1000	10.0	12/24/2017	ND	218	109	200	1.85	
DRO >C10-C28*	2090	10.0	12/24/2017	ND	205	102	200	5.50	
EXT DRO >C28-C36	299	10.0	12/24/2017	ND					

Surrogate: 1-Chlorooctane 139 % 28.3-164

Surrogate: 1-Chlorooctadecane 113 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

### 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.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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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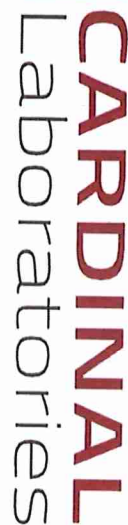
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Celey D. Keene, Lab Director/Quality Manager





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

Company Name: Talon LPE		<b>BILL TO</b>		ANALYSIS REQUEST													
Project Manager: D Adkins		P.O. #:															
Address: 4008 W. Texas Ave		Company: Talon															
City: Corsica		Attn:															
State: 414 Zip: 88210																	
Phone #: 575-746-8768		Address:															
Fax #: 575-746-8705																	
Project #: 7004138.194.01		City:															
Project Owner: EOG																	
Project Name: Ogemore #4		State:															
Zip:																	
Project Location: Eddy County		Phone #:															
Fax #:																	
Sampler Name: J. Leland																	
FOR LAB USE ONLY		MATRIX		PRESERV		SAMPLING											

[illegible]

**Reimquisitioned By:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Received By:** \_\_\_\_\_

Relinquished By: <i>[Signature]</i>		Date: <i>12.15.17</i>	Received By: <i>[Signature]</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>[Signature]</i>		Time: <i>1614</i>	Received By: <i>[Signature]</i>		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:		Date:	Received By:		REMARKS:	
Time:						
Delivered By: (Circle One)	Sample Condition	CHECKED BY:				
Sampler - UPS - Bus - Other:	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	(Initials)				
	Yes <input type="checkbox"/> No <input type="checkbox"/>					
	Yes <input type="checkbox"/> No <input type="checkbox"/>					
	Yes <input type="checkbox"/> No <input type="checkbox"/>					

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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