



Incident ID	NCH1823355359
District RP	1RP-5167
Facility ID	30-025-02709
Application ID	pCH1823355621

December 6, 2018

APPROVED
By CHernandez at 2:27 pm, Jan 16, 2019

Christina Hernandez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division, District 1
1625 French Drive
Hobbs, NM 88240

GPS coordinates have been modified to 32.557226, -103.511284. The facility number is fCH1901642211. Delineation incomplete at SP #1, SP #2, SP #3. Remediation plan approved. See email correspondence for conditions.

Re: Site Assessment Report and Proposed Remediation Plan
Site Name: Lea Unit South Battery
GPS: Latitude: 32.55722 Longitude: -103.50805
Legals: UL "I", Sec. 24, T20S, R34E
Lea County, New Mexico
NMOCD Ref. No. 1RP-5167

Lowry Environmental & Associates, LLC (LEA), on behalf of Legacy Reserves Operating, LP, has prepared this Site Assessment Report and Proposed Remediation Plan for the Release Site known as the Lea Unit South Battery. Details of the release are summarized on the table below:

Nature and Volume of Release	
Date Release Discovered	8/18/2018
Type of Release	Crude Oil
Source of Release	Flowline
Volume Released (bbls)	72
Volume Recovered (bbls)	60
Cause of Release	
The release was attributed to a 3rd Party Trucking Company striking above ground flowlines.	
Affected Area	
The release affected an area within the pasture measuring approximately 2,600 sq. ft. adjacent to, and west of, the caliche access road. Overspray from the release affected an additional area measuring approximately 60 ft. by 150 ft. southwest of the affected flowlines.	
Was this a major release?	If YES, for what reasons (s) is this considered a major release?
Yes	Volume Greater than 25 bbls
If Yes, was immediate notice given to the OCD? By whom? To whom? When and by what means?	
Not Available, Not Available, Not Available, Not Available	

A copy of the Release Notification (NMOCD Form C-141) is provided as Attachment #8.

Incident ID	NCH1823355359
District RP	1RP-5167
Facility ID	30-025-02709
Application ID	pCH1823355621

Site Assessment/Characterization	
What is the shallowest depth to groundwater beneath the area affected by the release?	50-100'
Did this release impact groundwater or surface water?	No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	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)?	No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	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?	No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	No
Are the lateral extents of the release within 300 feet of a wetland?	No
Are the lateral extents of the release overlying a subsurface mine?	No
Are the lateral extents of the release overlying an unstable area such as karst geology?	No
Are the lateral extents of the release within a 100-year floodplain?	No
Did the release impact areas not on an exploration, development, production or storage site?	Yes

A search of groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey was conducted in an effort to determine the average depth to groundwater within a 1 Mile radius of the Site and identify any registered water wells within a 1/2 Mile radius of the Site. A search of the NMOSE database suggested the presence of 1 water well (CP00665) within 1,000 ft. of the site. A field survey indicated available geographic information for CP00665 was outdated and/or incorrect; there is no waterwell in that vicinity. A search of the USGS database did not identify any water wells within a 1/2 Mile radius.

Based on the volume and nature of the release, inferred depth to groundwater and NMOCD Siting Criteria, the NMOCD Closure Criteria for the Site is as follows:

Closure Criteria for Soil Impacted by a Release	
Benzene	10 mg/kg
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	50 mg/kg
Total Petroleum Hydrocarbons	2500 mg/kg
Combined GRO and DRO	1000 mg/kg
Chloride	10000 mg/kg

NMOCD Siting Criteria data was gathered from available resources including Bureau of Land Management (BLM) shapefiles; topographic maps; NMOSE and USGS databases; and aerial imagery. The results are depicted on Figures 1 & 2. Depth to groundwater information is provided as Attachment #4. A Photographic Log is provided as Attachment #7.

Incident ID	NCH1823355359
District RP	1RP-5167
Facility ID	30-025-02709
Application ID	pCH1823355621

INITIAL SITE ASSESSMENT

On **September 26, 2018**, upon conducting limited initial remediation activities, five (5) soil samples (SP#1 through SP#5) were collected from the base of the excavated area in an effort to determine if impacted soil affected above the NMOCD Closure Criteria remained in-situ. The collected soil samples were submitted to an NMOCD-approved laboratory for analysis of TPH and chloride. Laboratory analytical results indicated chloride and TPH concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples with the exception of soil sample SP #4 and SP #5, which exhibited TPH concentrations of 8,341 mg/kg and 3,220 mg/kg, respectively.

On **November 7, 2018**, the site was revisited in an effort to further characterize the affected area. During the site visit, fourteen (14) soil samples (SH @ Surface, SH @ 1', NH @ Surface, NH @ 1', WH1 @ Surface, WH1 @ 1', WH2 @ Surface, WH2 @ 1', EH1 @ Surface, EH1 @ 1', EH2 @ Surface, EH2 @ 1', SP4B @ 3' and SP5B @ 3') were collected and submitted to the laboratory for analysis of BTEX, TPH and chloride. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples. A table summarizing laboratory analytical results from soil samples collected during the initial site assessment is provided below:

Concentrations of BTEX, TPH and/or Chloride in Soil - Initial Assessment(s)												
Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					E300/4500Cl	
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C ₆ -C ₁₀ (mg/kg)	DRO C ₁₀ -C ₂₈ (mg/kg)	GRO + DRO C ₆ -C ₂₈ (mg/kg)	ORO C ₂₈ -C ₃₆ (mg/kg)	TPH C ₆ -C ₃₆ (mg/kg)		Chloride (mg/kg)
SP #1	9/26/18	1'	In-Situ	-	-	<10.0	505	505	131	636	464	
SP #2	9/26/18	1'	In-Situ	-	-	<10.0	270	270	38.4	308	64.0	
SP #3	9/26/18	1'	In-Situ	-	-	<10.0	<10.0	<10.0	<10.0	<10.0	1,090	
SP #4	9/26/18	1'	In-Situ	-	-	291	6,930	7,221	1,120	8,341	80.0	
SP #5	9/26/18	1'	In-Situ	-	-	<10.0	2,710	2,710	510	3,220	192	
SH @ Surf.	11/7/18	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0	
SH @ 1'	11/7/18	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0	
NH @ Surf.	11/7/18	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0	
NH @ 1'	11/7/18	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0	
WH1 @ Surf.	11/7/18	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0	
WH1 @ 1'	11/7/18	1'	In-Situ	<0.050	<0.300	<10.0	63.1	63.1	<10.0	63.1	240	
WH2 @ Surf.	11/7/18	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240	
WH2 @ 1'	11/7/18	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0	
EH1 @ Surf.	11/7/18	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0	
EH1 @ 1'	11/7/18	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0	
EH2 @ Surf.	11/7/18	Surf.	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0	
EH2 @ 1'	11/7/18	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0	
SP4B @ 3'	11/7/18	3'	In-Situ	<0.050	<0.300	<10.0	22.5	22.5	<10.0	22.5	<16.0	
SP5B @ 3'	11/7/18	3'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0	
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000	

A "Site & Sample Location Map" is provided as Attachment #3. Field Data, if applicable, is provided as Attachment #9. Soil profile observations are provided on Attachment #5. Laboratory analytical reports are provided as Attachment #6.

Incident ID	NCH1823355359
District RP	1RP-5167
Facility ID	30-025-02709
Application ID	pCH1823355621

PROPOSED REMEDIATION PLAN

Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment, Legacy Reserves Operating, LP proposes the following remediation activities designed to advance the Site toward an approved closure:

- Utilizing mechanical equipment, excavate impacted soil within the release margins in the area characterized by sample points SP#3, SP#4 and SP#5 to a depth beyond 1 ft. bgs, until laboratory analytical results from confirmation soil samples indicate concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria.
- Excavation sidewalls will be advanced horizontally until laboratory analytical results from confirmation soil samples indicate BTEX, TPH and chloride concentrations are below the NMOCD Closure Criteria.
- Areas affected by overspray will be excavated until laboratory analytical results from confirmation soil samples indicate BTEX, TPH and chloride concentrations are below the NMOCD Closure Criteria.
- Excavated soil will be temporarily stockpiled on-site, pending transportation under manifest to an NMOCD-approved disposal facility.
- Upon receiving favorable laboratory analytical results from confirmation soil samples (below the NMOCD Closure Criteria) excavated areas will be backfilled with locally sourced, non-impacted "like" material. Excavation backfill will be placed at or near original relative positions. The affected area will be contoured and/or compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable.

SAMPLING PLAN

Upon completion of excavation activities, representative five-point composite excavation confirmation soil samples will be collected from the excavation sidewalls in each cardinal direction, representing no more than **50 linear ft**. A minimum of **one (1)** representative five-point composite excavation confirmation soil sample will be collected from the base of the excavated area representing every **500 square feet**. Additional, "discrete" confirmation soil samples will be collected from wet or visibly stained areas inferred to have been affected by the release, as necessary.

TIMELINE AND ESTIMATED VOLUME OF SOIL TO BE REMEDIATED

Remediation activities are expected to be completed **within 90 days** of receiving necessary approval(s) of this Site Assessment Summary and Proposed Remediation Plan. Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment it is estimated that approximately **260 cubic yards** of soil has been affected above the NMOCD Closure Criteria.

Incident ID	NCH1823355359
District RP	1RP-5167
Facility ID	30-025-02709
Application ID	pCH1823355621

RESTORATION, RECLAMATION AND RE-VEGETATION PLAN

Areas affected by remediation and closure activities will be substantially restored to the condition that existed prior to the release, to the extent practicable. Excavated areas will be backfilled with locally sourced, non-impacted "like" material placed at or near original relative positions. The affected area will be contoured and/or compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable. Affected areas not on production pads and/or lease roads will be reseeded with an agency and/or landowner-approved seed mixture during the first favorable growing season following closure of the site.

If you have any questions, or need any additional information, please feel free to contact Brian Cunningham or the undersigned by phone or email.

Respectfully,



Joel W. Lowry
Environmental Professional
Lowry Environmental & Associates, LLC

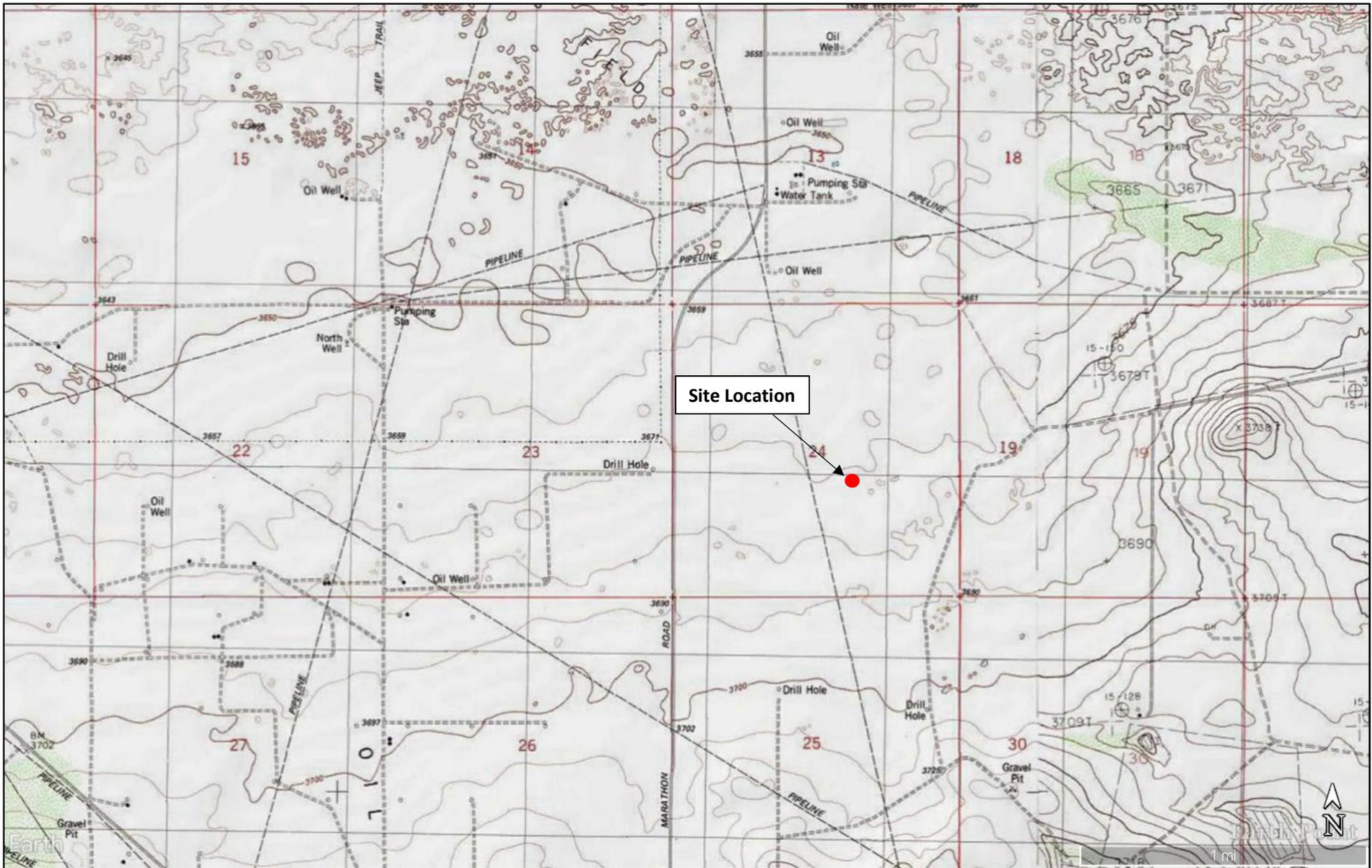
Attachments: Attachment #1- Figure 1 - Topographic Map
Attachment #2- Figure 2 - Aerial Map
Attachment #3- Figure 3 - Site & Sample Location Map
Attachment #4- Depth to Groundwater Information
Attachment #5- Soil Profile
Attachment #6- Laboratory Analytical Reports
Attachment #7- Photographic Log
Attachment #8- Release Notification (FORM C-141)
Attachment #9- Field Data

LIMITATIONS

This document has been prepared on behalf of Legacy Reserves Operating, LP. Use of information contained in this report, including exhibits and attachments, by any other party without the consent of LEA and/or Legacy Reserves Operating, LP is prohibited.

This document has been prepared in a professional manner, using the degree of skill and care exercised by similar environmental professionals. LEA notes that the facts and conditions referenced in this document may change over time and that the conclusions and recommendations are only applicable to the facts and conditions as described at the time this document was prepared.

LEA has prepared this report to the best of its ability. No other warranty, expressed or implied, is made or intended.



Site Location

LEGEND:

● Site Location

Figure 1

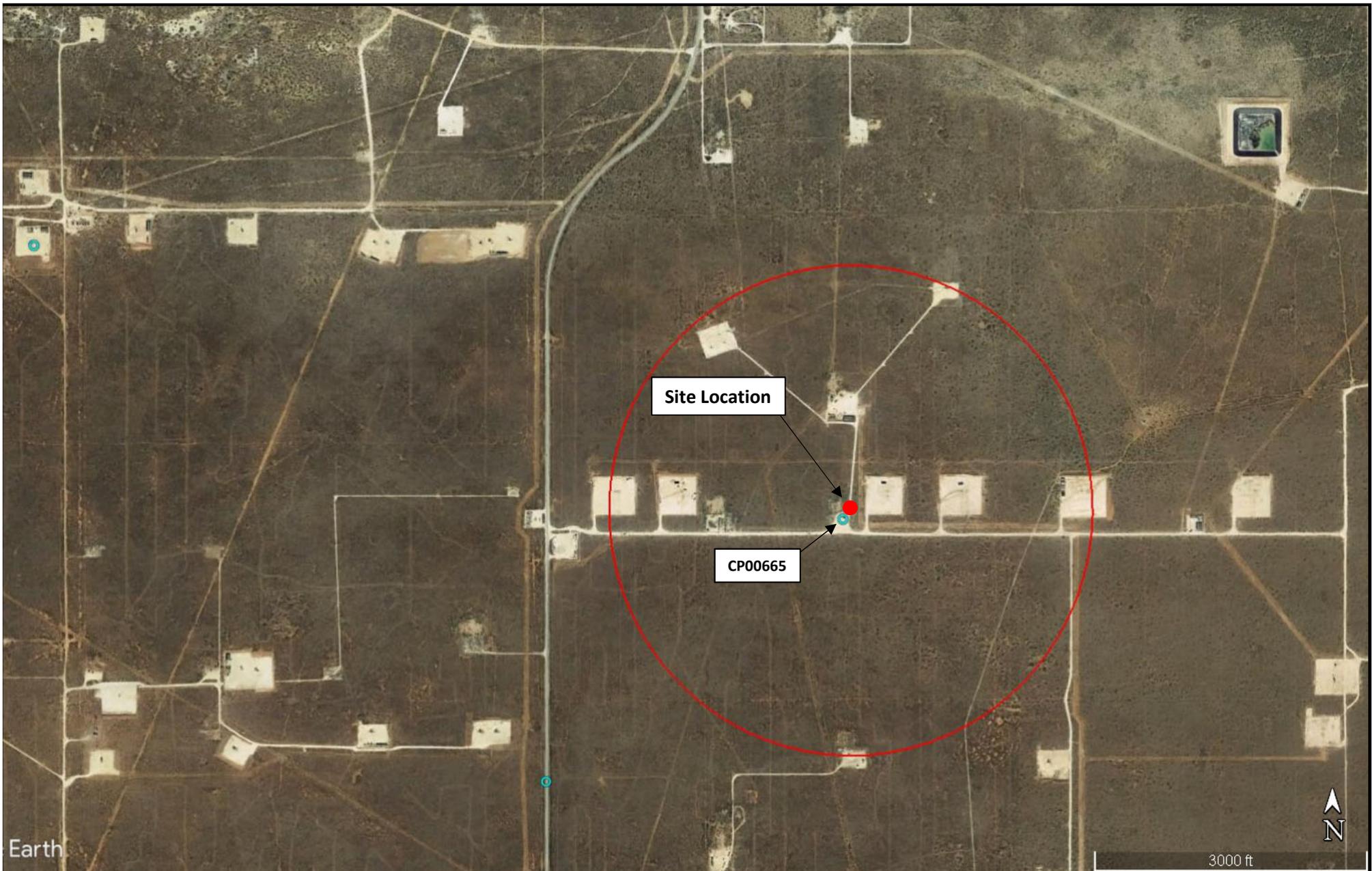
Topographic Map
 Legacy Reserves Operating, LP
 Lea Unit South Battery
 GPS: 32.55722, -103.50805
 Lea County, New Mexico



Drafted by: jwl

Checked by: client

Date: 11/6/2018



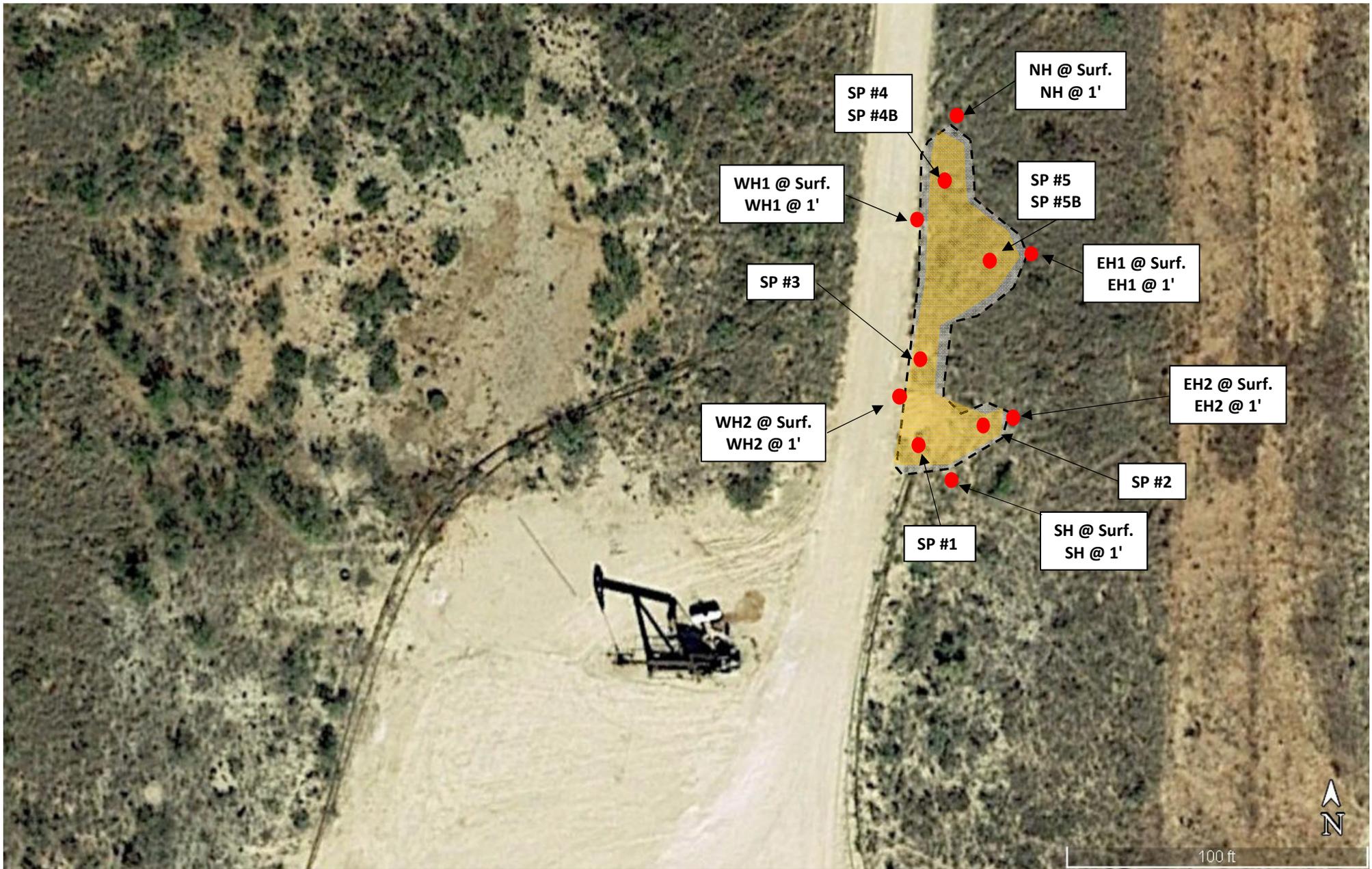
LEGEND:

	Site Location		Non-Industrial Building
	Fresh Water Well		Subsurface Mine
	100-Year Floodplain		1/2 Mile Radius
	High/Critical Karst		

Figure 2
 Aerial Map
 Legacy Reserves Operating, LP
 Lea Unit South Battery
 GPS: 32.55722, -103.50805
 Lea County, New Mexico

LOWRY 
 environmental

Drafted by: jwl Checked by: client Date: 12/6/2018



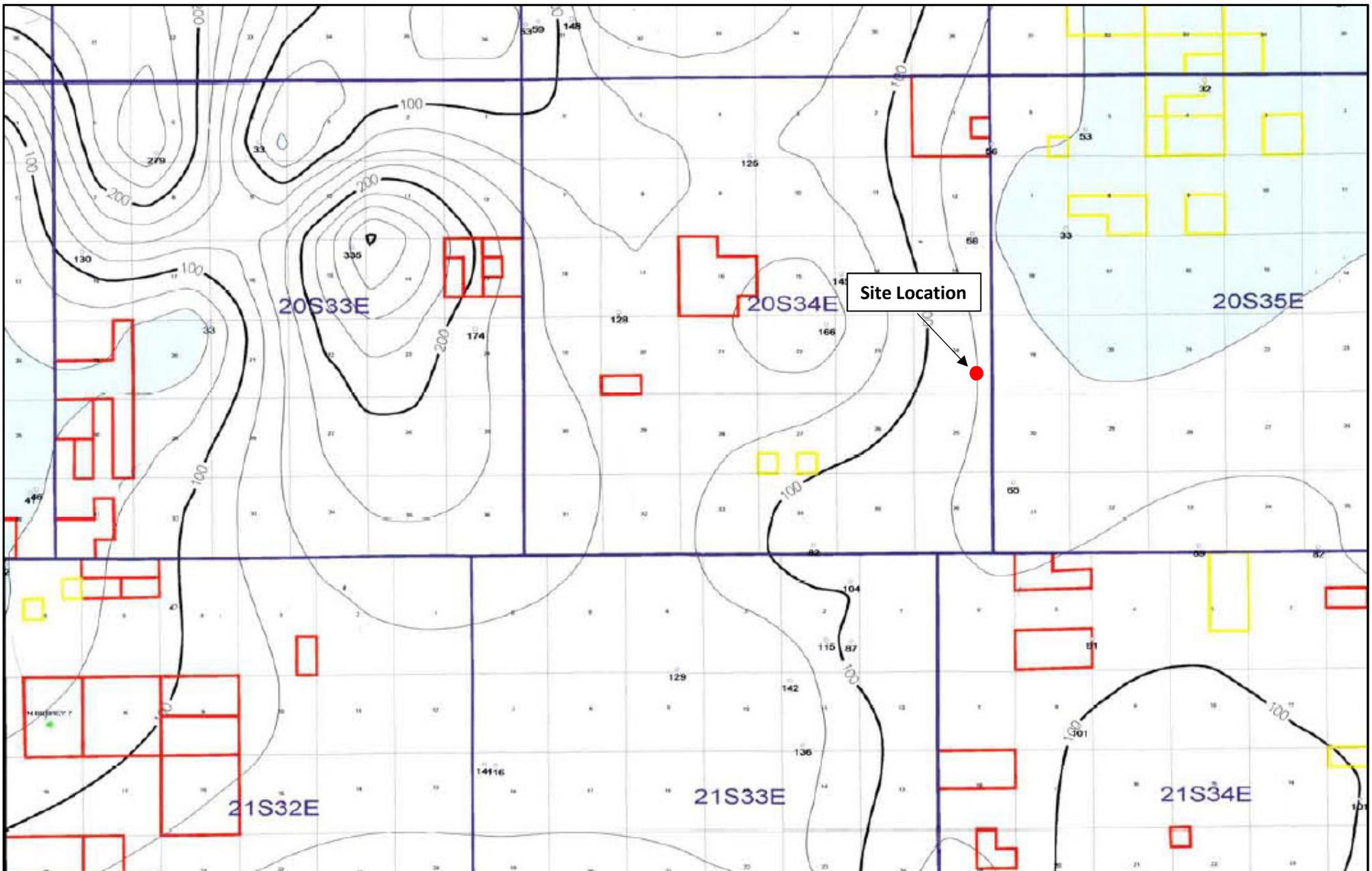
LEGEND:

	Sample Location
	Affected Area
	Excavated Area

Figure 3
 Site & Sample Location Map
 Legacy Reserves Operating, LP
 Lea Unit South Battery
 GPS: 32.55722, -103.50805
 Lea County, New Mexico


 LOWRY
 environmental

Drafted by: jwl Checked by: client Date: 12/6/2018

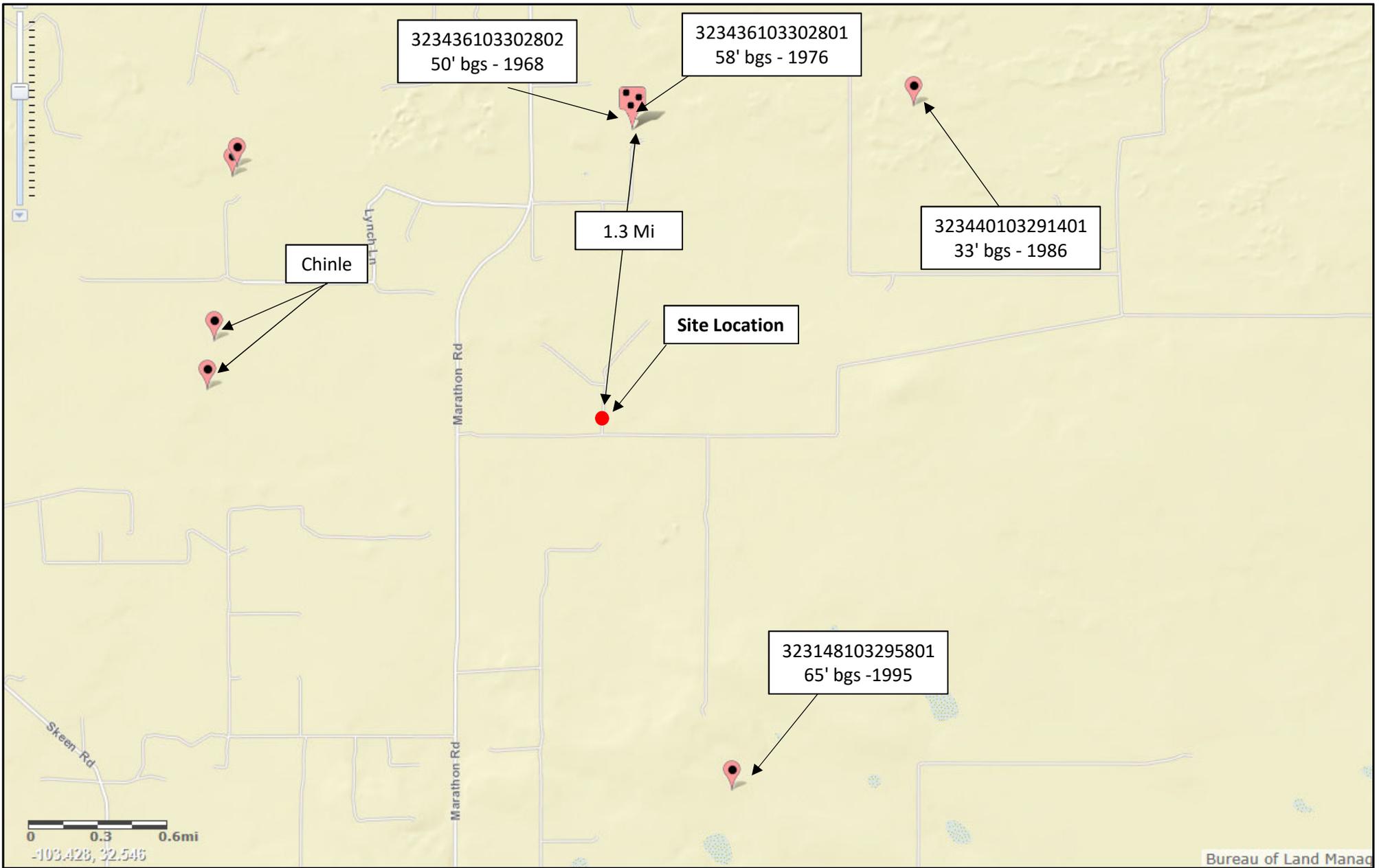


LEGEND:
 ● Site Location

Figure 4
 Inferred Depth to Groundwater Trend Map
 Legacy Reserves Operating, LP
 Lea Unit South Battery
 GPS: 32.55722, -103.50805
 Lea County, New Mexico

LOWRY 
 environmental

Drafted by: jwl Checked by: client Date: 12/6/2018



LEGEND:

● Site Location

Figure 5
 USGS Well Proximity Map
 Legacy Reserves Operating, LP
 Lea Unit South Battery
 GPS: 32.55722, -103.50805
 Lea County, New Mexico

LOWRY environmental

Drafted by: jwl Checked by: client Date: 12/6/2018



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	Q	Q	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
CP 00665	CP	LE		1	4	24	20S	34E		639740	3603128*	37	698	270	428
CP 01204 POD1	CP	LE		3	1	1	25	20S	34E	638755	3602250	1355	370		

Average Depth to Water: **270 feet**
 Minimum Depth: **270 feet**
 Maximum Depth: **270 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 639761.1

Northing (Y): 3603158.9

Radius: 1610

*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.

11/6/18 10:39 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



New Mexico Office of the State Engineer

Point of Diversion Summary

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

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	CP 00665	1	4	24	20S	34E	639740	3603128*	

Driller License: 421		Driller Company: GLENN'S WATER WELL SERVICE	
Driller Name: GLENN, CLARK A."CORKY" (LD)			
Drill Start Date: 05/25/1984	Drill Finish Date: 05/28/1984	Plug Date:	
Log File Date: 06/11/1984	PCW Rev Date:	Source: Shallow	
Pump Type:	Pipe Discharge Size:	Estimated Yield: 13 GPM	
Casing Size: 6.63	Depth Well: 698 feet	Depth Water: 270 feet	

Water Bearing Stratifications:	Top	Bottom	Description
	364	396	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	360	420

*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.

11/6/18 10:39 AM

POINT OF DIVERSION SUMMARY



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:	Geographic Area:	GO
Groundwater	United States	

Click to hideNews Bulletins

- [Please see news on new formats](#)
- **UPDATE, 11/2: The USGS continues to make progress on restoring all of its gages. As of 3 p.m. Friday, November 2, less than 3 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS will continue to work through the weekend to bring the streamgages back online. Read [more](#)**
- [Full News](#) 

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =
• 323440103291401

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 323440103291401 20S.35E.07.44420

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°34'40", Longitude 103°29'14" NAD27

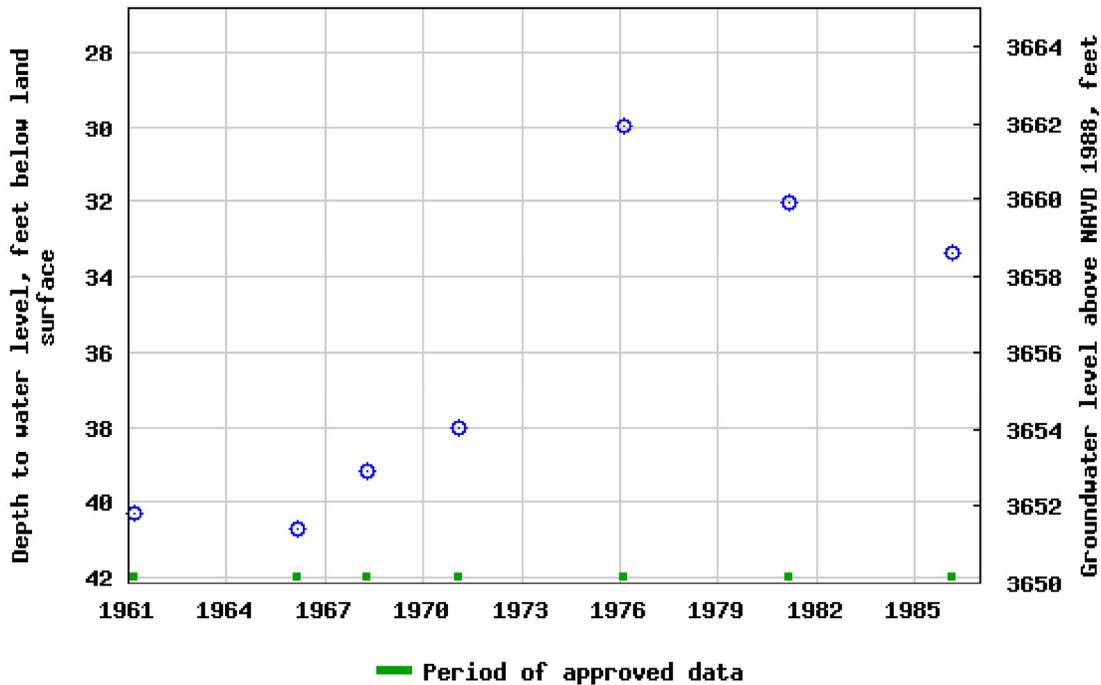
Land-surface elevation 3,692 feet above NAVD88

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data

USGS 323440103291401 20S,35E,07,44420



Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

[Accessibility](#)

[Plug-Ins](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2018-11-06 12:16:37 EST

1.12 1.01 nadww01



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:	Geographic Area:	GO
Groundwater	United States	

Click to hideNews Bulletins

- [Please see news on new formats](#)
- **UPDATE, 11/2: The USGS continues to make progress on restoring all of its gages. As of 3 p.m. Friday, November 2, less than 3 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS will continue to work through the weekend to bring the streamgages back online. Read [more](#)**
- [Full News](#) 

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 323148103295801

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 323148103295801 20S.35E.31.12311

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°32'06", Longitude 103°30'03" NAD27

Land-surface elevation 3,729.00 feet above NGVD29

The depth of the well is 85 feet below land surface.

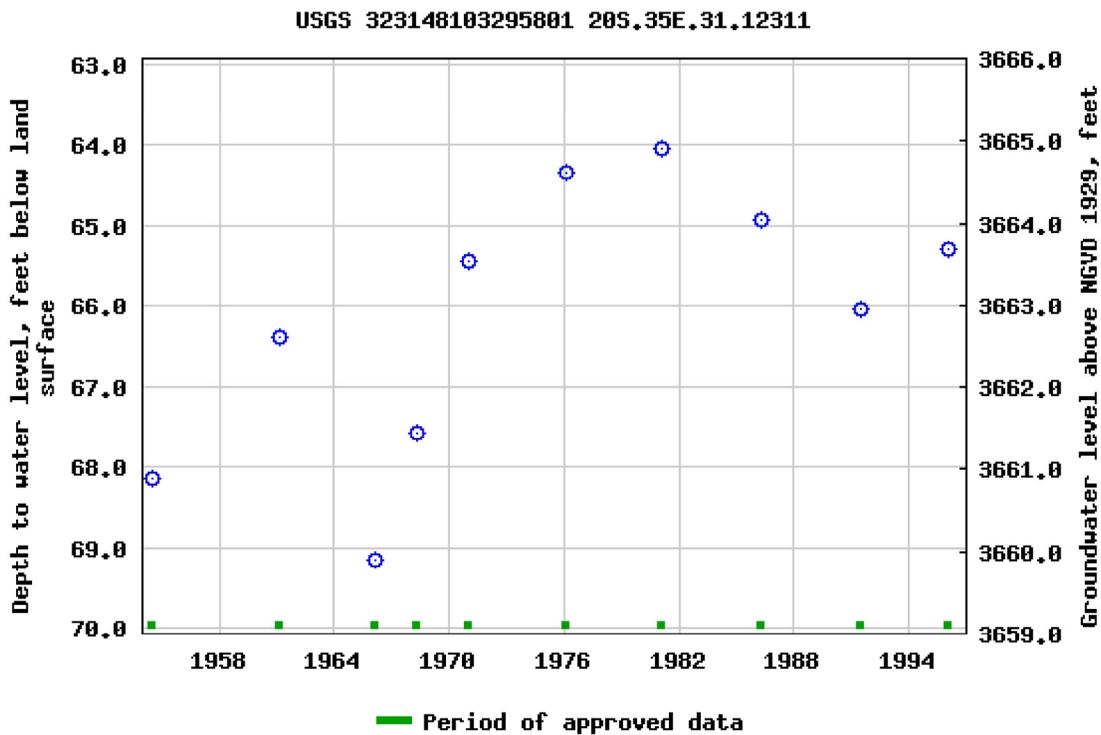
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data

[Graph of data](#)

[Reselect period](#)



Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

[Accessibility](#)

[Plug-Ins](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2018-11-06 12:17:42 EST

1.07 0.94 nadww01



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:	Geographic Area:	GO
Groundwater	United States	

Click to hide News Bulletins

- [Please see news on new formats](#)
- **UPDATE, 11/2: The USGS continues to make progress on restoring all of its gages. As of 3 p.m. Friday, November 2, less than 3 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS will continue to work through the weekend to bring the streamgages back online. Read [more](#)**
- [Full News](#) 

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =
• 323436103302801

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 323436103302801 20S.34E.12.44333

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°34'36", Longitude 103°30'28" NAD27

Land-surface elevation 3,660 feet above NAVD88

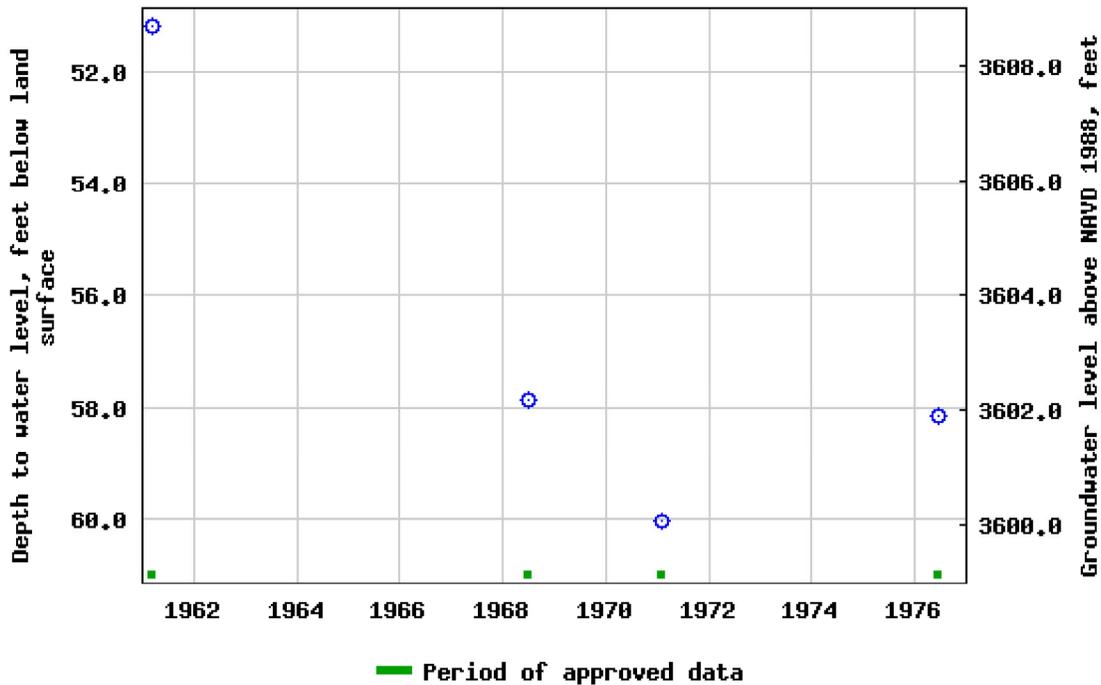
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data

[Reselect period](#)

USGS 323436103302801 20S,34E,12,44333



Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

[Accessibility](#)

[Plug-Ins](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2018-11-06 12:18:56 EST

1.05 0.91 nadww01



USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:	Geographic Area:	GO
Groundwater	United States	

Click to hideNews Bulletins

- [Please see news on new formats](#)
- **UPDATE, 11/2: The USGS continues to make progress on restoring all of its gages. As of 3 p.m. Friday, November 2, less than 3 percent of USGS streamgages are still not transmitting due to an issue with the telemetry system that records and transmits streamgage data. The USGS will continue to work through the weekend to bring the streamgages back online. Read [more](#)**
- [Full News](#) 

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 323436103302802

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 323436103302802 20S.34E.12.443

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13060011

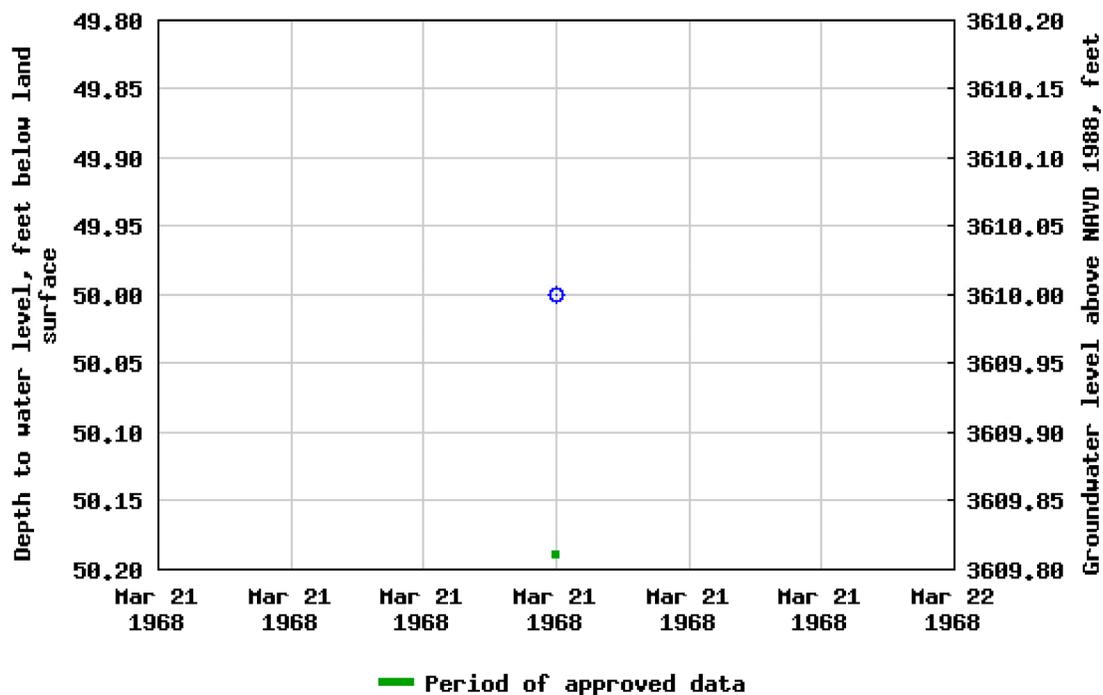
Latitude 32°34'36", Longitude 103°30'28" NAD27

Land-surface elevation 3,660 feet above NAVD88

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

USGS 323436103302802 20S,34E,12,443



Breaks in the plot represent a gap of at least one year between field measurements.

[Download a presentation-quality graph](#)

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

[Subscribe for system changes](#)

[News](#)

[Accessibility](#)

[Plug-Ins](#)

[FOIA](#)

[Privacy](#)

[Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2018-11-06 12:20:13 EST

0.99 0.89 nadww01

SOIL PROFILE

Site Name: Lea South Battery

Date: 11/7/2018

Description	Depth (ft. bgs)
Brown soil w/ rock	1
	2
	3
	4
	5
	6
	7
	8
	9
	0
	1
	2
	3
	4
	5
	6
	7
	8
	9
	0
	1
	2
	3
	4
	5
	6
	7
	8
	9
	0
	1
	2
	3
	4
	5
	6
	7
	8
	9
	0



TD



September 28, 2018

STEVE TAYLOR
CAPROCK SERVICES
P.O. BOX 457
LOVINGTON, NM 88260

RE: LEA BATTERY SOUTH

Enclosed are the results of analyses for samples received by the laboratory on 09/26/18 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,

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

Celey D. Keene
Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	09/26/2018	Sampling Date:	09/26/2018
Reported:	09/28/2018	Sampling Type:	Soil
Project Name:	LEA BATTERY SOUTH	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP #1 (H802713-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	464	16.0	09/26/2018	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/27/2018	ND	195	97.6	200	0.158	
DRO >C10-C28*	505	10.0	09/27/2018	ND	182	90.8	200	1.35	
EXT DRO >C28-C36	131	10.0	09/27/2018	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142
 Surrogate: 1-Chlorooctadecane 111 % 37.6-147

Sample ID: SP #2 (H802713-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	09/26/2018	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/27/2018	ND	195	97.6	200	0.158	
DRO >C10-C28*	270	10.0	09/27/2018	ND	182	90.8	200	1.35	
EXT DRO >C28-C36	38.4	10.0	09/27/2018	ND					

Surrogate: 1-Chlorooctane 91.2 % 41-142
 Surrogate: 1-Chlorooctadecane 100 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	09/26/2018	Sampling Date:	09/26/2018
Reported:	09/28/2018	Sampling Type:	Soil
Project Name:	LEA BATTERY SOUTH	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP #3 (H802713-03)

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1090	16.0	09/26/2018	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/27/2018	ND	195	97.6	200	0.158	
DRO >C10-C28*	<10.0	10.0	09/27/2018	ND	182	90.8	200	1.35	
EXT DRO >C28-C36	<10.0	10.0	09/27/2018	ND					
<i>Surrogate: 1-Chlorooctane</i>	<i>90.9 %</i>	<i>41-142</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>89.7 %</i>	<i>37.6-147</i>							

Sample ID: SP #4 (H802713-04)

Chloride, SM4500CI-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	09/26/2018	ND	416	104	400	3.77		
TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	291	10.0	09/27/2018	ND	195	97.6	200	0.158		
DRO >C10-C28*	6930	10.0	09/27/2018	ND	182	90.8	200	1.35		
EXT DRO >C28-C36	1120	10.0	09/27/2018	ND						
<i>Surrogate: 1-Chlorooctane</i>	<i>144 %</i>	<i>41-142</i>								
<i>Surrogate: 1-Chlorooctadecane</i>	<i>305 %</i>	<i>37.6-147</i>								

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 09/26/2018
 Reported: 09/28/2018
 Project Name: LEA BATTERY SOUTH
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

 Sampling Date: 09/26/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP #5 (H802713-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	192	16.0	09/26/2018	ND	416	104	400	3.77	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	09/27/2018	ND	195	97.6	200	0.158	
DRO >C10-C28*	2710	10.0	09/27/2018	ND	182	90.8	200	1.35	
EXT DRO >C28-C36	510	10.0	09/27/2018	ND					
<i>Surrogate: 1-Chlorooctane</i>	95.2 %	41-142							
<i>Surrogate: 1-Chlorooctadecane</i>	191 %	37.6-147							

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM450Cl-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



Celey D. Keene, Lab Director/Quality Manager



November 14, 2018

STEVE TAYLOR

CAPROCK SERVICES

P.O. BOX 457

LOVINGTON, NM 88260

RE: LEA UNIT SOUTH

Enclosed are the results of analyses for samples received by the laboratory on 11/08/18 11:18.

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 "Celey D. Keene". The signature is written in a cursive style.

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: SH @ SURFACE (H803230-01)

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	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	48.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142
Surrogate: 1-Chlorooctadecane 81.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: SH @ 1' (H803230-02)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	32.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 95.2 % 41-142

Surrogate: 1-Chlorooctadecane 87.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 11/08/2018
 Reported: 11/14/2018
 Project Name: LEA UNIT SOUTH
 Project Number: NONE GIVEN
 Project Location: LEGACY - MONUMENT NM

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: NH @ SURFACE (H803230-03)

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	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	32.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 96.4 % 41-142

Surrogate: 1-Chlorooctadecane 86.3 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: NH @ 1' (H803230-04)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 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	48.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 88.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 11/08/2018
 Reported: 11/14/2018
 Project Name: LEA UNIT SOUTH
 Project Number: NONE GIVEN
 Project Location: LEGACY - MONUMENT NM

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: WH 1 @ SURFACE (H803230-05)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	80.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 99.6 % 41-142

Surrogate: 1-Chlorooctadecane 87.8 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 11/08/2018
 Reported: 11/14/2018
 Project Name: LEA UNIT SOUTH
 Project Number: NONE GIVEN
 Project Location: LEGACY - MONUMENT NM

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: WH 1 @ 1' (H803230-06)

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	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 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	240	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	63.1	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: WH 2 @ SURFACE (H803230-07)

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	11/14/2018	ND	2.48	124	2.00	1.94		
Toluene*	<0.050	0.050	11/14/2018	ND	2.41	120	2.00	1.28		
Ethylbenzene*	<0.050	0.050	11/14/2018	ND	2.35	118	2.00	2.21		
Total Xylenes*	<0.150	0.150	11/14/2018	ND	7.33	122	6.00	1.96		
Total BTEX	<0.300	0.300	11/14/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 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	240	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06		
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36		
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND						

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 93.0 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 11/08/2018
 Reported: 11/14/2018
 Project Name: LEA UNIT SOUTH
 Project Number: NONE GIVEN
 Project Location: LEGACY - MONUMENT NM

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: WH 2 @ 1' (H803230-08)

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	11/14/2018	ND	2.48	124	2.00	1.94	
Toluene*	<0.050	0.050	11/14/2018	ND	2.41	120	2.00	1.28	
Ethylbenzene*	<0.050	0.050	11/14/2018	ND	2.35	118	2.00	2.21	
Total Xylenes*	<0.150	0.150	11/14/2018	ND	7.33	122	6.00	1.96	
Total BTEX	<0.300	0.300	11/14/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 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	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 97.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: EH 1 @ SURFACE (H803230-09)

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	11/13/2018	ND	2.24	112	2.00	5.73	
Toluene*	<0.050	0.050	11/13/2018	ND	2.28	114	2.00	5.98	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.23	112	2.00	5.81	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.57	110	6.00	6.22	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	32.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 99.2 % 41-142

Surrogate: 1-Chlorooctadecane 85.6 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: EH 1 @ 1' (H803230-10)

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	11/13/2018	ND	2.24	112	2.00	5.73	
Toluene*	<0.050	0.050	11/13/2018	ND	2.28	114	2.00	5.98	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.23	112	2.00	5.81	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.57	110	6.00	6.22	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 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	32.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 96.2 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: EH 2 @ SURFACE (H803230-11)

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	11/13/2018	ND	2.24	112	2.00	5.73	
Toluene*	<0.050	0.050	11/13/2018	ND	2.28	114	2.00	5.98	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.23	112	2.00	5.81	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.57	110	6.00	6.22	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	32.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 98.7 % 41-142

Surrogate: 1-Chlorooctadecane 86.2 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

Received:	11/08/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	LEA UNIT SOUTH	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEGACY - MONUMENT NM		

Sample ID: EH 2 @ 1' (H803230-12)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.24	112	2.00	5.73	
Toluene*	<0.050	0.050	11/13/2018	ND	2.28	114	2.00	5.98	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.23	112	2.00	5.81	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.57	110	6.00	6.22	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 92.4 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 11/08/2018
 Reported: 11/14/2018
 Project Name: LEA UNIT SOUTH
 Project Number: NONE GIVEN
 Project Location: LEGACY - MONUMENT NM

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 4 B @ 3' (H803230-13)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.24	112	2.00	5.73	
Toluene*	<0.050	0.050	11/13/2018	ND	2.28	114	2.00	5.98	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.23	112	2.00	5.81	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.57	110	6.00	6.22	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	22.5	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 94.8 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 CAPROCK SERVICES
 STEVE TAYLOR
 P.O. BOX 457
 LOVINGTON NM, 88260
 Fax To:

 Received: 11/08/2018
 Reported: 11/14/2018
 Project Name: LEA UNIT SOUTH
 Project Number: NONE GIVEN
 Project Location: LEGACY - MONUMENT NM

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: ** (See Notes)
 Sample Received By: Tamara Oldaker

Sample ID: SP 5 B @ 3' (H803230-14)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.24	112	2.00	5.73	
Toluene*	<0.050	0.050	11/13/2018	ND	2.28	114	2.00	5.98	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.23	112	2.00	5.81	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.57	110	6.00	6.22	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	32.0	16.0	11/14/2018	ND	416	104	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	11/09/2018	ND	208	104	200	7.06	
DRO >C10-C28*	<10.0	10.0	11/09/2018	ND	209	105	200	2.36	
EXT DRO >C28-C36	<10.0	10.0	11/09/2018	ND					

Surrogate: 1-Chlorooctane 105 % 41-142

Surrogate: 1-Chlorooctadecane 87.5 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

- BS1 Blank spike recovery above laboratory acceptance criteria. Results for analyte potentially biased high.
- 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

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: Caprock Services
 Project Manager: Steve Taylor
 Address: Lovington State: NM Zip: 88260
 City: Lovington State: NM Zip: 88260
 Phone #: (575) 764-9718 Fax #:
 Project #: Project Owner: Legacy
 Project Name: Lea Unit South
 Project Location: Management, um
 Sampler Name: Matt Taylor
 P.O. #:
 Company: Caprock Services
 Address: Steve Taylor PO Box 457
 City: Lovington
 State: NM Zip: 88260
 Phone #: (575) 764-2718
 Fax #:
 MATRIX: SOIL, OIL, SLUDGE, OTHER:
 PRESERV: ICE / COOL, OTHER:
 DATE: 11-7-18
 TIME: 8:00 AM

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	BTEX	TPH	CI
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:					
A803230	1 SH @ Surface	G	1			X								
	2 SH @ 2'	G	1			X								
	3 NH @ Surface	G	1			X								
	4 NH @ 2'	G	1			X								
	5 WH 2 @ Surface	G	1			X								
	6 WH 1 @ 2'	G	1			X								
	7 WH 2 @ Surface	G	1			X								
	8 WH 2 @ 2'	G	1			X								
	9 EH 1 @ Surface	G	1			X								
	10 EH 1 @ 2'	G	1			X								

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: *[Signature]* Date: 11-7-18
 Received By: *[Signature]* Date: 11-7-18
 Delivered By: (Circle One) Sampler - UPS - Bus - Other: 8.2e #97
 Sample Condition: Cool Intact Yes No
 CHECKED BY: (Initials) *[Initials]*
 REMARKS:
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 joel@lowryenvironmental.com
 matt.caprockservices@gmail.com
 caprockservices56@gmail.com

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

PHOTOGRAPHIC LOG



Figure 1 View of portion of the excavated area, facing East.



Figure 2 View of portion of the excavated area, facing East.

PHOTOGRAPHIC LOG



Figure 3 View of portion of the excavated area, facing East.



Figure 4 View of soil excavated during initial remediation activities.

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

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

Initial Report Final Report

Name of Company Legacy Reserves	Contact Clyde Wilhoit
Address 303 W Wall street, Suite 1800, Midland Tx, 79701	Telephone No. 432.425.4137
Facility Name Lea Unit South Battery	Facility Type Flowline

Surface Owner S & S Inc.	Mineral Owner Federal	API No. 30-025-43077
--------------------------	------------------------------	-----------------------------

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	24	20-S	34-E					Lea

Latitude **32.557222** Longitude **-103.508056** NAD83

NATURE OF RELEASE

Type of Release Crude oil	Volume of Release 72 BBL	Volume Recovered 60 BBL
Source of Release Flowline	Date and Hour of Occurrence 8/18/18 5:00 AM	Date and Hour of Discovery 8/18/18 5:00AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
no

RECEIVED

By **CHernandez** at 3:03 pm, Aug 21, 2018

Describe Cause of Problem and Remedial Action Taken.*
Semi truck struck flow line. Well was shut in and line was repaired.

Describe Area Affected and Cleanup Action Taken.*
Flowline sprayed approximately 60'x150' area. Small pooling area under lines and road. Mico Blaze will be applied to vegetation and soil will be tested and remediated as soon as possible.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: <i>Clyde Wilhoit</i>	OIL CONSERVATION DIVISION	
Printed Name: <i>Clyde Wilhoit</i>	Approved by Environmental Specialist: <i>CH</i>	
Title: <i>Maintenance Foreman</i>	Approval Date: 8/21/2018	Expiration Date:
E-mail Address: <i>cwilhoit@legacyp.com</i>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <i>8-20-18</i> Phone: <i>432-425-4137</i>	NMAC 19.15.29 effective August 14, 2018. Complete release characterization before any significant remediation.	

* Attach Additional Sheets If Necessary

1RP-5167

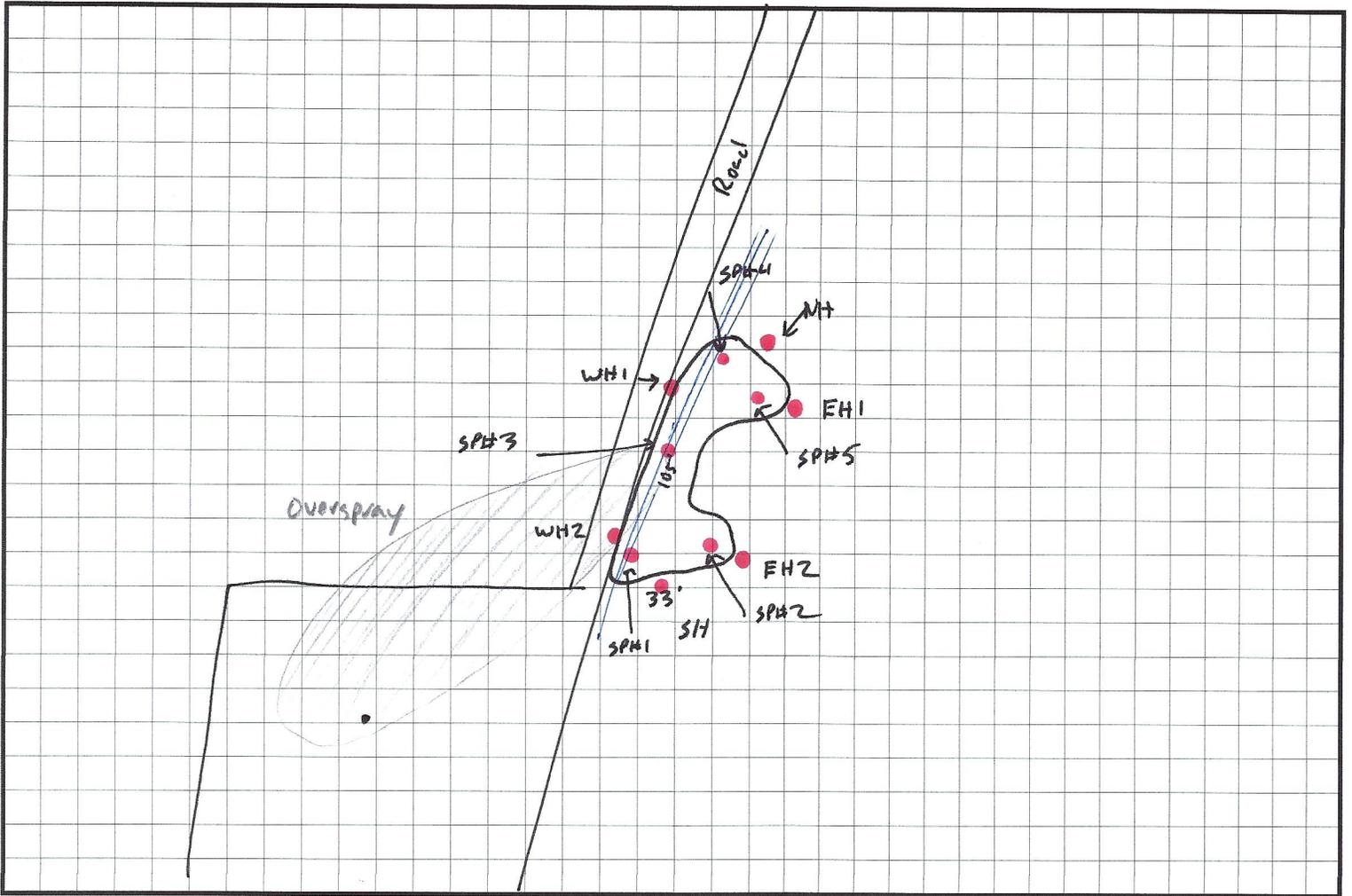
pCH1823355621

nCH1823355359

FIELD NOTES

Site Name: Lea South Battery

Date: 11/7/2018



Collect samples necessary for Workplan
 Check Microblate treatment of overspray, will require additional scraping

Field ID	Odor/PID	Chloride

Field ID	Odor/PID	Chloride

Field ID	Odor/PID	Chloride

Field ID	Odor/PID	Chloride

Field ID	Odor/PID	Chloride

Field ID	Odor/PID	Chloride