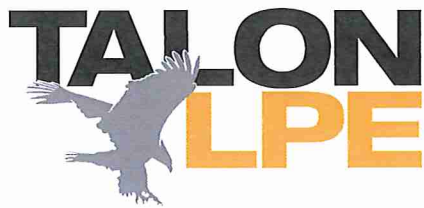


talonlpe.com • 866.742.0742



Remediation and Closure Report

Atoka San Andreas Unit #149
API # 30-015-00204
Talon Project No. 701307.117.01

Prepared For:

Lime Rock Resources
1111 Bagby St Suite 4600
Houston, TX 77002

Prepared By:

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

February 28, 2019

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Remediation and Closure Report**
Atoka San Andreas Unit #149
API # 30-015-00204

Dear Mr. Bratcher,

Lime Rock 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 remediation activities consist of the following.

Site Information

The ASAU #149 is located approximately 7.5 miles SE of Artesia, New Mexico. The legal location for this release is Unit Letter O, Section 14, Township 18 South and Range 26 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.743721 North and -104.348382 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, the soil in this area is made up of Harkey very fine sandy loam with 0 to 1 percent slopes. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is Holocene to lower Pleistocene in age and is comprised of piedmont alluvial deposits, which include very fine sandy loam. Drainage courses in this area are normally dry.

Ground Water and Site Ranking

The New Mexico State Engineer web site indicates that the depth to groundwater is 47' below ground surface (BGS). See [Appendix II](#) for the referenced groundwater data.

Therefore the ranking for this site is a 20 based on the following:

Depth to groundwater	≤50'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon a site ranking of 20, NMOCD Recommended Remedial Action Levels (RRALs) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, 100 mg/kg for TPH and 600 mg/kg for Total Chlorides.

Incident Description and Initial Remedial Actions

At approximately 6 am on October 8, 2018, the trunkline near ASAU #149 was observed to be leaking. The line was immediately shut in, isolated and repaired. Approximately 22 barrels (bbls) of mixed fluids were released. A vac truck was dispatched, recovering 13 bbls of produced water and 3 bbls of crude oil. A site plan illustrating the affected area is presented in [Appendix I](#).

Due to the proximity of the Penasco Draw, a backhoe was immediately brought in and remediation activities began on the same day (October 8). PID readings and field titrations were used to guide the excavation process. Confirmation samples were collected and the analytical results are presented on the following data tables. See [Appendix VI](#) for a complete report of laboratory results.

October 8, 2018, Soil Analysis

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (mg/kg)
S-1	0	<0.300	<16.0	<10.0	<10.0	<10.0	<10.0
S-2	0	<0.300	<16.0	<10.0	<10.0	<10.0	<10.0
S-3	0	<0.300	<16.0	<10.0	<10.0	<10.0	<10.0
S-4	0	<0.300	<16.0	<10.0	<10.0	<10.0	<10.0
S-5	0	<0.300	32.0	<10.0	<10.0	<10.0	<10.0
S-6	0	<0.300	32.0	<10.0	<10.0	<10.0	<10.0
S-7	4	72.6	1260	263	1050	104	1417
S-8	3	<0.300	224	<10.0	11.9	12.2	24.1
S-9	4	6.38	1060	100	1390	208	1698
S-10	4	<0.300	16.0	<10.0	16.0	18.7	34.7

October 11, 2018, Soil Analysis

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH EXT (mg/kg)	Total TPH (mg/kg)
S-11	SW	<0.300	528	11.4	708	113	832.4
S-12	SW	<0.300	96.0	<10.0	15.8	<10.0	15.8
S-13	SW	<0.300	<16.0	<10.0	23.1	<10.0	23.1
S-14	SW	<0.300	16.0	<10.0	<10.0	<10.0	<10.0
S-15	6	<0.300	<16.0	<10.0	<10.0	<10.0	<10.0

SW- Sidewall Sample

Remedial Actions:

- The impacted area was excavated to 3-4 feet deep on the western portion of the impacted area, and 6-feet BGS near the release point as shown on the site plan. See bottom of excavation sample S-15.
- The excavation continued eastward as near as possible to Fanning Road without compromising the structural integrity of the roadway. Sidewall samples S-11 and S-12 were then obtained.
- Additionally, bioremediation (microblaze) was performed on the eastern portion of the spill area.
- All of the excavated material was transported to Lea Land, LLC, a NMOCD approved solid waste disposal facility.
- The excavated area was backfilled with locally obtained topsoil, machine compacted, contoured to match the surrounding terrain and seeded.
- A Final C-141 is presented in [Appendix V](#).

Closure

On behalf of Lime Rock Resources, we respectfully request that no further actions be required and that closure with regard to this incident be granted.

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



Brandon Sinclair
Environmental Scientist



David J. Adkins
District Manager

Attachments:

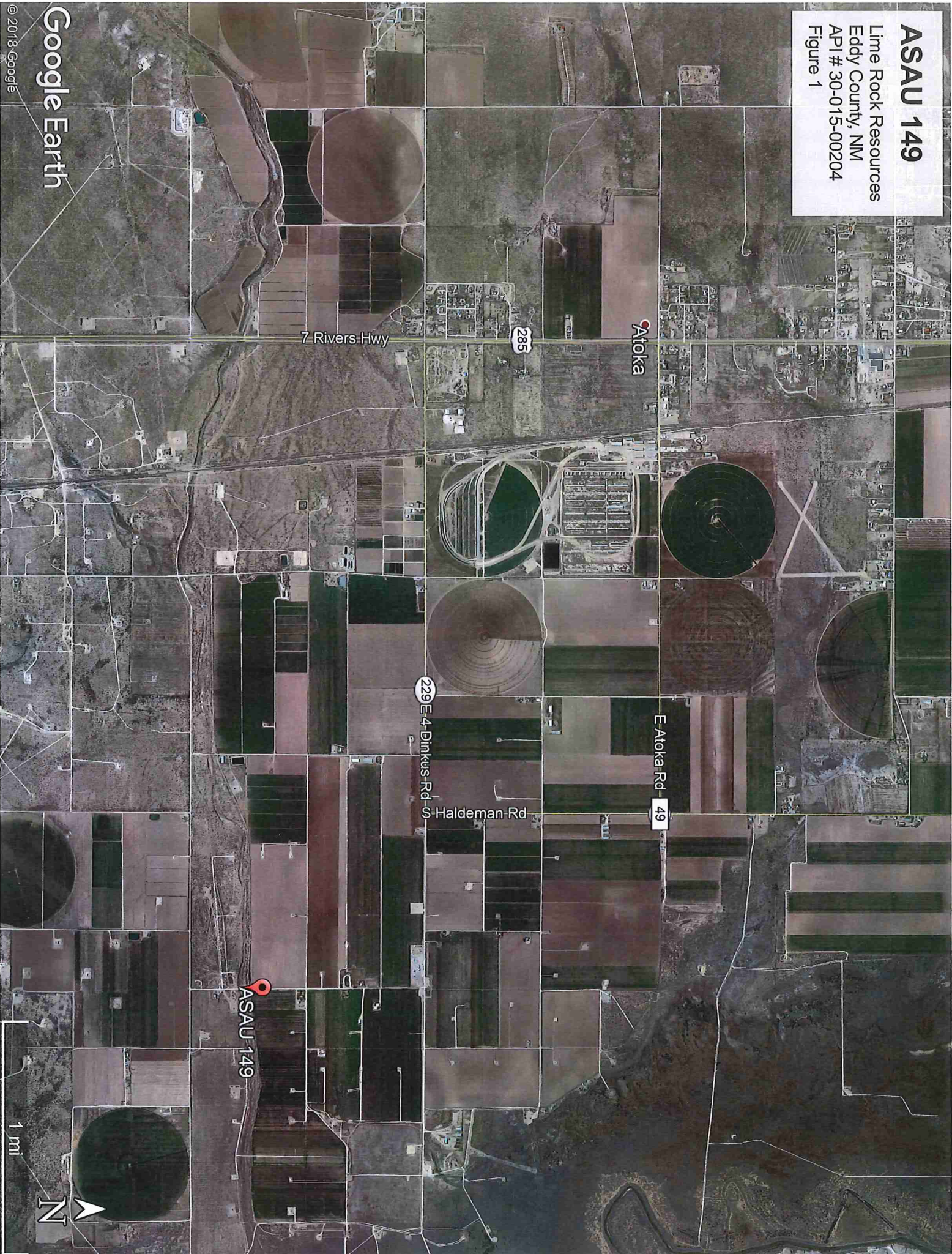
- Appendix I Site Plan
- Appendix II Groundwater Data & Soil Survey
- Appendix III Photographic Documentation
- Appendix IV FEMA Flood Map
- Appendix V Final C-141
- Appendix VI Laboratory Reports

APPENDIX I

SITE PLAN

ASAU 149

Lime Rock Resources
Eddy County, NM
API # 30-015-00204
Figure 1



Google Earth

© 2018 Google

1 mi



ASAU 149

Lime Rock Resources
Eddy County, NM
API # 30-015-00204
Figure 2

Legend

Excavation (3 ft)

Excavation (6 ft)

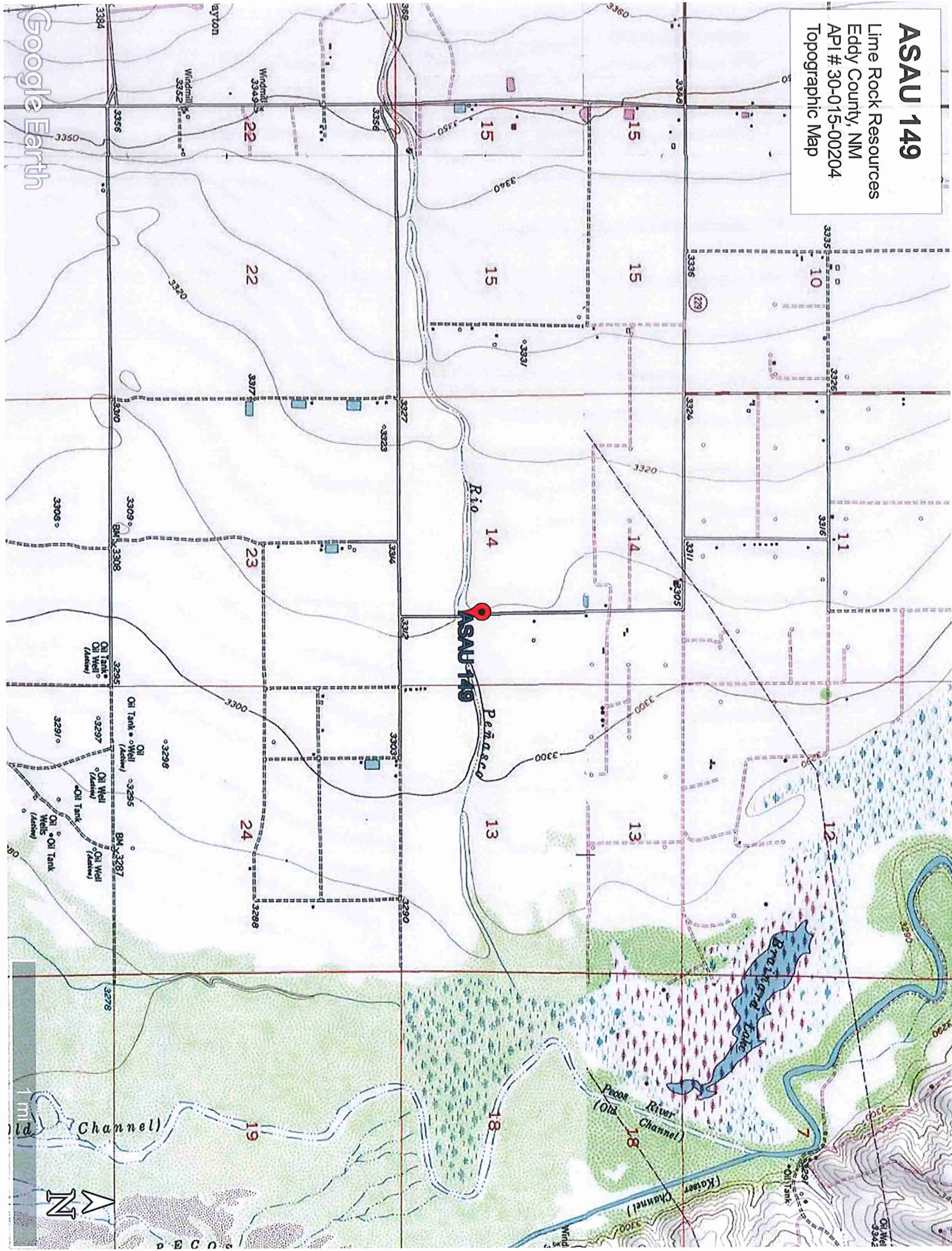
Release Point

Soil Sample

Underground Pipeline

ASAU 149

Lime Rock Resources
Eddy County, NM
API # 30-015-00204
Topographic Map



APPENDIX II
GROUNDWATER DATA
SOIL SURVEY



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	Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<u>RA 12483 POD3</u>		RA	ED	1	4	4	14	18S	26E	561120	3623003	37	58	47	11
<u>RA 12483 POD2</u>		RA	ED	1	4	4	14	18S	26E	561084	3622999	73	62	51	11
<u>RA 12483 POD1</u>		RA	ED	1	4	4	14	18S	26E	561070	3623006	85	72	55	17
<u>RA 12483 POD4</u>		RA	ED	1	4	4	14	18S	26E	561086	3622959	86	60	48	12
<u>RA 12483 POD5</u>		RA	ED	1	4	4	14	18S	26E	561126	3622920	96	59	53	6
<u>RA 03585</u>		RA	ED	4	1	4	14	18S	26E	560955	3623216*	286	1849		
<u>RA 01343 CLW</u>	O	RA	CH	1	2	4	14	18S	26E	561157	3623417*	405	150	23	127
<u>RA 00773</u>		RA	ED		1	2	23	18S	26E	560856	3622508*	586			
<u>RA 00774</u>		RA	ED		1	2	23	18S	26E	560856	3622508*	586			
<u>RA 00775</u>		RA	ED		1	2	23	18S	26E	560856	3622508*	586	900		
<u>RA 03600</u>		RA	ED	2	3	2	14	18S	26E	560956	3623821*	833	955		
<u>RA 02132 B</u>		RA	ED	1	2	1	24	18S	26E	561958	3622611*	896	166		
<u>RA 03900</u>		RA	ED	1	3	1	24	18S	26E	561557	3622206*	900	845	90	755
<u>RA 01144 -S</u>		RA	CH		3	1	23	18S	26E	560055	3622102*	1428	809		
<u>RA 01296 CLW229885</u>	O	RA	ED	1	3	1	23	18S	26E	559954	3622201*	1450	180	70	110
<u>RA 00012 A</u>		RA	ED	3	3	4	11	18S	26E	560757	3624430*	1473	600		
<u>RA 03639</u>		RA	ED	4	4	3	11	18S	26E	560555	3624429*	1539	1710		
<u>RA 00012</u>	O	RA	ED		3	4	11	18S	26E	560858	3624531*	1547	600		
<u>RA 03596</u>		RA	ED		3	4	11	18S	26E	560858	3624531*	1547	1736		
<u>RA 01296</u>		RA	ED	3	3	1	23	18S	26E	559954	3622001*	1570	180	80	100
<u>RA 03731</u>		RA	ED	1	1	1	14	18S	26E	559953	3624223*	1706	120	30	90
<u>RA 11784 POD1</u>		RA	ED	1	2	2	22	18S	26E	559480	3622632	1718	154	98	56
<u>RA 03409</u>		RA	ED	1	4	2	24	18S	26E	562763	3622210*	1796	175	18	157
<u>RA 03634</u>		RA	ED	3	1	4	11	18S	26E	560757	3624835*	1866	1797		
<u>RA 00011</u>	O	RA	ED		3	3	11	18S	26E	560054	3624529*	1875	1100		
<u>RA 00011 A</u>		RA	ED		3	3	11	18S	26E	560054	3624529*	1875	1100		
<u>RA 03409 REPAR</u>		RA	ED	2	4	2	24	18S	26E	562963	3622210*	1976	175	18	157
<u>RA 02389</u>		RA	ED	1	2	2	15	18S	26E	559551	3624221*	2009	209		
<u>RA 03499</u>		RA	ED		3	2	15	18S	26E	559251	3623715*	2030	616	40	576
<u>RA 03499 CLW261762</u>	O	RA	ED		3	2	15	18S	26E	559251	3623715*	2030	616	40	576
<u>RA 03499 REPAR</u>		RA	ED		3	2	15	18S	26E	559251	3623715*	2030	616	40	576
<u>RA 09374</u>		RA	ED	2	1	1	25	18S	26E	561759	3620995*	2105	101		
<u>RA 03750</u>		RA	ED		3	4	24	18S	26E	562465	3621299*	2155	110	35	75

<u>RA 03598</u>	RA	ED	1	3	2	22	18S	26E	559154	3622198*	2161	1815		
<u>RA 06979</u>	RA	ED		1	1	25	18S	26E	561660	3620896*	2175	100		
<u>RA 02432</u>	RA	ED	2	3	1	12	18S	26E	561764	3625443*	2505	100		
<u>RA 01171</u>	RA	ED	1	3	4	10	18S	26E	559149	3624622*	2572	864	8	856
<u>RA 03599</u>	RA	ED	2	1	1	22	18S	26E	558552	3622599*	2636	1765		
<u>RA 01446</u>	RA	ED		1	3	15	18S	26E	558450	3623307*	2722	175		
<u>RA 01296 S3</u>	RA	ED	1	3	3	15	18S	26E	558351	3623003*	2805	230	70	160
<u>RA 01296 S5</u>	RA	ED	1	3	3	15	18S	26E	558351	3623003*	2805	223	35	188
<u>RA 01446 CLW</u>	RA	ED	1	3	3	15	18S	26E	558351	3623003*	2805	165	42	123
<u>RA 02800</u>	RA	ED	1	3	3	15	18S	26E	558351	3623003*	2805	102	30	72
<u>RA 03756</u>	RA	ED	1	1	4	10	18S	26E	559147	3625027*	2845	148	55	93
<u>RA 03340</u>	RA	ED		3	1	22	18S	26E	558454	3622097*	2852	100	60	40
<u>RA 03580</u>	RA	ED		3	1	22	18S	26E	558454	3622097*	2852	1700		
<u>RA 10490</u>	RA	ED		4	2	27	18S	26E	559659	3620486*	2936	200	75	125
<u>RA 04298</u>	RA	ED		1	2	19	18S	27E	564082	3622523*	2966	92		
<u>RA 09466</u>	RA	ED	3	3	1	22	18S	26E	558353	3621996*	2981	160	70	90

Average Depth to Water: 49 feet
 Minimum Depth: 8 feet
 Maximum Depth: 98 feet

Record Count:49

UTMNAD83 Radius Search (in meters):

Easting (X): 561156

Northing (Y): 3623012

Radius: 3000

*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.

11/7/18 10:38 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Eddy Area, New Mexico

Hk—Harkey very fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1w4l
Elevation: 3,000 to 4,200 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 60 to 64 degrees F
Frost-free period: 180 to 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Harkey and similar soils: 95 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Harkey

Setting

Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 9 inches: very fine sandy loam
H2 - 9 to 87 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B

Ecological site: Sandy (R042XC004NM)
Hydric soil rating: No

Minor Components

Pima variant

Percent of map unit: 1 percent
Landform: Alluvial flats, flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: Bottomland (R042XC017NM)
Hydric soil rating: Yes

Anthony

Percent of map unit: 1 percent
Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: Sandy (R042XC004NM)
Hydric soil rating: Yes

Arno

Percent of map unit: 1 percent
Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Salty Bottomland (R042XC033NM)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 14, Sep 12, 2018

APPENDIX III

PHOTOGRAPHIC DOCUMENTATION

Origin Point

DIRECTION
E (M)

32.74381°N
104.34834°W

ACCURACY 16 ft
DATUM WGS84



Lime Rock

ASAU atoka 149

10/8/18,
4:25:09 PM

Area Photographs

DIRECTION
N (M)

32.74363°N
104.34829°W

ACCURACY 16 ft
DATUM WGS84



Lime Rock

ASAU atoka 149

10/8/18,
5:24:42 PM

DIRECTION
S (M)

32.74384°N
104.34833°W

ACCURACY 16 ft
DATUM WGS84

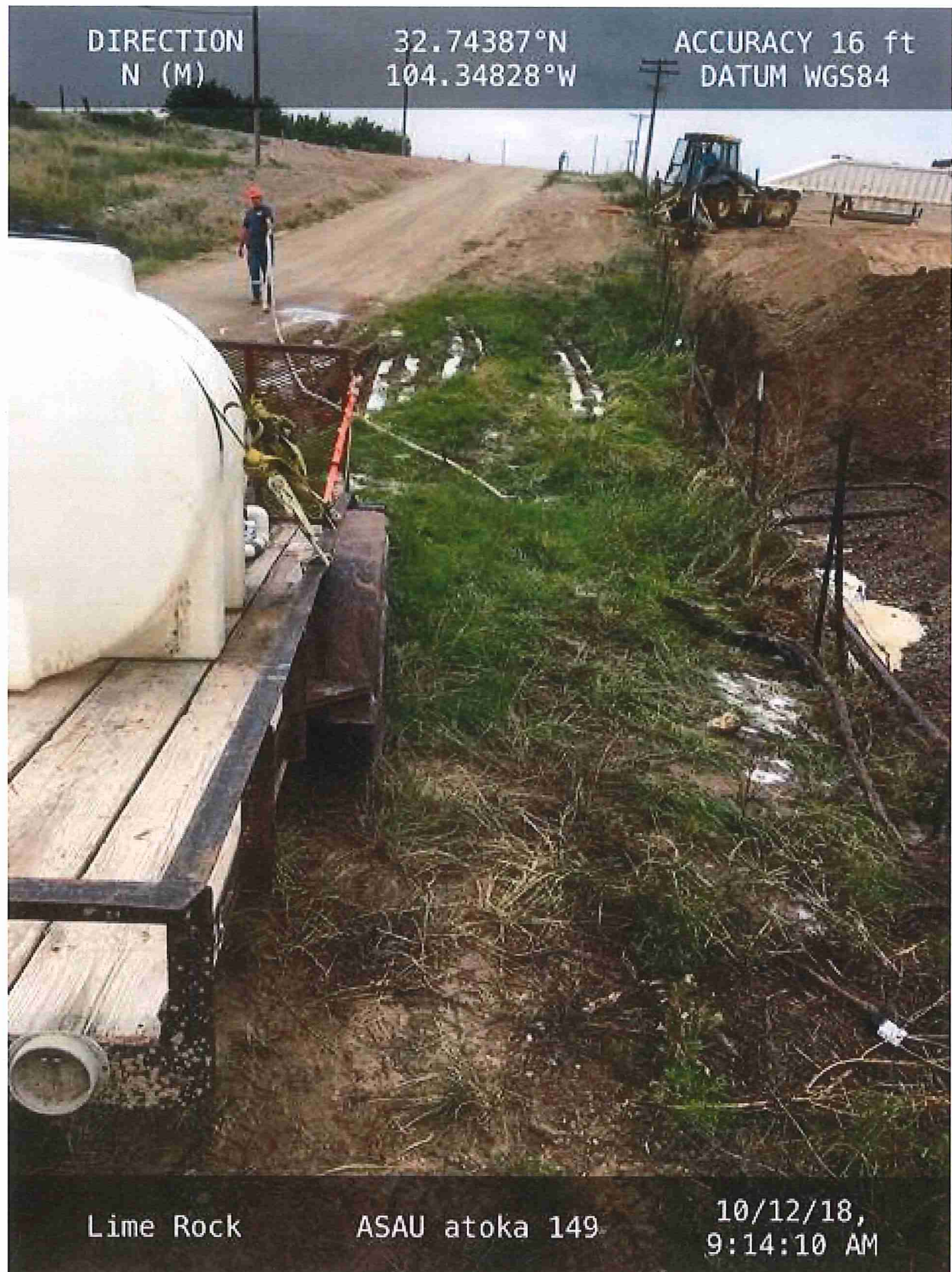


Lime Rock

ASAU atoka 149

10/8/18,
5:25:16 PM

Bioremediation Activity



Completed Photos

DIRECTION
343 deg(T)

32.74361°N
104.34831°W

ACCURACY 5 m
DATUM WGS84



ASAU 149

Complete

2019-03-06
10:38:26-07:00

DIRECTION
259 deg(T)

32.74373°N
104.34832°W

ACCURACY 5 m
DATUM WGS84



ASAU 149

Complete

2019-03-06
10:39:07-07:00

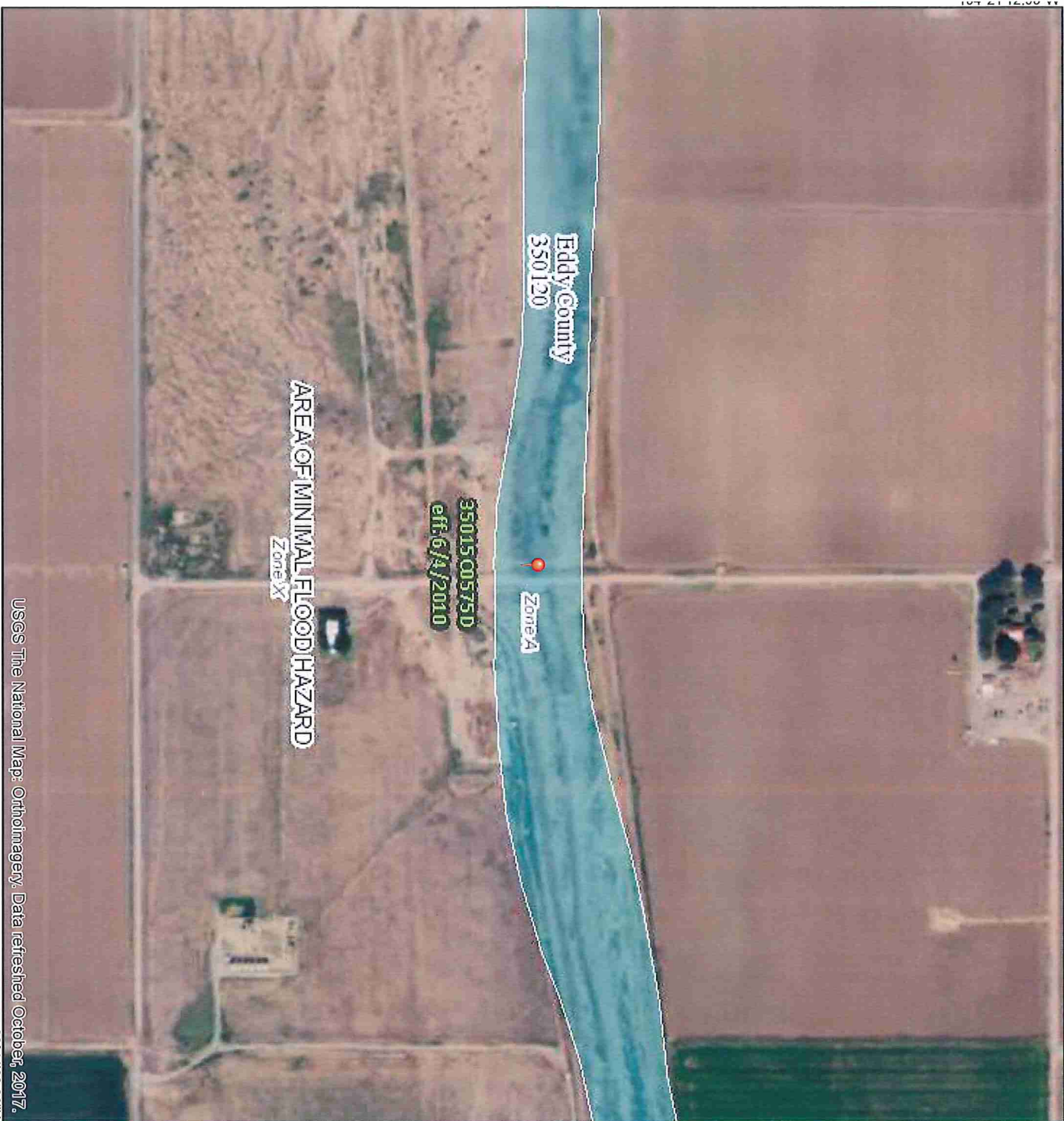


APPENDIX IV
FEMA FLOOD MAP

National Flood Hazard Layer FIRMette



32°44'52.53"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017.

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, AE3 With BFE or Depth Zone AE, AO, AH, VE, AR Regulatory Floodway
----------------------------	--

0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X	Future Conditions 1% Annual Chance Flood Hazard Zone X
Area with Reduced Flood Risk due to Levee. See Notes, Zone X	Area with Flood Risk due to Levee Zone D

NO SCREEN	Area of Minimal Flood Hazard Zone X
Effective LOMRS	Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer Levee, Dike, or Floodwall
--------------------	---

OTHER AREAS	Cross Sections with 1% Annual Chance Water Surface Elevation Coastal Transect Base Flood Elevation Line (BFE) Limit of Study Jurisdiction Boundary Coastal Transect Baseline Profile Baseline Hydrographic Feature
-------------	---

MAP PANELS	Digital Data Available No Digital Data Available Unmapped
------------	---

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/26/2019 at 11:31:52 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmapped areas cannot be used for regulatory purposes.

APPENDIX V

FINAL C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural
Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Lime Rock Resources II-A, L.P.	OGRID 277558
Contact Name: Mike Barrett	Contact Telephone 575.365.9724
Contact email: mbarrett@limerockresources.com	Incident # (assigned by OCD)
Contact mailing address: 1111 Bagby Street, Suite 4600, Houston, TX 77002	

Location of Release Source

Latitude 32.743721 Longitude -104.348382
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Atoka San Andreas Unit #149	Site Type: Oil Well
Date Release Discovered: 10/8/18	API# (if applicable) 30-015-00204

Unit Letter	Section	Township	Range	County
O	14	18S	26E	Eddy

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: Martin Farms)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

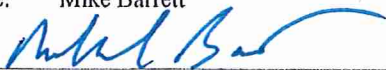
<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 5	Volume Recovered (bbls) 3
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 17	Volume Recovered (bbls) 13
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release: A 3-inch flow line split causing mixed fluids (oil and water) to be released and pool in a low area of the draw. The line was immediately shut in and isolated.
Remediation activities were immediately undertaken due to the fact that a large scale rain event could have the potential to shed contaminants from the (dry) draw into the Pecos River.
The line was entirely replaced and put back into service upon completion of remediation activities.

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.	
Printed Name: Mike Barrett	Title: Production Superintendent
Signature: 	Date: 10/19/18
email: mbarrette@limerockresources.com	Telephone: 575-365-9724
<u>OCD Only</u>	
Received by: _____	Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>47</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- ☐ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☐ Depth to water determination
- ☐ Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☐ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name:

Title:

Signature: _____

Date:

email:

Telephone:

OCD Only

Received by: _____

Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: *Each of the following items must be included in the plan.*

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

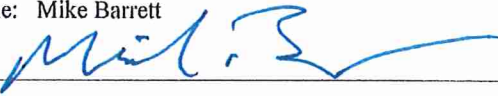
Closure Report Attachment Checklist: *Each of the following items must be included in the closure report.*

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Mike Barrett

Title: Production Superintendent

Signature: 

Date: 2/28/19

email: mbarett@limerockresources.com

Telephone: 575-365-9724

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

APPENDIX VI
LABORATORY REPORTS



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

October 12, 2018

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ASAU #149 TRUNKLINE

Enclosed are the results of analyses for samples received by the laboratory on 10/11/18 10:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received: 10/11/2018
Reported: 10/12/2018
Project Name: ASAU #149 TRUNKLINE
Project Number: 701307.117.01
Project Location: LIMEROCK-EDDY

Sampling Date: 10/10/2018
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: S - 1 0' (H802896-01)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.394		
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223		
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577		
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492		
Total BTX	<0.300	0.300	10/11/2018	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 108 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/11/2018	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	10/11/2018	ND	214	107	200	10.3		
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	212	106	200	8.11		
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND						

Surrogate: 1-Chlorooctane 89.1 % 41-142

Surrogate: 1-Chlorooctadecane 81.9 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celestine Keene

Celestine 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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 2 0' (H802896-02)

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	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 69.8-142

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	10/11/2018	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	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

Surrogate: 1-Chlorooctane 83.1 % 41-142

Surrogate: 1-Chlorooctadecane 76.7 % 37.6-147

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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 3 0' (H802896-03)

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	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/11/2018	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	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

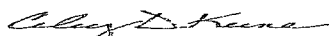
Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 97.4 % 37.6-147

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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 4 0' (H802896-04)

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	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 109 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	10/11/2018	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	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

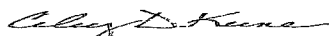
Surrogate: 1-Chlorooctane 96.5 % 41-142

Surrogate: 1-Chlorooctadecane 91.2 % 37.6-147

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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 5 0' (H802896-05)

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	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 108 % 69.8-142

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	10/11/2018	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	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

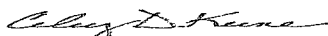
Surrogate: 1-Chlorooctane 97.9 % 41-142

Surrogate: 1-Chlorooctadecane 92.3 % 37.6-147

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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 6 0' (H802896-06)

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	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTEX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 110 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	10/11/2018	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	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	<10.0	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	<10.0	10.0	10/11/2018	ND					

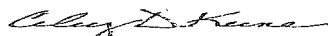
Surrogate: 1-Chlorooctane 98.2 % 41-142

Surrogate: 1-Chlorooctadecane 90.9 % 37.6-147

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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 7 4' (H802896-07)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<2.00	2.00	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	12.9	2.00	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	16.7	2.00	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	43.1	6.00	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTX	72.6	12.0	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 115 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1260	16.0	10/11/2018	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*	263	10.0	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	1050	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	104	10.0	10/11/2018	ND					

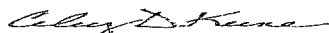
Surrogate: 1-Chlorooctane 124 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 37.6-147

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: 10/11/2018
 Reported: 10/12/2018
 Project Name: ASAU #149 TRUNKLINE
 Project Number: 701307.117.01
 Project Location: LIMEROCK-EDDY

 Sampling Date: 10/10/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: S - 8 3' (H802896-08)

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	10/11/2018	ND	2.08	104	2.00	0.394	
Toluene*	<0.050	0.050	10/11/2018	ND	2.05	103	2.00	0.223	
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.08	104	2.00	0.0577	
Total Xylenes*	<0.150	0.150	10/11/2018	ND	5.99	99.8	6.00	0.0492	
Total BTX	<0.300	0.300	10/11/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 107 % 69.8-142

Chloride, SM4500Cl-B			mg/kg		Analyzed By: HM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	10/12/2018	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	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	11.9	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	12.2	10.0	10/11/2018	ND					

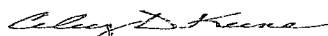
Surrogate: 1-Chlorooctane 99.2 % 41-142

Surrogate: 1-Chlorooctadecane 93.2 % 37.6-147

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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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 9 4' (H802896-09)

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	10/12/2018	ND	2.14	107	2.00	0.672	
Toluene*	0.503	0.050	10/12/2018	ND	2.03	102	2.00	0.830	
Ethylbenzene*	1.41	0.050	10/12/2018	ND	2.01	101	2.00	0.688	
Total Xylenes*	4.46	0.150	10/12/2018	ND	6.00	100	6.00	0.256	
Total BTEX	6.38	0.300	10/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 122 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1060	16.0	10/12/2018	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*	100	10.0	10/11/2018	ND	214	107	200	10.3	
DRO >C10-C28*	1390	10.0	10/11/2018	ND	212	106	200	8.11	
EXT DRO >C28-C36	208	10.0	10/11/2018	ND					

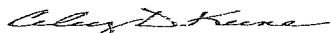
Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 127 % 37.6-147

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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:	10/11/2018	Sampling Date:	10/10/2018
Reported:	10/12/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 10 4' (H802896-10)

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	10/11/2018	ND	2.14	107	2.00	0.672		
Toluene*	<0.050	0.050	10/11/2018	ND	2.03	102	2.00	0.830		
Ethylbenzene*	<0.050	0.050	10/11/2018	ND	2.01	101	2.00	0.688		
Total Xylenes*	<0.150	0.150	10/11/2018	ND	6.00	100	6.00	0.256		
Total BTEX	<0.300	0.300	10/11/2018	ND						

Surrogate: 4-Bromofluorobenzene (PII) 98.6 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	10/12/2018	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	10/11/2018	ND	214	107	200	10.3		
DRO >C10-C28*	16.0	10.0	10/11/2018	ND	212	106	200	8.11		
EXT DRO >C28-C36	18.7	10.0	10/11/2018	ND						

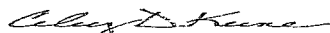
Surrogate: 1-Chlorooctane 92.4 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

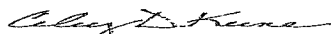
Notes and Definitions

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



CARDINAL
Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]

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



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

October 18, 2018

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ASAU #149 TRUNKLINE

Enclosed are the results of analyses for samples received by the laboratory on 10/12/18 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Coley D. Keene". The signature is written in a cursive, flowing style.

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: 10/12/2018
 Reported: 10/18/2018
 Project Name: ASAU #149 TRUNKLINE
 Project Number: 701307.117.01
 Project Location: LIMEROCK-EDDY

 Sampling Date: 10/11/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: S - 11 (H802947-01)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	3.48	
Toluene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	2.44	
Ethylbenzene*	<0.050	0.050	10/17/2018	ND	2.26	113	2.00	2.87	
Total Xylenes*	<0.150	0.150	10/17/2018	ND	6.47	108	6.00	2.72	
Total BTX	<0.300	0.300	10/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 115 % 69.8-142

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	10/17/2018	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*	11.4	10.0	10/17/2018	ND	205	103	200	3.73	
DRO >C10-C28*	708	10.0	10/17/2018	ND	195	97.4	200	1.35	
EXT DRO >C28-C36	113	10.0	10/17/2018	ND					

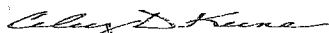
Surrogate: 1-Chlorooctane 91.7 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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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: 10/12/2018
 Reported: 10/18/2018
 Project Name: ASAU #149 TRUNKLINE
 Project Number: 701307.117.01
 Project Location: LIMEROCK-EDDY

 Sampling Date: 10/11/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: S - 12 (H802947-02)

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	10/17/2018	ND	2.20	110	2.00	3.48	
Toluene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	2.44	
Ethylbenzene*	<0.050	0.050	10/17/2018	ND	2.26	113	2.00	2.87	
Total Xylenes*	<0.150	0.150	10/17/2018	ND	6.47	108	6.00	2.72	
Total BTEX	<0.300	0.300	10/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 115 % 69.8-142

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	10/17/2018	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	10/17/2018	ND	205	103	200	3.73	
DRO >C10-C28*	15.8	10.0	10/17/2018	ND	195	97.4	200	1.35	
EXT DRO >C28-C36	<10.0	10.0	10/17/2018	ND					

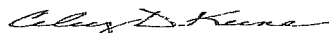
Surrogate: 1-Chlorooctane 89.8 % 41-142

Surrogate: 1-Chlorooctadecane 88.8 % 37.6-147

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:	10/12/2018	Sampling Date:	10/11/2018
Reported:	10/18/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 13 (H802947-03)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	3.48	
Toluene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	2.44	
Ethylbenzene*	<0.050	0.050	10/17/2018	ND	2.26	113	2.00	2.87	
Total Xylenes*	<0.150	0.150	10/17/2018	ND	6.47	108	6.00	2.72	
Total BTX	<0.300	0.300	10/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 115 % 69.8-142

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	10/17/2018	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	10/17/2018	ND	205	103	200	3.73	
DRO >C10-C28*	23.1	10.0	10/17/2018	ND	195	97.4	200	1.35	
EXT DRO >C28-C36	<10.0	10.0	10/17/2018	ND					

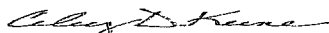
Surrogate: 1-Chlorooctane 98.8 % 41-142

Surrogate: 1-Chlorooctadecane 98.3 % 37.6-147

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:	10/12/2018	Sampling Date:	10/11/2018
Reported:	10/18/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 14 (H802947-04)

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	10/17/2018	ND	2.20	110	2.00	3.48	
Toluene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	2.44	
Ethylbenzene*	<0.050	0.050	10/17/2018	ND	2.26	113	2.00	2.87	
Total Xylenes*	<0.150	0.150	10/17/2018	ND	6.47	108	6.00	2.72	
Total BTEX	<0.300	0.300	10/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 110 % 69.8-142

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	10/17/2018	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	10/17/2018	ND	205	103	200	3.73	
DRO >C10-C28*	<10.0	10.0	10/17/2018	ND	195	97.4	200	1.35	
EXT DRO >C28-C36	<10.0	10.0	10/17/2018	ND					

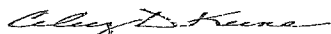
Surrogate: 1-Chlorooctane 93.0 % 41-142

Surrogate: 1-Chlorooctadecane 92.2 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

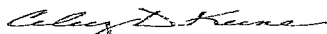
Notes and Definitions

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

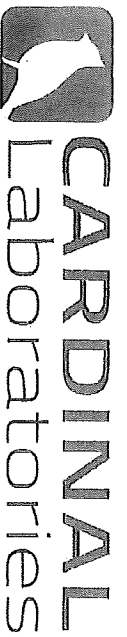
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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

ANALYSIS REQUEST

BILL TO

Company Name: Talon LPE
Project Manager: DAVID ADKINS
Address: 400 W. TERRY AVE
City: KTZ State: NM Zip: 88210
Phone #: 575 441 4835 Fax #:
Project #: 701307.117.01 Project Owner: Line Road
Project Name: AS 441 149 Trunk Line
Project Location: Edley Co, NM
Sample Name: D-ADKINS

P.O. #: 701307.117.01
Company: Talon LPE
Attn:
Address:
City: State: Zip:
Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					DATE	TIME	ANALYSIS REQUEST									
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :											
H802947																				
1	S-11		5																	
2	S-12		1																	
3	S-13		1																	
4	S-14		1																	

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Relinquished By: [Signature] Date: 10/12/18 Time: 1:30 Received By: [Signature] Date: 10/12/18 Time: 1:45

Phone Result: ☐ Yes ☐ No ☐ Add'l Phone #:
Fax Result: ☐ Yes ☐ No ☐ Add'l Fax #:
REMARKS:

Relinquished By: [Signature] Date: 10/12/18 Time: 1:30 Received By: [Signature] Date: 10/12/18 Time: 1:45

Delivered By: [Signature] Date: 10/12/18 Time: 1:45 Sample Condition: ☐ Cool ☐ Intact ☐ Yes ☐ No ☐ Yes ☐ No

Sampler - UPS - Bus - Other: 4.12 449 10

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

October 18, 2018

DAVID ADKINS

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: ASAU #149 TRUNKLINE

Enclosed are the results of analyses for samples received by the laboratory on 10/12/18 15:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

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

Sincerely,



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:	10/12/2018	Sampling Date:	10/11/2018
Reported:	10/18/2018	Sampling Type:	Soil
Project Name:	ASAU #149 TRUNKLINE	Sampling Condition:	Cool & Intact
Project Number:	701307.117.01	Sample Received By:	Tamara Oldaker
Project Location:	LIMEROCK-EDDY		

Sample ID: S - 15 6' (H802946-01)

BTX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	3.48	
Toluene*	<0.050	0.050	10/17/2018	ND	2.20	110	2.00	2.44	
Ethylbenzene*	<0.050	0.050	10/17/2018	ND	2.26	113	2.00	2.87	
Total Xylenes*	<0.150	0.150	10/17/2018	ND	6.47	108	6.00	2.72	
Total BTX	<0.300	0.300	10/17/2018	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 114 % 69.8-142

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	10/17/2018	ND	400	100	400	3.92	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	10/17/2018	ND	205	103	200	3.73	
DRO >C10-C28*	<10.0	10.0	10/17/2018	ND	195	97.4	200	1.35	
EXT DRO >C28-C36	<10.0	10.0	10/17/2018	ND					

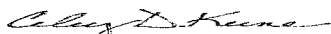
Surrogate: 1-Chlorooctane 96.7 % 41-142

Surrogate: 1-Chlorooctadecane 96.2 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

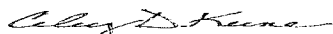
Notes and Definitions

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Celey D. Keene, Lab Director/Quality Manager

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