

**APPROVED**

*By Olivia Yu at 3:27 pm, Nov 30, 2017*

NMOCD will consider delineation complete for 1RP-4880. See email documentation for proposed remediation conditions.

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**Work Plan, Revegetation and Noxious Weed Management Plan:**

North Vacuum Abo North Unit (NVANU) #73  
API # 30-025-32721

**Prepared For:**

Lime Rock Resources II-A, L.P.

**Prepared By:**

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

**September 13, 2017**

Ms. Olivia Yu  
NMOCD District I  
1625 N. French Dr.  
Hobbs, NM 88240

Subject: **Soil Assessment and Remediation Work Plan**  
Lime Rock Resources II-A, L.P.  
North Vacuum Abo North Unit (NVANU) #73  
API # 30-025-32721

Dear Ms. Yu,

Lime Rock Resources (Lime Rock) 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 NVANU #73 Battery is located approximately fifteen (15) miles west of Lovington, New Mexico. The legal location for this release is Unit Letter G, Section 1, Township 17 South and Range 34 East in Lea County, New Mexico. More specifically the latitude and longitude for the release are 32.8661079 North and -103.512001 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 Service, the soil in this area is made up of Kimbrough-Lea land complex. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is comprised of calcareous-loamy alluvium and calcareous-loamy eolian sands which includes silty soils underlain by sedimentary rock and hard caliche. 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 data to be in S10-T17S-R34E. The ground water in Section **10** is reported to be at depth of 92' below ground surface (BGS). See [Appendix II](#) for the referenced groundwater data.

Therefore the ranking for this site is a **10** based on the following:

Depth to ground water	50'–100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **10**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 1,000 mg/kg for TPH and 600 mg/kg for total chlorides



## Incident Description and Initial Remedial Actions

On March 15, 2016 Talon personnel met with Amber Groves from the New Mexico State Land Office (NMSLO) and Eddie Elliott with Lime Rock Resources at the NVANU #73 to discuss the concerns of the State Land Office as to why there were areas void of vegetation.

On August 16, 2017, a site assessment and soil sampling activities for the construction of a work plan was performed. During our site assessment no obvious noxious or undesirable weeds such as African rue, locoweed, etc. were noted.

An air rotary drill rig was utilized to obtain vertical delineation within the barren area. Boreholes were advanced inside of the barren areas at sample locations B-1 through B-4. Horizontal delineation samples were also taken on the periphery of the barren areas at sample locations S-1 through S-9. The results of the sampling events at this location are summarized in the data tables below. A site plan is presented in [Appendix I](#) which illustrates the work area and references the sample locations.

## Laboratory Results

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

August 25, 2017

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO C6-C10	TPH (mg/kg) DRO >C10-C28	TPH (mg/kg) EXT DRO >C28-C36
<b>B-1</b>	0'	<0.300	1880	<10	<10	<10
	1'	<0.300	3360	<10	<10	<10
	2'	<0.300	2240	<10	<10	<10
	3'	--	1330	--	--	--
	4'	--	368	--	--	--
	5'	--	1070	--	--	--
	10'	--	1150	--	--	--
	15'	--	240	--	--	--
	20'	--	256	--	--	--
<b>B-2</b>	0'	<0.300	1280	<10	<10	<10
	1'	<0.300	6400	<10	<10	<10
	2'	<0.300	3720	<10	<10	<10
	3'	--	3280	--	--	--
	4'	--	3280	--	--	--
	5'	--	2680	--	--	--
	10'	--	2760	--	--	--
	15'	--	1260	--	--	--
	20'	--	224	--	--	--

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO C6-C10	TPH (mg/kg) DRO >C10-C28	TPH (mg/kg) EXT DRO >C28-C36
<b>B-3</b>	0'	<0.300	2320	<10	<10	<10
	1'	<0.300	1390	<10	<10	<10
	2'	<0.300	3520	<10	<10	<10
	3'	---	1880	---	---	---
	4'	---	1300	---	---	---
	5'	---	3040	---	---	---
	10'	---	2880	---	---	---
	15'	---	2200	---	---	---
	20'	---	1200	---	---	---
	25'	---	800	---	---	---
	30'	---	336	---	---	---
	35'	---	16	---	---	---
<b>B-4</b>	0'	<0.300	80	<10	<10	<10
	1'	<0.300	1150	<10	<10	<10
	2'	<0.300	704	<10	<10	<10
	3'	--	560	--	--	--
	4'	--	400	--	--	--
	5'	---	400	---	---	---
	10'	---	1520	---	---	---
	15'	---	528	---	---	---
	20'	---	176	---	---	---

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO C6-C10	TPH (mg/kg) DRO >C10-C28	TPH (mg/kg) EXT DRO >C28-C36
<b>S-1</b>	0'	<0.300	<16	<10	<10	<10
<b>S-2</b>	0'	<0.300	<16	<10	<10	<10
	0.5'	<0.300	<16	<10	<10	<10
<b>S-3</b>	0'	<0.300	<16	<10	<10	<10
<b>S-4</b>	0'	<0.300	<16	<10	<10	<10
<b>S-5</b>	0'	<0.300	<16	<10	<10	<10
<b>S-6</b>	0'	<0.300	16	<10	<10	<10
<b>S-7</b>	0'	<0.300	<16	<10	<10	<10
<b>S-8</b>	0'	<0.300	<16	<10	<10	<10
<b>S-9</b>	0'	<0.300	<16	<10	<10	<10



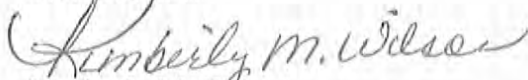
**Proposed Remedial actions**

- The barren area in the vicinity of borehole B-1 will be excavated to a depth of 3-feet deep and the area around borehole B-4 will be excavated to a depth of 2-feet deep.
- The barren soil around borehole B-2 and B-3 will be excavated to a depth of 4-feet and a 20 mil liner will be installed within the excavated areas.
- Please note that the barren area is vertically and horizontally delineated. Field titration screening for chlorides will be used to guide the excavation activities and determine excavation boundaries.
- All of the excavated material will be hauled to Lea Land LLC, a NMOCD approved disposal facility.
- The backfilled area will be contoured to match the surrounding terrain and left in a “rough” condition to approximate natural surface deviations, control erosion, and promote revegetation.
- An erosion control berm will be constructed up-gradient of the backfilled area to prevent storm water washout.
- Immediately following preparation of the site, a Culti-Pack Seed Drill will be utilized to plant 50/50 mix of BLM #3 & #4 seed mixture for shallow/rocky environments following manufacture recommended application rates. The site will be monitored by Lime Rock personnel to insure proper revegetation is achieved. Should revegetation not take place then further amendments will be applied.
- The NMSLO policy states the goal is to obtain native plant cover and diversity levels that are equal to or exceeding natural potential levels. The root zone at this location was determined to be 8-inches deep.
- A final closure report documenting all remedial actions, analytical results, a final C-141 and seeding labels will be provided to the NMOCD District I Hobbs Office and NMSLO along with the Revegetation Forms.

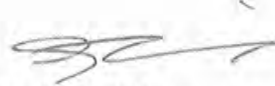
Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE



Kimberly M. Wilson  
Project Manager



David J. Adkins  
District Manager

Attachments:

Appendix I    Site Plan  
Appendix II   Groundwater Data  
Appendix III   Laboratory Results

**APPENDIX I**

**SITE MAP**





Google Earth

feet  
meters



100

500



Google Earth



**APPENDIX II**  
**GROUNDWATER DATA**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the  
POD suffix indicates the  
POD has been replaced  
& no longer serves a  
water right file.)

(R=POD has  
been replaced,  
O=orphaned,  
C=the file is  
closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub- Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 03241	L	LE		2	2	10	17S	34E		636425	3636145*	584	122	92	30
L 06134	L	LE		2	4	03	17S	34E		636411	3636949*	710	175	95	80
L 03011	L	LE				02	17S	34E		637425	3637158*	865	121	80	41

Average Depth to Water: 89 feet

Minimum Depth: 80 feet

Maximum Depth: 95 feet

Record Count: 3

UTM NAD83 Radius Search (in meters):

Easting (X): 636921

Northing (Y): 3636454

Radius: 1000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.



**APPENDIX III**

**LABORATORY RESULTS**

August 25, 2017

KIMBERLY WILSON

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: NVANU #73

Enclosed are the results of analyses for samples received by the laboratory on 08/18/17 16:08.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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  
KIMBERLY WILSON  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-1 0' (H702214-01)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 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	1880	16.0	08/22/2017	ND	448	112	400	0.00	

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	08/22/2017	ND	177	88.5	200	2.45	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	176	87.8	200	4.19	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

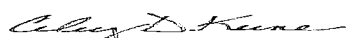
Surrogate: 1-Chlorooctane 85.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.4 % 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  
 KIMBERLY WILSON  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

 Received: 08/18/2017  
 Reported: 08/25/2017  
 Project Name: NVANU #73  
 Project Number: 701307.086.01  
 Project Location: LEA COUNTY, NM

 Sampling Date: 08/16/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B-1 1' (H702214-02)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	3360	16.0	08/22/2017	ND	448	112	400	0.00	

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	08/22/2017	ND	177	88.5	200	2.45	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	176	87.8	200	4.19	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

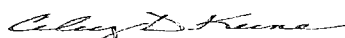
Surrogate: 1-Chlorooctane 71.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 77.9 % 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  
KIMBERLY WILSON  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-1 2' (H702214-03)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 104 % 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	2240	16.0	08/22/2017	ND	448	112	400	0.00	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

Surrogate: 1-Chlorooctane 71.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.4 % 34.7-157

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\*=Accredited Analyte

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Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-1 3' (H702214-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1330	16.0	08/22/2017	ND	448	112	400	0.00	

**Sample ID: B-1 4' (H702214-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	368	16.0	08/22/2017	ND	448	112	400	0.00	

**Sample ID: B-1 5' (H702214-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1070	16.0	08/22/2017	ND	448	112	400	0.00	

**Sample ID: B-1 10' (H702214-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1150	16.0	08/22/2017	ND	448	112	400	0.00	

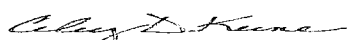
**Sample ID: B-1 15' (H702214-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	240	16.0	08/22/2017	ND	448	112	400	0.00	

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\*=Accredited Analyte

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Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-1 20' (H702214-09)**

Chloride, SM4500Cl-B

mg/kg

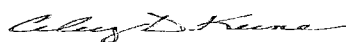
Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	256	16.0	08/22/2017	ND	448	112	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-2 0' (H702214-10)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 105 % 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	1280	16.0	08/22/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

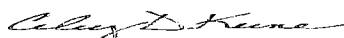
Surrogate: 1-Chlorooctane 85.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.5 % 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  
 KIMBERLY WILSON  
 408 W. TEXAS AVE.  
 ARTESIA NM, 88210  
 Fax To: (575) 745-8905

 Received: 08/18/2017  
 Reported: 08/25/2017  
 Project Name: NVANU #73  
 Project Number: 701307.086.01  
 Project Location: LEA COUNTY, NM

 Sampling Date: 08/16/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B-2 1' (H702214-11)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	6400	16.0	08/22/2017	ND	432	108	400	3.64	QM-07

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

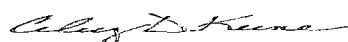
Surrogate: 1-Chlorooctane 83.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.9 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-2 2' (H702214-12)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	3720	16.0	08/22/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

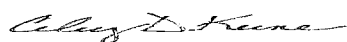
Surrogate: 1-Chlorooctane 81.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.6 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

 Received: 08/18/2017  
 Reported: 08/25/2017  
 Project Name: NVANU #73  
 Project Number: 701307.086.01  
 Project Location: LEA COUNTY, NM

 Sampling Date: 08/16/2017  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B-2 3' (H702214-13)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	08/22/2017	ND	432	108	400	3.64	

**Sample ID: B-2 4' (H702214-14)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	08/22/2017	ND	432	108	400	3.64	

**Sample ID: B-2 5' (H702214-15)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2680	16.0	08/22/2017	ND	432	108	400	3.64	

**Sample ID: B-2 10' (H702214-16)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2760	16.0	08/23/2017	ND	432	108	400	3.64	

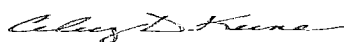
**Sample ID: B-2 15' (H702214-17)**

Chloride, SM4500Cl-B			mg/kg		Analyzed By: AC				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1260	16.0	08/23/2017	ND	432	108	400	3.64	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-2 20' (H702214-18)**

Chloride, SM4500Cl-B

mg/kg

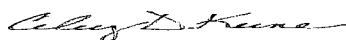
Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	08/23/2017	ND	432	108	400	3.64	

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-3 0' (H702214-19)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 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	2320	16.0	08/23/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

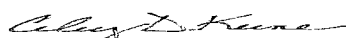
Surrogate: 1-Chlorooctane 77.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.4 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-3 1' (H702214-20)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 72-148

Chloride, SM4500CI-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1390	16.0	08/23/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

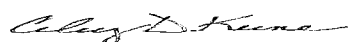
Surrogate: 1-Chlorooctane 99.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 99.3 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-3 2' (H702214-21)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 103 % 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	3520	16.0	08/23/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

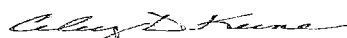
Surrogate: 1-Chlorooctane 72.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.5 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-3 3' (H702214-22)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1880	16.0	08/23/2017	ND	432	108	400	3.64	

**Sample ID: B-3 4' (H702214-23)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1300	16.0	08/23/2017	ND	432	108	400	3.64	

**Sample ID: B-3 5' (H702214-24)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3040	16.0	08/23/2017	ND	432	108	400	3.64	

**Sample ID: B-3 10' (H702214-25)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2880	16.0	08/23/2017	ND	432	108	400	3.64	

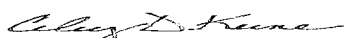
**Sample ID: B-3 15' (H702214-26)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2200	16.0	08/23/2017	ND	432	108	400	3.64	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-3 20' (H702214-27)**

Chloride, SM4500Cl-B

mg/kg

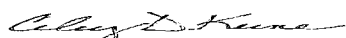
Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1200	16.0	08/23/2017	ND	432	108	400	3.64	

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-4 0' (H702214-28)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 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	08/23/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

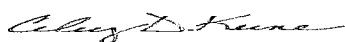
Surrogate: 1-Chlorooctane 85.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.0 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-4 1' (H702214-29)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 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	1150	16.0	08/23/2017	ND	432	108	400	3.64	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

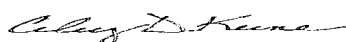
Surrogate: 1-Chlorooctane 85.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.9 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-4 2' (H702214-30)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	704	16.0	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

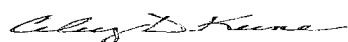
Surrogate: 1-Chlorooctane 94.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.5 % 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  
KIMBERLY WILSON  
408 W. TEXAS AVE.  
ARTESIA NM, 88210  
Fax To: (575) 745-8905

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-4 3' (H702214-31)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	560	16.0	08/23/2017	ND	416	104	400	7.41	

**Sample ID: B-4 4' (H702214-32)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	08/23/2017	ND	416	104	400	7.41	

**Sample ID: B-4 5' (H702214-33)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	08/23/2017	ND	416	104	400	7.41	

**Sample ID: B-4 10' (H702214-34)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1520	16.0	08/23/2017	ND	416	104	400	7.41	

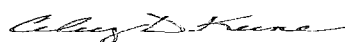
**Sample ID: B-4 15' (H702214-35)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	528	16.0	08/23/2017	ND	416	104	400	7.41	

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: B-4 20' (H702214-36)**

Chloride, SM4500Cl-B

mg/kg

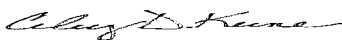
Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	08/23/2017	ND	416	104	400	7.41	

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

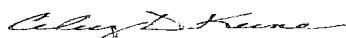
S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte 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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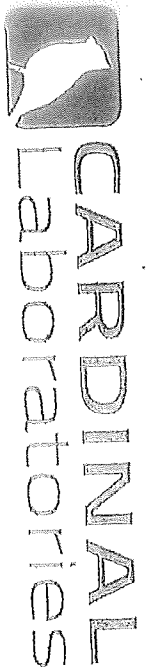
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



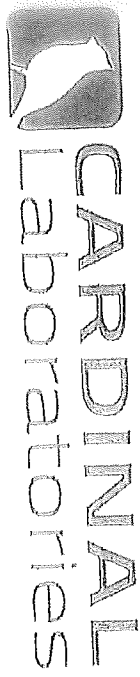
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Maryland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2475

ANALYSIS REQUEST

Company Name: Talon/PE		P.O. #: 701367.086.01																			
Project Manager: Kimberly Wilson		Company: Talon/PE																			
Address: 408 W. Texas Ave.		Attn:																			
City: Artesia		Address:																			
Phone #: 575-746-8768		City:																			
Fax #: 575-746-8905		State:																			
Project #: 701367.086.01		Project Owner: Line Back																			
Project Name: NU AMU # 73		State: zip:																			
Project Location: Lea County NM		Phone #:																			
Sample Name: O. Adkins		Fax #:																			
FOR LAB USE ONLY		MATRIX PRESERV/ SAMPLING																			
Lab ID:	Sample ID:	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME	BTX	TPH (ext.)	Chlorides				
H102214	B-1 0'	✓	1	✓									8/16/17	1100	✓	✓	✓				
1	B-1 1'													1105	✓	✓	✓				
2	B-1 2'													1110	✓	✓	✓				
3	B-1 3'													1115	✓	✓	✓				
4	B-1 4'													1120	✓	✓	✓				
5	B-1 5'													1125	✓	✓	✓				
6	B-1 10'													1135	✓	✓	✓				
7	B-1 15'													1145	✓	✓	✓				
8	B-1 20'													1155	✓	✓	✓				
<p>PLEASE NOTE: Liability and Damages: Cardinal's liability for errors associated with any chain custody request is limited to the amount paid by the client for the analysis. All claims including those for damages caused by any other means whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the sample analysis. In the event that Cardinal has been notified of a potential or actual claim, including without limitation, business interruption, loss of data, or loss of profits incurred by client, the submission of a claim or request for damages shall not constitute an admission of liability by Cardinal. Cardinal's liability shall be limited to the amount paid by the client for the analysis.</p>																					
Relinquished By: [Signature]		Date: 8/18/17		Received By: [Signature]		Date: 8/18/17		Time: 4:08		Sample Condition: Cool Intact		Checked By: [Signature]		Phone Result: [Signature]		Fax Result: [Signature]		REMARKS: P. 1084			
Delivered By: (Circle One) O. Adkins		Sample Condition: Cool Intact		Checked By: [Signature]		Phone Result: [Signature]		Fax Result: [Signature]		REMARKS: P. 1084		Phone Result: [Signature]		Fax Result: [Signature]		REMARKS: P. 1084		Phone Result: [Signature]		Fax Result: [Signature]	
Sampler: LPS - Bys - Other: [Signature]		Sample Condition: Cool Intact		Checked By: [Signature]		Phone Result: [Signature]		Fax Result: [Signature]		REMARKS: P. 1084		Phone Result: [Signature]		Fax Result: [Signature]		REMARKS: P. 1084		Phone Result: [Signature]		Fax Result: [Signature]	

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



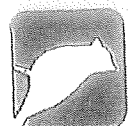
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

ANALYSIS REQUEST

Company Name: Talon/PE		P.O. #:																				
Project Manager: <i>Kevin Byrd</i>		Company: Talon/PE																				
Address: 408 W. Texas Ave.		Attn:																				
City: Artesia		State: NM	Zip: 88210																			
Phone #: 575-746-8768		Fax #: 575-746-8905																				
Project #: 761307.086.01		Project Owner: <i>Line Bell</i>	City:																			
Project Name: <i>NU ANU #73</i>		State:	Zip:																			
Project Location: <i>Lea County, NM</i>		Phone #:																				
Sample Name: <i>D. ADKINS</i>		Fax #:																				
FOR LAB USE ONLY		MATRIX	PRESERV	SAMPLING																		
Ltd L.D.	Sample L.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE/COOL	OTHER:	DATE	TIME								
H102214	B-2	01	6	1	✓								8/16/17	1240	1	1	1					
10	B-2	1												1245	1	1	1					
11	B-2	2												1250	1	1	1					
12	B-2	3												1255	1	1	1					
13	B-2	4												1300	1	1	1					
14	B-2	5												1310	1	1	1					
15	B-2	10												1315	1	1	1					
16	B-2	15												1320	1	1	1					
17	B-2	20												1330	1	1	1					
REMARKS: <i>P. 26/4</i>																						

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



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2475

### ANALYSIS REQUEST

P.O. #: 701307.086.01

Company Name: Talon/LPE

Company: Talon/LPE

Project Manager: Kimberly Wilson

Address: 408 W. Texas Ave.

City: Artesia

State: NM Zip: 88210

Phone #: 575-746-8768

Fax #: 575-746-8905

Project #: 701307.086.01 Project Owner: Lime Rock

Project Name: NVNW-73

City: State: Zip:

Project Location: Lees Ferry, NM

Sample Name: P. ADKINS

Phone #: Fax #:

FOR LAB USE ONLY

MATRIX PRESERV. SAMPLING

Lab ID.

Sample ID.

H703214

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

19

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

20

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

21

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

22

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

23

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

24

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

25

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

26

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

27

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

28

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

29

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

30

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

31

B-3 01

(G)RAB OR (C)OMP.  
# CONTAINERS  
GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER:  
ACID/BASE:  
ICE/COOL  
OTHER:

DATE

TIME

BTX  
TPH (ext.)  
chlorides

ANALYSIS REQUEST

ANALYSIS REQUEST

ANALYSIS REQUEST

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August 25, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: NVANU #73

Enclosed are the results of analyses for samples received by the laboratory on 08/18/17 16:08.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-1 0' (H702215-01)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

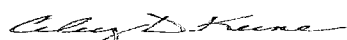
Surrogate: 1-Chlorooctane 84.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.9 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-2 0' (H702215-02)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

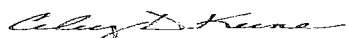
Surrogate: 1-Chlorooctane 85.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.7 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-2 0.5' (H702215-03)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

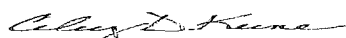
Surrogate: 1-Chlorooctane 84.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.0 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-3 0' (H702215-04)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

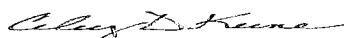
Surrogate: 1-Chlorooctane 77.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 77.1 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-4 0' (H702215-05)**

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	08/23/2017	ND	2.20	110	2.00	2.22	
Toluene*	<0.050	0.050	08/23/2017	ND	2.02	101	2.00	1.45	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	2.07	104	2.00	1.10	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	6.18	103	6.00	0.950	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 105 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

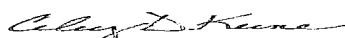
Surrogate: 1-Chlorooctane 75.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.3 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-5 0' (H702215-06)**

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	08/23/2017	ND	2.10	105	2.00	3.71	
Toluene*	<0.050	0.050	08/23/2017	ND	1.94	97.1	2.00	3.19	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	1.99	99.4	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	5.96	99.4	6.00	3.72	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIL) 105 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

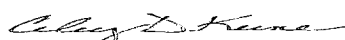
Surrogate: 1-Chlorooctane 88.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 92.2 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-6 0' (H702215-07)**

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	08/23/2017	ND	2.10	105	2.00	3.71	
Toluene*	<0.050	0.050	08/23/2017	ND	1.94	97.1	2.00	3.19	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	1.99	99.4	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	5.96	99.4	6.00	3.72	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 72-148

Chloride, SM4500CI-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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

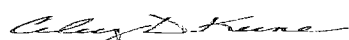
Surrogate: 1-Chlorooctane 88.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.9 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-7 0' (H702215-08)**

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	08/23/2017	ND	2.10	105	2.00	3.71	
Toluene*	<0.050	0.050	08/23/2017	ND	1.94	97.1	2.00	3.19	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	1.99	99.4	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	5.96	99.4	6.00	3.72	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 103 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

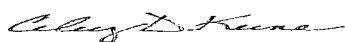
Surrogate: 1-Chlorooctane 73.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 74.2 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-8 0' (H702215-09)**

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	08/23/2017	ND	2.10	105	2.00	3.71	
Toluene*	<0.050	0.050	08/23/2017	ND	1.94	97.1	2.00	3.19	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	1.99	99.4	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	5.96	99.4	6.00	3.72	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PIB) 106 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

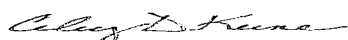
Surrogate: 1-Chlorooctane 83.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.8 % 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: 08/18/2017  
Reported: 08/25/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S-9 0' (H702215-10)**

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	08/23/2017	ND	2.10	105	2.00	3.71	
Toluene*	<0.050	0.050	08/23/2017	ND	1.94	97.1	2.00	3.19	
Ethylbenzene*	<0.050	0.050	08/23/2017	ND	1.99	99.4	2.00	3.78	
Total Xylenes*	<0.150	0.150	08/23/2017	ND	5.96	99.4	6.00	3.72	
Total BTEX	<0.300	0.300	08/23/2017	ND					

Surrogate: 4-Bromofluorobenzene (PII) 104 % 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	08/23/2017	ND	416	104	400	7.41	

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	08/22/2017	ND	178	89.1	200	0.422	
DRO >C10-C28	<10.0	10.0	08/22/2017	ND	202	101	200	7.68	
EXT DRO >C28-C36	<10.0	10.0	08/22/2017	ND					

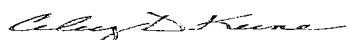
Surrogate: 1-Chlorooctane 77.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 83.2 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

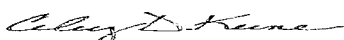
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received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

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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2475

Company Name: Talon/LE

Project Manager: Kim Dery Wilson

Address: 408 W. Texas Ave.

City: Artesia

State: NM Zip: 88210

Phone #: 575-746-8768

Fax #: 575-746-8905

Project #: 70(307.086.01 Project Owner: Lime Rock

Project Name: NVANU # 73

Project Location: Lea County NM

Sample Name: D-ADK1W5

FOR LAB USE ONLY

Lab I.D.

Sample I.D.

4702215

S-1 0'

S-2 0'

S-3 0.5'

S-4 0'

S-5 0'

S-6 0'

S-7 0'

S-8 0'

S-9 0'

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL.

OTHER :

DATE

TIME

8/16/17 1030

1040

1050

1100

1240

1250

1340

1350

1415

1425

BTX

TPH (BTX+)

chlorides

ANALYSIS REQUEST

Relinquished By:

Date: 8-18-17

Received By:

Relinquished By:

Date:

Received By:

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition

CHECKED BY:

10/18/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

11/15/17

Phone Result:

Yes

No

Yes

No

Adm'l Phone #:

Adm'l Fax #:

Adm'l Phone #:

Adm'l Fax #:

Adm'l Phone #:

Adm'l Fax #:

Adm'l Phone #:

Adm'l Fax #:

Adm'l Phone #:

Adm'l Fax #:

Background samples



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

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September 05, 2017

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: NVANU #73

Enclosed are the results of analyses for samples received by the laboratory on 08/28/17 16:20.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. 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,

Caley 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: 08/28/2017  
Reported: 09/05/2017  
Project Name: NVANU #73  
Project Number: 701307.086.01  
Project Location: LEA COUNTY, NM

Sampling Date: 08/16/2017  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: B-3 25' (H702275-01)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	800	16.0	08/31/2017	ND	432	108	400	0.00	

**Sample ID: B-3 30' (H702275-02)**

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	08/31/2017	ND	432	108	400	0.00	

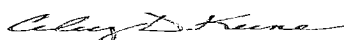
**Sample ID: B-3 35' (H702275-03)**

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	08/31/2017	ND	432	108	400	0.00	

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

### Notes and Definitions

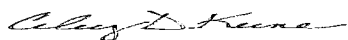
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient 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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Cardinal Laboratories

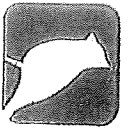
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



# CARDINAL Laboratories

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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Talon/LPE

Project Manager: K. Wilson

Address: 408 W. Texas Ave.

City: Artesia

Phone #: 575-746-8768

State: NM Zip: 88210

Project #: 701307.086.01

Fax #: 575-746-8905

Project Name: NVHWA # 73

Project Owner: Line Rock

Project Location: Lea County, NM

Sampler Name: D. ADKINS

FOR LAB USE ONLY

### ANALYSIS REQUEST

P.O. #:

Company: Talon/LPE

Attn:

Address:

City:

State: Zip:

Phone #:

Fax #:

#### MATRIX

#### PRESERV.

#### SAMPLING

Lab I.D.

Sample I.D.

H702215

(G)RAB OR (C)OMP.

# CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER:

ACID/BASE:

ICE/COOL

OTHER:

DATE

TIME

Chlorides

PLEASE NOTE: Liability and Damages, Cardinal's liability and damage coverage is limited to the amount paid by the client for the analysis. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 90 days after completion of the analysis. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruption, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors adding not of or related to the performance of services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated causes of damages or otherwise.

Relinquished By:

Date: 8/28/17

Received By:

Phone Result:

Yes

No

Yes

No

Add'l Phone #:

Fax Result:

Yes

No

Add'l Fax #:

REMARKS:

Relinquished By:

Date: 8/28/17

Received By:

Phone Result:

Yes

No

Yes

No

Add'l Phone #:

Fax Result:

Yes

No

Add'l Fax #:

REMARKS:

Delivered By: (Circle One)

Date: 8/28/17

Received By:

Phone Result:

Yes

No

Yes

No

Add'l Phone #:

Fax Result:

Yes

No

Add'l Fax #:

REMARKS:

Sampler - UPS - Bus - Other:

Date: 8/28/17

Received By:

Phone Result:

Yes

No

Yes

No

Add'l Phone #:

Fax Result:

Yes

No

Add'l Fax #:

REMARKS:

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