



December 6, 2018

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

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

**APPROVED**

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

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	Source of Release	Flowline
Type of Release		Crude Oil	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 <b>not</b> 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 <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (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.

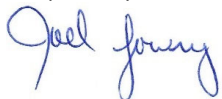
Incident ID	NCH1823355359
District RP	1RP-5167
Facility ID	30-025-02709
Application ID	pCH1823355621

## 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

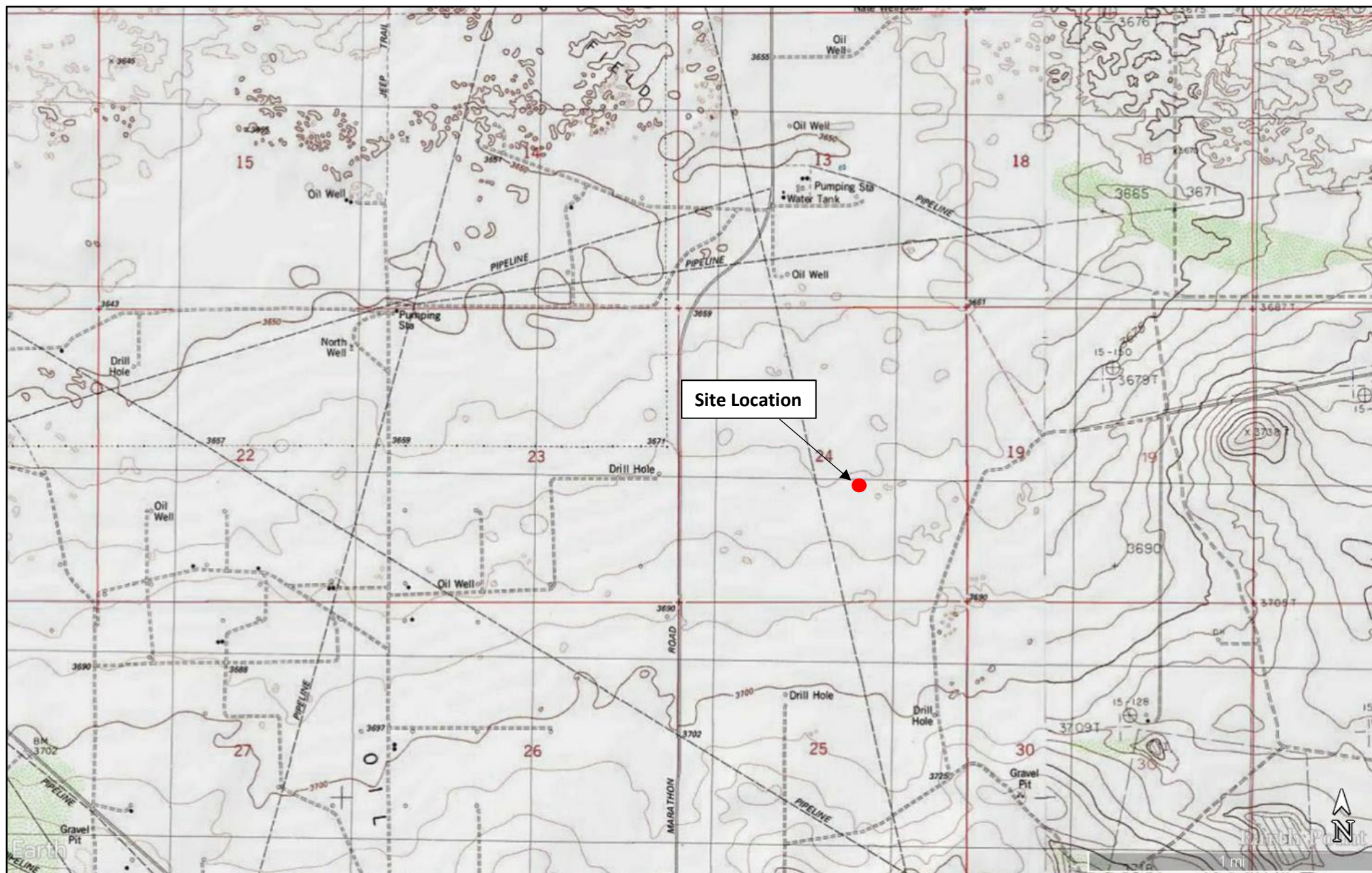
## LIMITATIONS

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.





**LEGEND:**

● Site Location

**Figure 1**

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

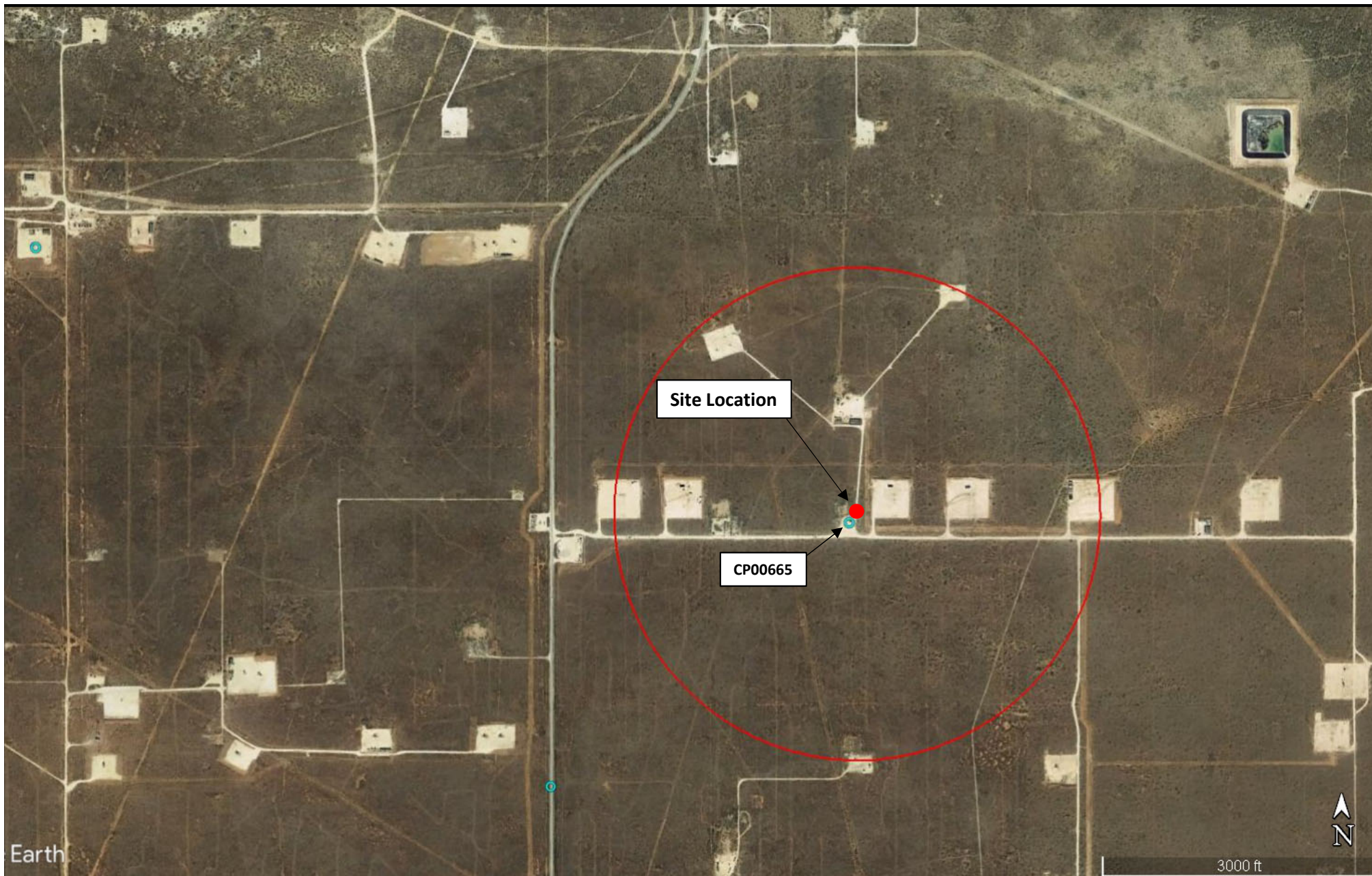


Drafted by: jwl

Checked by: client

Date: 11/6/2018





#### LEGEND:

- Site Location
- Fresh Water Well
- ⦿ 100-Year Floodplain
- High/Critical Karst

- Non-Industrial Building
- Subsurface Mine
- 1/2 Mile Radius

#### Figure 2

#### Aerial Map

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

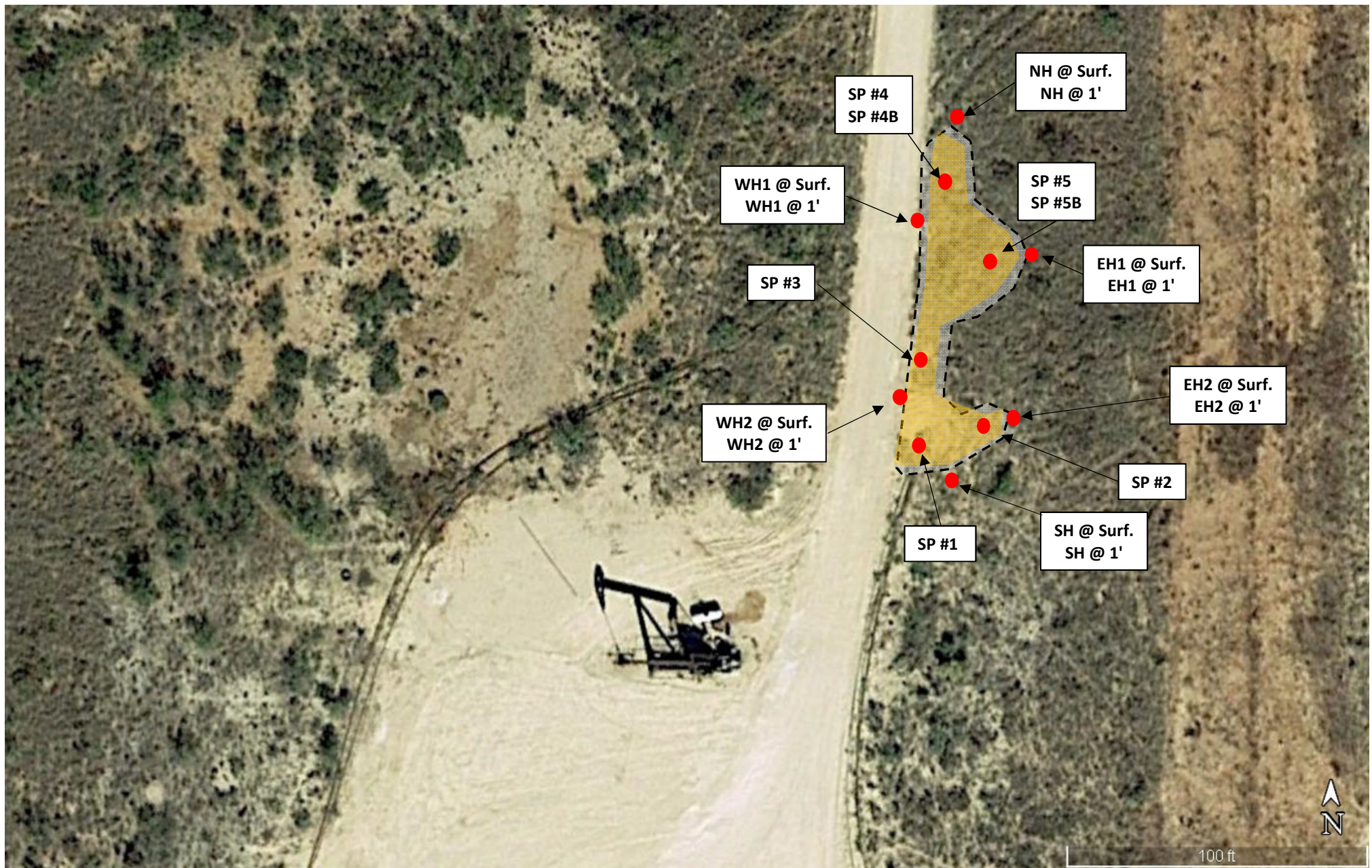


Drafted by: jwl

Checked by: client

Date: 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

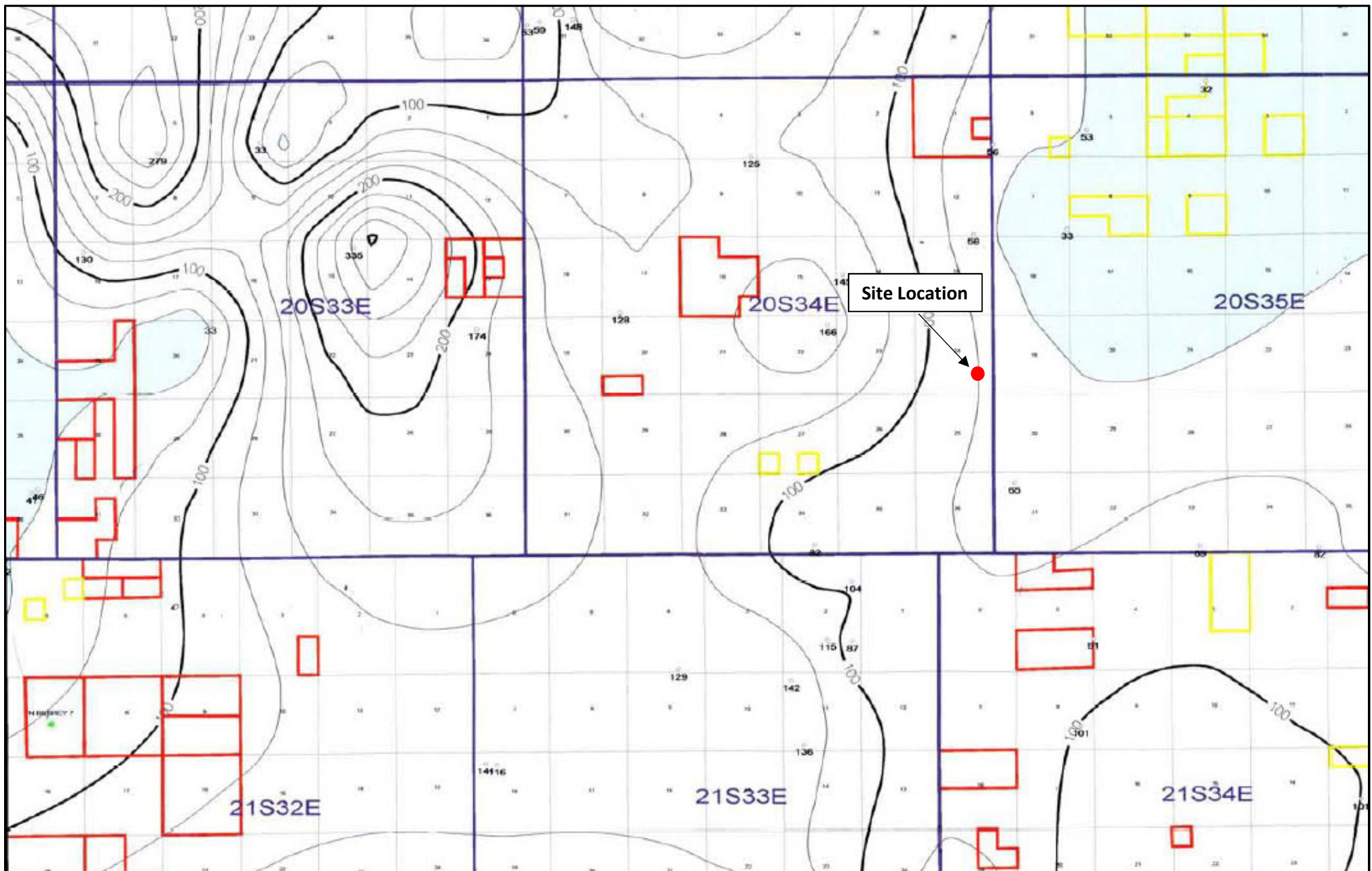


Drafted by: jwl

Checked by: client

Date: 12/6/2018





**LEGEND:**

● Site Location

**Figure 4**

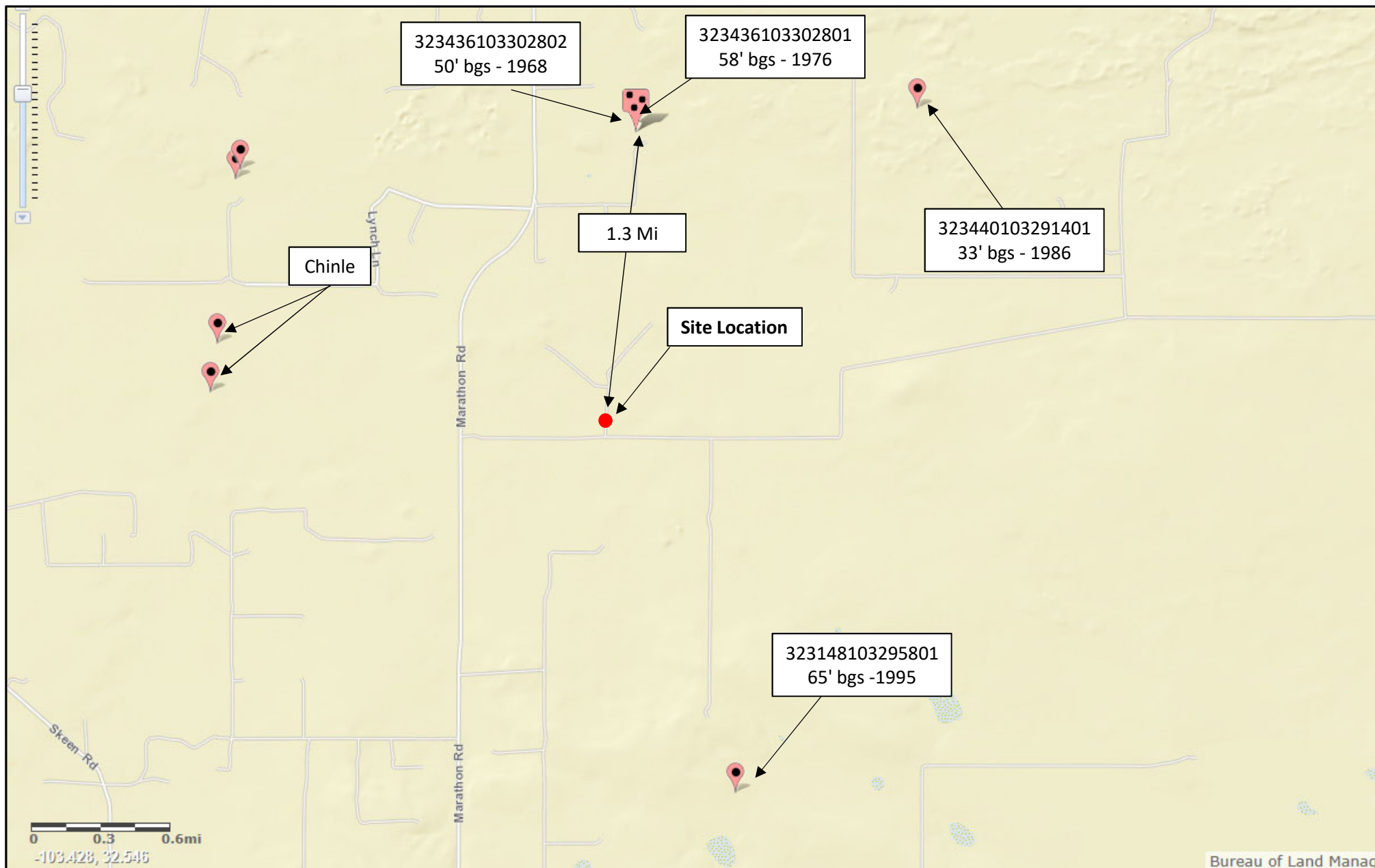
Inferred Depth to Groundwater Trend Map  
 Legacy Reserves Operating, LP  
 Lea Unit South Battery  
 GPS: 32.55722, -103.50805  
 Lea County, New Mexico



Drafted by: jwl

Checked by: client

Date: 12/6/2018



<p><b>LEGEND:</b></p> <p>● Site Location</p>
--

**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	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">CP 00665</a>		CP	LE	1	4	24	20S	34E		639740	3603128*	37	698	270	428
<a href="#">CP 01204 POD1</a>		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)					
<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
	CP 00665	1	4	24	20S	34E	639740	3603128*	
<hr/>									
<b>Driller License:</b> 421		<b>Driller Company:</b>		GLENN'S WATER WELL SERVICE					
<b>Driller Name:</b>		GLENN, CLARK A."CORKY" (LD)							
<b>Drill Start Date:</b> 05/25/1984		<b>Drill Finish Date:</b>		05/28/1984		<b>Plug Date:</b>			
<b>Log File Date:</b> 06/11/1984		<b>PCW Rev Date:</b>				<b>Source:</b> Shallow			
<b>Pump Type:</b>		<b>Pipe Discharge Size:</b>				<b>Estimated Yield:</b> 13 GPM			
<b>Casing Size:</b> 6.63		<b>Depth Well:</b>		698 feet		<b>Depth Water:</b> 270 feet			
<hr/>									
<b>Water Bearing Stratifications:</b>		<b>Top</b>	<b>Bottom</b>	<b>Description</b>					
		364	396	Sandstone/Gravel/Conglomerate					
<hr/>									
<b>Casing Perforations:</b>		<b>Top</b>	<b>Bottom</b>						
		360	420						
<hr/>									

\*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:


Groundwater

Geographic Area:

United States

GO

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

Groundwater: Field measurements

GO

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.

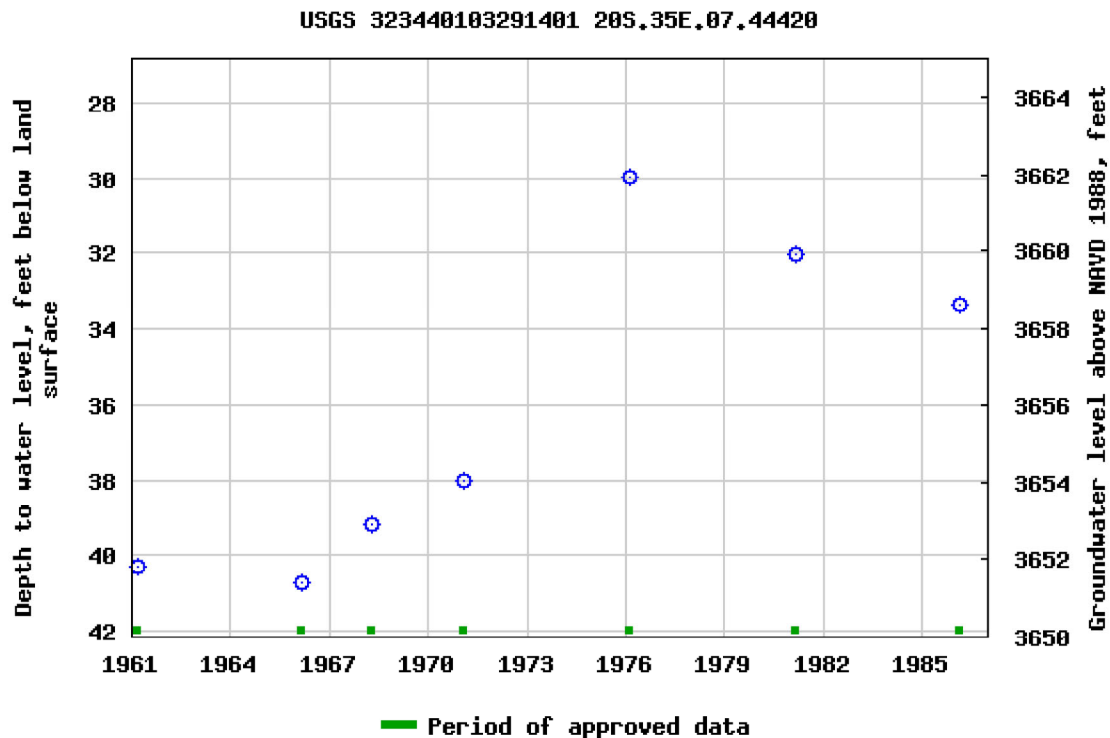
#### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[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 12:16:37 EST

1.12 1.01 nadww01





USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

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

Groundwater: Field measurements

GO

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.

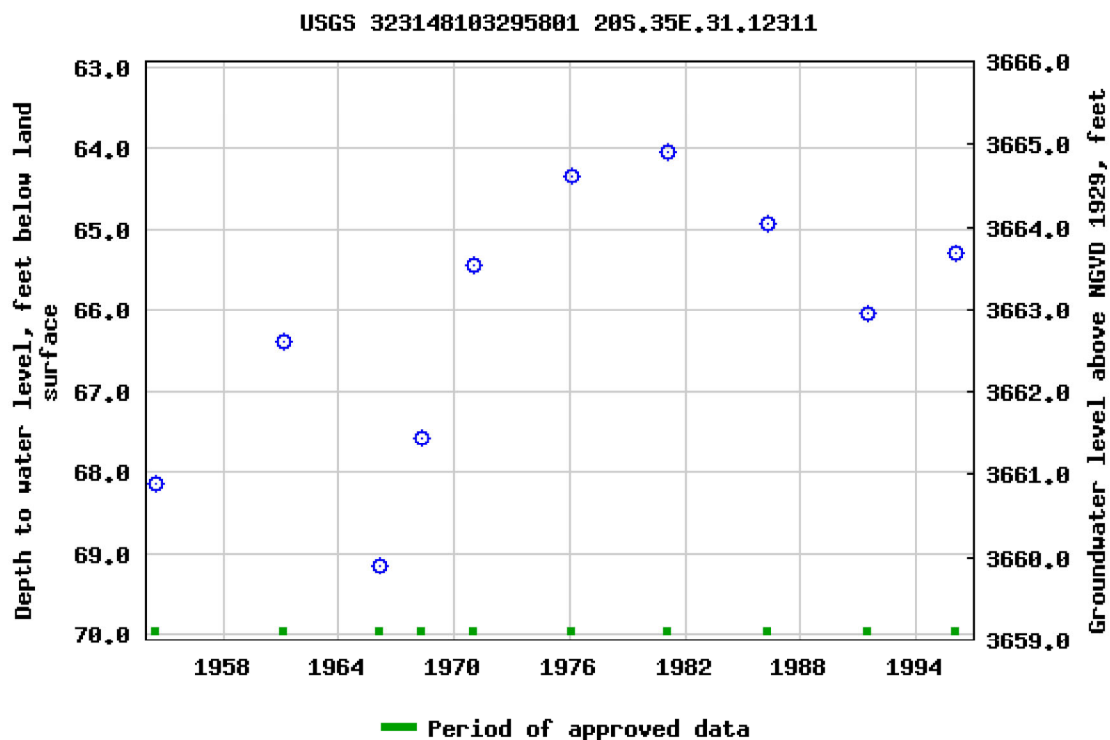
#### Output formats

[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:	
Groundwater	United States	GO

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 =

- 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

Groundwater: Field measurements	GO
---------------------------------	----

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

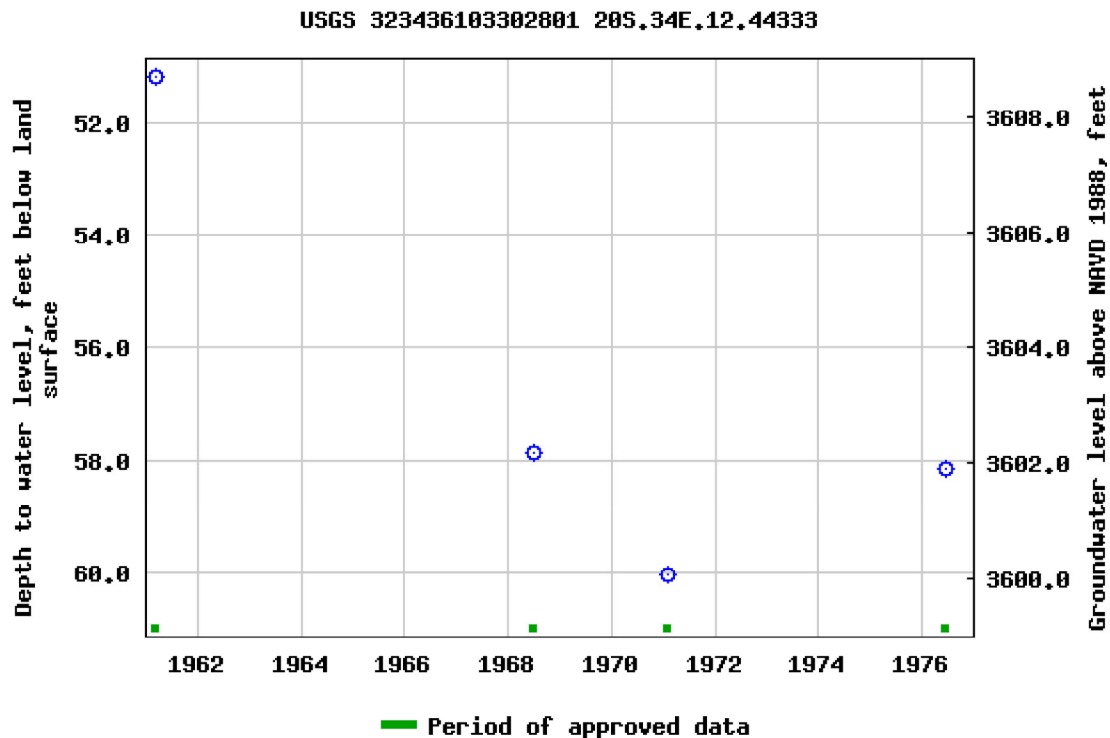
This well is completed in the Ogallala Formation (121OGLL) local aquifer.

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>



[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 12:18:56 EST

1.05 0.91 nadww01



USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

USGS Water Resources

Data Category:


Groundwater

Geographic Area:

United States

GO

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 =

- 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

Groundwater: Field measurements

GO

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

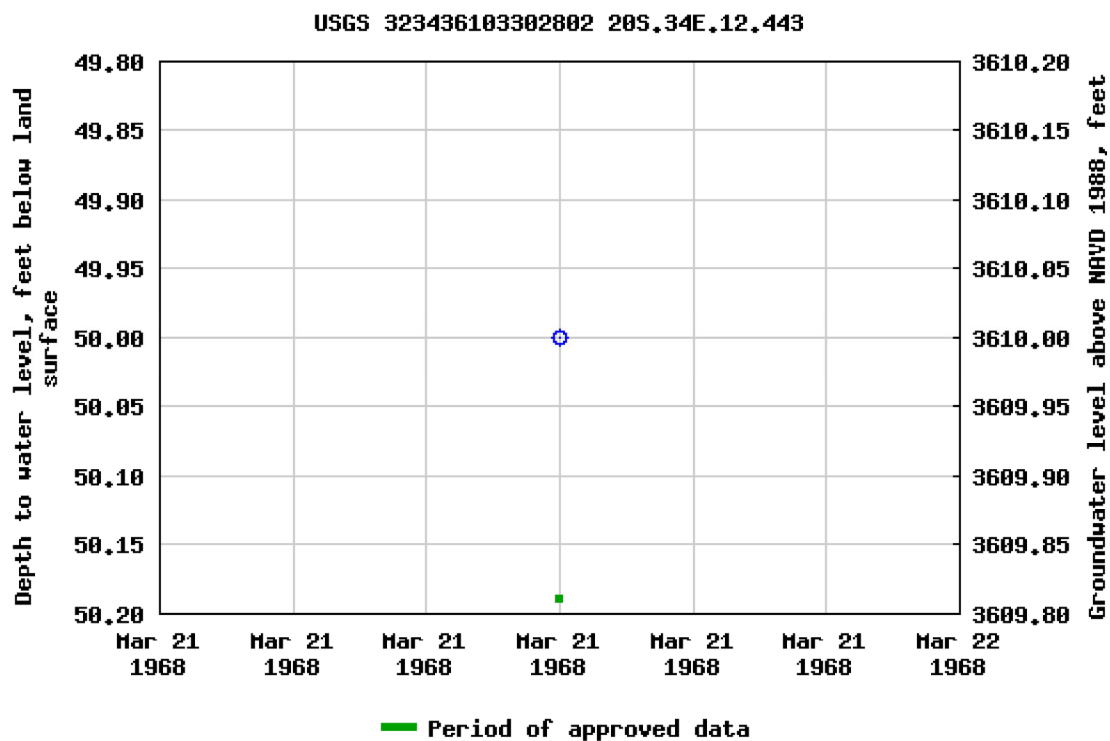
#### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)



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)
		1
		2
Brown soil w/ Rock		3
	TD	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



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

---

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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 #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
<b>Chloride</b>	<b>464</b>	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	
<b>DRO &gt;C10-C28*</b>	<b>505</b>	10.0	09/27/2018	ND	182	90.8	200	1.35	
<b>EXT DRO &gt;C28-C36</b>	<b>131</b>	10.0	09/27/2018	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	89.7 %	41-142							
<i>Surrogate: 1-Chlorooctadecane</i>									
	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
<b>Chloride</b>	<b>64.0</b>	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	
<b>DRO &gt;C10-C28*</b>	<b>270</b>	10.0	09/27/2018	ND	182	90.8	200	1.35	
<b>EXT DRO &gt;C28-C36</b>	<b>38.4</b>	10.0	09/27/2018	ND					
<i>Surrogate: 1-Chlorooctane</i>									
	91.2 %	41-142							
<i>Surrogate: 1-Chlorooctadecane</i>									
	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  
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 #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					
Surrogate: 1-Chlorooctane	90.9 %	41-142							
Surrogate: 1-Chlorooctadecane	89.7 %	37.6-147							

**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						
Surrogate: 1-Chlorooctane	144 %	41-142								
Surrogate: 1-Chlorooctadecane	305 %	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  
 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						
Surrogate: 1-Chlorooctane	95.2 %	41-142								
Surrogate: 1-Chlorooctadecane	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 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

<b>Company Name:</b> Caprock Services <b>Project Manager:</b> Steve Taylor <b>Address:</b> P.O. Box 457 <b>City:</b> Lovington <b>State:</b> NM <b>Zip:</b> 88260 <b>Phone #:</b> (575) 704-2718 <b>Fax #:</b> <b>Project #:</b> <b>Project Owner:</b> Legacy <b>Project Name:</b> Lea Battery South <b>Project Location:</b> <b>Sampler Name:</b> Steve Taylor <b>FOR LAB USE ONLY</b>				<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> Caprock Services <b>Attn:</b> Steve Taylor <b>Address:</b> P.O. Box 457 <b>City:</b> Lovington <b>State:</b> NM <b>Zip:</b> 88260 <b>Phone #:</b> (575) 704-2718 <b>Fax #:</b>				<b>ANALYSIS REQUEST</b>															
<b>Lab I.D.</b> H802713		<b>Sample I.D.</b>		(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :		MATRIX PRESERV SAMPLING		DATE TIME		Chloride TPH													
1		SP#2		X		X		9/26/18		7:20AM		X											
2		SP#2		X		X		7:10AM		X		X											
3		SP#3		X		X		7:20AM		X		X											
4		SP#4		X		X		7:30AM		X		X											
5		SP#5		X		X		7:40PM		X		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.

<b>Relinquished By:</b> [Signature]		<b>Received By:</b> [Signature]		<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b>	
<b>Date:</b> 9/26/18		<b>Date:</b> 9/26/18		<b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Fax #:</b>	
<b>Time:</b> 10:30		<b>Time:</b> 10:30		<b>REMARKS:</b> Caprock Services SL@gmail.com	

<b>Delivered By: (Circle One)</b> Sampler - UPS - Bus - Other: 5:20 / #97	<b>Sample Condition</b> Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>CHECKED BY:</b> [Signature]
--	---	-----------------------------------

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

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: 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  
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: SH @ 1' (H803230-02)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	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 BTX	<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  
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 @ 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)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	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 BTX	<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  
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 @ 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  
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: EH 1 @ SURFACE (H803230-09)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	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 BTX	<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  
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: EH 1 @ 1' (H803230-10)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	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 BTX	<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  
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: EH 2 @ SURFACE (H803230-11)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	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 BTX	<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  
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: 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)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	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 BTX	<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	
<b>DRO &gt;C10-C28*</b>	<b>22.5</b>	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)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	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 BTX	<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



---

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

Company Name: Caprock Services						P.O. #:						BILL TO						ANALYSIS REQUEST					
Project Manager: Steve Taylor						Company: Caprock Services																	
Address:						Attn:																	
City: Lovington						State: NM						Zip: 88260											
Phone #: (575) 764-9718						Fax #:						Address: Steve Taylor						PO Box 457					
Project #:						Project Owner: Legacy						City: King's Hill											
Project Name: Lea Unit South						State: NM						Zip: 88260											
Project Location: Monument Run						Phone #: (575) 764-2718																	
Sample Name: Matt Taylor						Fax #:																	
FOR LAB USE ONLY						PRESERV.						SAMPLING											
Lab I.D.						Sample I.D.																	
H803230						(G)RAB OR (C)OMP.						# CONTAINERS											
1 SH @ Surface						X						GROUNDWATER											
2 SH @ 2'						X						WASTEWATER											
3 WH @ Surface						X						SOIL											
4 WH @ 2'						X						OIL											
5 WH @ Surface						X						SLUDGE											
6 WH @ 2'						X						OTHER :											
7 WH @ Surface						X						ACID/BASE:											
8 WH @ 2'						X						ICE / COOL											
9 EH @ Surface						X						OTHER :											
10 EH @ 4'						X						DATE						TIME					
												11-7-18						8:00 AM					
												11-7-18						8:05 AM					
												11-7-18						8:10 AM					
												11-7-18						8:15 AM					
												11-7-18						8:20 AM					
												11-7-18						8:25 AM					
												11-7-18						8:30 AM					
												11-7-18						8:35 AM					
												11-7-18						8:40 AM					
												11-7-18						8:45 AM					
												11-7-18						8:50 AM					
												11-7-18						8:55 AM					
												11-7-18						9:00 AM					
												11-7-18						9:05 AM					
												11-7-18						9:10 AM					
												11-7-18						9:15 AM					
												11-7-18						9:20 AM					
												11-7-18						9:25 AM					
												11-7-18						9:30 AM					
												11-7-18						9:35 AM					
												11-7-18						9:40 AM					
												11-7-18						9:45 AM					
												11-7-18						9:50 AM					
												11-7-18						9:55 AM					
												11-7-18						10:00 AM					
												11-7-18						10:05 AM					
												11-7-18						10:10 AM					
												11-7-18						10:15 AM					
												11-7-18						10:20 AM					
												11-7-18						10:25 AM					
												11-7-18						10:30 AM					
												11-7-18						10:35 AM					
												11-7-18						10:40 AM					
												11-7-18						10:45 AM					
												11-7-18						10:50 AM					
												11-7-18						10:55 AM					
												11-7-18						11:00 AM					
												11-7-18						11:05 AM					
												11-7-18						11:10 AM					
												11-7-18						11:15 AM					
												11-7-18						11:20 AM					
												11-7-18						11:25 AM					
												11-7-18						11:30 AM					
												11-7-18						11:35 AM					
												11-7-18						11:40 AM					
												11-7-18						11:45 AM					
												11-7-18						11:50 AM					
												11-7-18						11:55 AM					
												11-7-18						12:00 PM					
												11-7-18						12:05 PM					
												11-7-18						12:10 PM					
												11-7-18						12:15 PM					
												11-7-18						12:20 PM					
												11-7-18						12:25 PM					
												11-7-18						12:30 PM					
												11-7-18						12:35 PM					
												11-7-18						12:40 PM					
												11-7-18						12:45 PM					
												11-7-18						12:50 PM					
												11-7-18						12:55 PM					
												11-7-18						1:00 PM					
												11-7-18						1:05 PM					
												11-7-18						1:10 PM					
												11-7-18						1:15 PM					
												11-7-18						1:20 PM					
												11-7-18						1:25 PM					

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

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

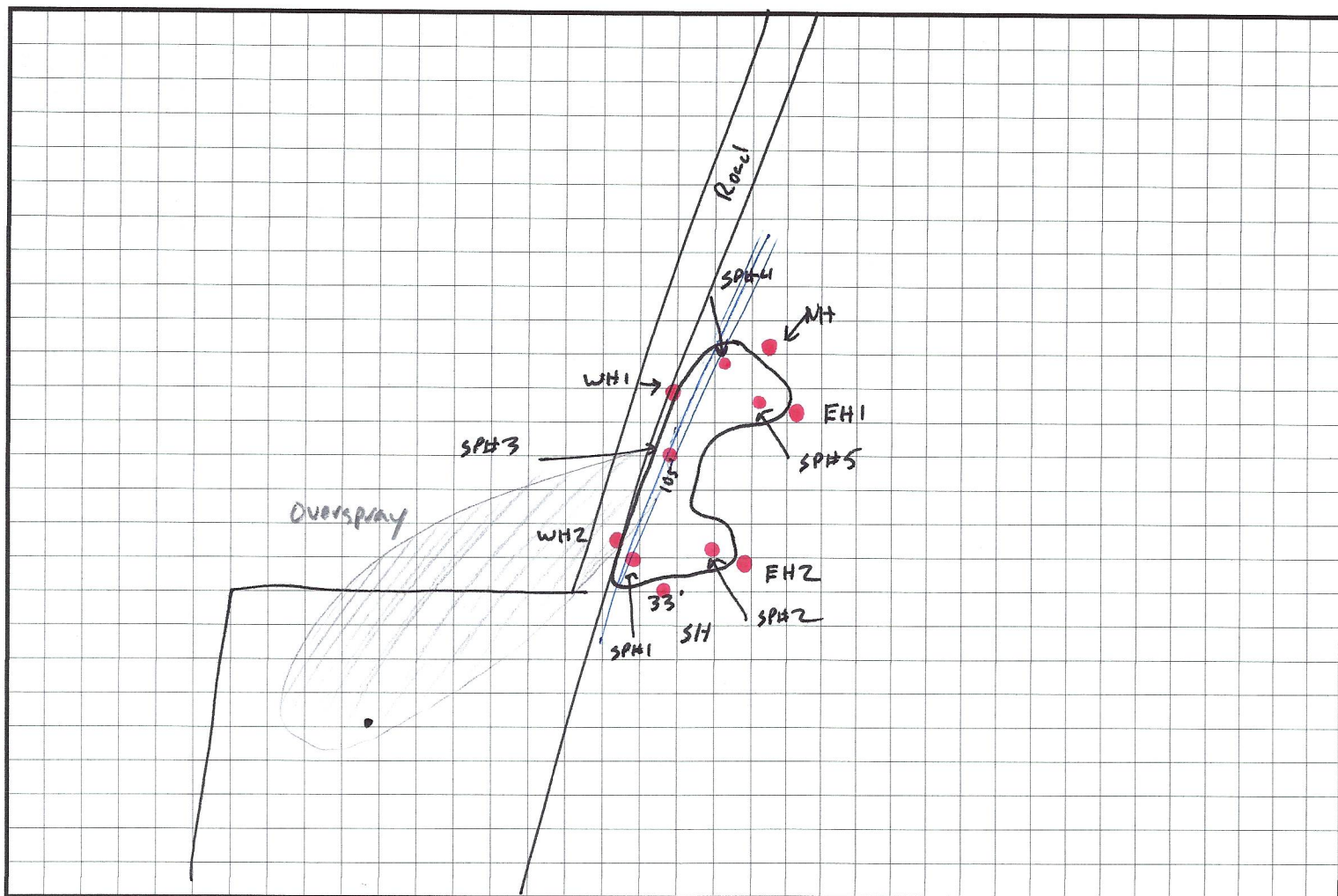
nCH1823355359



# 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