HRL COMPLIANCE SOLUTIONS
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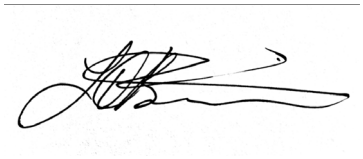
RELEASE SITE CHARACTERIZATION AND REMEDIATION CLOSURE REPORT JUNIPER 10" LINE RELEASE SECTION 3, TOWNSHIP 24S, RANGE 29E

Report Prepared for:

Lucid Energy Delaware

Prepared by:



Lori O'Brien, Project Manager

HRL Compliance Solutions

September 2019
Artesia, NM

Summary of Release

Site Name	Juniper 8”		
Location	**Lat.**	**Long.**	**Unit Letter, Section, Township, Range**
	32.248098°	**-103.972614°**	**Unit Letter F, Section 03, Township 24S, Range 29E**
District RP	2RP-5566		
Estimated Date of Release	7/15/2019		
Date Reported	7/15/2019		
Reported By	Michael Gant – Lucid Energy Group		
Reported To	NMOCD and BLM		
Surface Owner	Federal		
Cause of Release	Flow erosion on the gas pipeline resulted in a release that ignited an overhead electrical line, subsequently melting saltwater polyethylene line.		
Released Material/Volume(s)	Gas and Produced Water/1.5MMCF and 20 bbls		
Depth to Groundwater/Nearest Surface Water	~80ft bgs/Pecos River 2.1 miles SW		
Site Characterization	Three areas of investigation complete. Site investigation; over 60 soil samples field screened and 20 analyzed at the laboratory.		
Remediation Area(s)	Main = 305 sq yd; Electrical fire = 245 sq yd; Off RoW = 232 sq yd		
Confirmatory Sampling	Three excavated areas analyzed; 28 soil composite samples collected and submitted to an accredited laboratory; 8 soil samples re-assessed		
Recommendations	Request file to be closed		

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FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

HRL Compliance Solutions (HRL) was retained by Lucid Energy Delaware LLC (Lucid) to conduct a site assessment and characterization program at the Juniper Pipeline release site located within Section 3, Township 24 South, Range 29 East (Figure 1). The release was discovered on July 15, 2019 and notification was sent to New Mexico Oil Conservation Division (NM OCD; see Appendix A–C141).

In brief, the Lucid Juniper 8" gas line cracked (32°14´53.2" N, 103°58´21.4" W) which resulted in an overhead electrical line to ignite. The fire caused the pole to collapse and the heat from the fire resulted in the neighbouring EOG Resources (EOG) polyethylene water line to melt. Both the Lucid gas line and the EOG water line share the same right-of-way. The produced water extinguished the fire and continued to flow off the right-of-way following the local topography. The leading edge of the plume was mapped to a low-lying vegetative patch approximate 275 ft southeast of the release point (Figure 2). The purpose of this site assessment and characterization program was to determine the extent of the soil impacts, mitigate any potential environmental adverse effect, and develop an effective remediation program protective of identified receptors.

2.0 AREA DESCRIPTION

2.1 Regional Physiography

The Juniper pipeline is within Eddy County located in the southeastern part of New Mexico approximately 20 miles southeast of Carlsbad and 7.5 miles from Loving, NM (Figure 1). The area is within the Chihuahuan Desert ecoregion, specifically the Chihuahuan Basins and Playas. The playas and basin floors have saline or alkaline soils and areas of salt flats, dunes, and windblown sands.

The area generally showcases flat to rolling plains that gently slope towards the Pecos River. The predominant land use is grazing, irrigation agriculture, potash mining, and oil & gas development. Locally, the surrounding area consists of limited cattle grazing, a couple large potash mines, and oil & gas operations as part of the Permian Basin.

The lower elevations (i.e. <4,500 ft) of this area result in a hot and arid climate. The vegetation is typical of desert shrubs and grasses, dominated by creosote bush, tarbush, fourwing saltbush, gyp grama, and similar species that can withstand large diurnal temperature ranges, low moisture, and a high evapotranspiration rate. An area topographical map is provided on Figure 3.

2.2 Regional Geology

The site location is in the northwestern part of the Delaware Basin, at the southern boundaries of Nash Draw, a partially closed depression. The Delaware Basin has been described as a deep, oval, sedimentary basin 75 miles wide and 135 miles long. The basin lithology is made up of crystalline sedimentary rocks overlain by evaporites deposited in the late Permian Period. As seawater evaporated, the deep marine environment of limestone and dolomite transitioned to a shallower marine and eventually dry environment of gypsum, halite, anhydrite, and potassium salts. Early assessment conducted by USGS, as part of the Project Gnome site, noted several thousand feet of accumulated salt deposits on the basin floor.

The composition of the highly soluble rock within the subsurface has the potential for karst formations or features to be present in the vicinity of the area of investigation. Figure 4 presents the mapped karst areas of southeastern New Mexico in relation to the area of investigation.

2.3 Regional Hydrogeology

The Pecos River Basin alluvial aquifer consists of generally unconsolidated, poorly to moderately sorted deposits of gravel, sand, silt, and clay; as well as small amounts of gypsum and caliche formed by chemical processes. Groundwater in the Cenozoic alluvium is an important resource as the surrounding area receives an average annual rainfall of less than 12 inches (USGS Groundwater Atlas). Natural concentrations of total dissolved solids (TDS) in water in the alluvial aquifer typically exceeds 1,000 mg/L. Freshwater is defined as having a TDS concentration of <1,000 mg/L. Groundwater for the alluvial aquifer is mainly used for irrigation. Water well sustainability is variable based on the proximity to the Pecos River.

A review of the NM Office of the State Engineer (OSE) water well database presented 9 water wells within a 3-mile radius and only 5 of these wells measured water levels. Most of these wells were near the Pecos River or Salt Lake to the north. The United States Geological Survey (USGS) National Water Information System depicted water wells greater than 3 miles from location, within a 5-mile radius the water level ranged depending on the proximity to the Pecos River. Figure 5 shows the radius of water wells from the site of investigation. The corresponding water levels are in Table 1.

The closest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is the Pecos River. The Malaga Bend of the river is the closest bank to the site of investigation at a distance of 2.15 miles (Figure 3).

2.4 Local Setting

The Juniper pipeline release point is located in Section 3, Township 24S, Range 29E at an elevation of approximately 3,070 feet above sea level (Figure 2). The right of way is shared by an

EOG saltwater line. In the vicinity of the area under investigation, the native soil and subsurface material was locally shown to be highly disturbed due to the number of buried pipelines.

According to the National Resources Conservation Services Web-based Soil Survey, the soil composition is mainly of the Pajarito unit and the typical profile is loamy fine sand to 13 inches, with fine sandy loam upwards of 60 inches in areas. The parent material of this unit is mixed alluvium and/or eolian sands. The area is susceptible to severe wind erosion, drifting sand, and is well drained, with very low runoff. The area slopes are found to be less than 3%.

The northern portion of subject location also borders Upton gravelly loam unit that is a result of weathered limestone. Upton soils are typically shallow (<13 inches) over indurated caliche. The natural drainage is considered to be well drained, with runoff classified as high. The area slopes are 0 to 9 percent.

The nearest waterbody is Pecos River located 2.1 miles southwest of the site investigation and Salt Lake is 2.8 miles north. There are no identified springs or wetlands in the area.

The ChevronTexaco depth to groundwater map was reviewed and the groundwater depth beneath the site location is estimated at 80 feet below ground surface (bgs). The contour lines shown on Figure 6 are 25 ft intervals and the release point as shown on the Figure is close to the 75 ft contour.

The local area is mainly populated with oil and gas operations, with a number of right-of-way's and access roads/trails.

3.0 SCOPE OF WORK

The objective of this site investigation was to map the extent of any chemicals of concern (COC) from the reported fire incident and to determine if there may be a potential for an adverse effect to surrounding receptors. In order to meet these objectives, the following tasks were conducted:

- Review public databases for subsurface conditions and soil lithology.
- Review the New Mexico OSE water column reports and the USGS National Water Information System database, as well as any maps to determine depth to groundwater and distance to any significant watercourses.
- Review requirements for an archaeological survey outside the existing right of way.
- Initiate a NM One-call and notify all pipeline owners in the vicinity.
- Collect initial soil samples based on visual release footprint and submit select soil samples to the laboratory to characterize potential chemicals of concerns.

- Field screen soil samples using a Hanna electrical conductivity (EC) meter to attempt to correlate EC values with chloride concentrations.
- Horizontally and vertically delineate the COC and submit select soil samples to Hall Environmental Analysis Laboratory.
- Excavate impacted subsurface material and dispose of at R360 waste management facility.
- Obtain confirmatory soil samples to meet Table I - *Closure Criteria for Soils Impacted by a Release* (19.15.29 NMAC).
- Reclaim excavated areas with clean caliche, and in vegetated areas add at least 12 inches of topsoil and seed with BLM approved seed mix.

4.0 SITE CHARACTERIZATION

4.1 Field Program

Field events took place between July 18 to September 20, 2019. During this time a number of composite soil samples were collected from the release area and in the southeast direction following the path of the plume. For ease of description, the area of investigation was broken up into 3 zones – 1) Main Excavation; 2) Area Around Electrical Pole; 3) Access Area & BLM off right of way (RoW). The field screening results can be found in Table 2a. Appendix B contains area photographs that illustrates the described site conditions.

1. Main Excavation

    - July 18: Soil samples were collected from around the riser, and the base and walls of the pipeline repair excavation, to better understand the chemicals of concern and to investigate any residual impacts. Two samples were collected from the leading edge of the plume based on visual demarcation. Hydrocarbon and chloride concentrations were analyzed in 12 soil samples. Chlorides from the produced water line release was determined to be the chemical of concern and the parameter that would be investigated to influence remediation.

    - July 30: Field screen for EC values along the extent of the entire excavation. Area broken up into north and south (width of excavation), and east, central, west (length of excavation). Composite samples collected from base and walls to further aid in the excavation.

    - July 31/August 1: Additional excavation around the release point, field screen for EC values and continue to remove elevated material around the sono column near the release point. Excavation depths in the vicinity of the column approximately12ft below

ground surface (bgs). The material was noted to be very heterogeneous, and the EC values were inconsistent. Submit 3 soil composite soil samples for detailed analysis of cations and anions.

- August 7: Assess the base and wall around the new sono column that was installed at 16ft bgs. Samples taken at 8ft bench and 16ft base

2. Area Around Electrical Pole (Fire)

   - July 31/August 1: Hydrovac Oxy and Enterprise pipelines and have representatives onsite to witness soil removal. Field screen EC values in the vicinity of each of these pipelines to vertically assess potential chloride impacts. Advance two test pits to approximately 3 feet below ground surface where caliche was encountered. Field EC values of the caliche material was less than 500 μS/cm. Remove approximately 2ft of material.

   - August 7: Map out the area to delineate chloride concentrations (#1 - #9). Base samples collected between 1.5 and 2 feet bgs. Submit select samples for analysis of chloride.

3. Access Area & BLM Off ROW

   - August 1: Screen EC values from the surface material within the access area (i.e. the area between the release RoW and the vegetation). Remove approximately 6 inches and re-screen.

   - August 8: Excavate area closest to the access road, transition area before vegetation. Depth of excavation between 2 and 5ft bgs, with the deeper excavation closest to the access road. The material was very heterogenous likely due to the number of pipelines right of ways in the area vicinity.

4.2 Soil Sampling – Confirmatory

On August 14 and 15, 2019, a confirmatory sampling program was initiated at all three areas. The results are presented in Table 2b. Results were compared to Table A – Closure Criteria (below).

1. Main Excavation (Figure 7a): Eight base samples and 6 wall samples were field screened for EC and submitted to Hall Environmental Analysis Laboratory for chloride concentrations. The base samples were 5-point composite grab samples between 6ft and 8ft bgs, and the wall samples were 5-point composite samples collected less than 4ft. One background sample at surface, outside the footprint of the release was also sampled.

All soil samples submitted met the closure criteria of 10,000 mg/kg chloride concentration, as well as the reclamation requirement of minimum 4 ft depth being less than 600 mg/kg chlorides. Area of excavation = 305 sq yd

2. Area Around Electrical Pole (Figure 7b): Six base samples were field screened for EC and submitted to Hall Environmental Analysis Laboratory for chloride concentrations. The base samples were 5-point composite grab samples at approximately 2ft bgs. The chloride concentration met the closure criteria of 10,000 mg/kg. The chloride concentrations were collected less than 4ft bgs and did not meet the reclamation requirements of 600 mg/kg, except sample point Base 14. Due to the extensive buried infrastructure and the overhead electrical line, further excavation in the area of the RoW was not considered to be executed without safety concerns. The area is not an area that was or will be vegetated (see Appendix B – Photos). Remediating the rooting zone to 600 mg/kg is not believed to be warranted. Area of excavation = 245 sq yd

3. Access Area & BLM Off ROW (Figure 7c): Two samples were collected from the access area and 4 samples were collected from the vegetated off RoW land; all 6 samples were submitted to Hall Environmental Analysis Laboratory for chloride concentrations and met the closure criteria of 10,000 mg/kg. Three of the samples were greater than the reclamation criteria of 600 mg/kg and the areas were re-assessed.

4.3 Soil Sampling – Vegetated re-assessed

Area 3 was reassessed between August 27 and September 5, 2019. The excavation was extended around BLM sample points 3 and 4 (Figure 7c). The final depth at sample point 3 reached 5ft and at sample point 4 the excavation was to 3ft. The initial visual surface footprint of the impacted area became considerably larger at depth.The Mesquite water line to the south of the excavation needed to be hydrovac'd and the company representative was onsite during the excavation program. The subsurface material in this area was highly disturbed as the Mesquite pipeline had just recently been installed. Additional sampling was obtained on August 28-29, and September 4-5, the results are shown in Table 2c. All soil samples collected met closure criteria and the reclamation criteria at less than 4ft. Area of excavation = 231 sq yd

Table A: Closure Criteria for Soils Impacted by a Release (19.15.29 NMAC)

Closure Criteria		
Depth to Ground Water	**Constituent**	**Limit**
51-100 feet	Chloride	10,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

5.0 CONCLUSION

5.1 Summary

The initial C141 report for this release was provided to NM OCD on July 29, 2019 (Appendix A). The Bureau of Land Management (BLM) was also informed of the release as being the landowners of the property. Initial conversations between Kerry Egan (Lucid) and Jim Amos (BLM) discussed the Off-RoW release portion and the possibility of a resource specialist to conduct an archeological survey. A follow up conversation with Mr. Amos resulted in dismissing the archeological requirement.

The three areas of investigation showed a heterogeneous subsurface component. The depth to caliche varied as did the thickness of the fine sandy loam. The variation in the subsurface composition correlated with pipeline installations and associated disturbance. The latest pipeline installation being the Mesquite saltwater line only a few months ago in the area off the RoW.

The depth of groundwater beneath the site of investigation was determined to be approximately 80ft bgs (Figure 6), thus the chloride closure criteria limits of 10,000 mg/kg concentrations were met in all confirmatory samples analyzed. Tables 2a, 2b, and 2c show that the chloride concentrations were remediated, and the laboratory analytical reports are in Appendix C. The initial confirmatory sampling program conducted off the RoW, downgradient from the initial release point, measured elevated chloride concentrations based on depth not on the closure criteria of 10,000 mg/kg chloride. Further remediation was conducted in order to bring the chloride concentrations to the reclamation standard of 600 mg/kg in the rooting zone considered to be 4 ft bgs. Since this area is vegetated the rooting zone was deemed an applicable receptor.

Table 2c verifies the rooting zone meets 600 mg/kg chloride. One composite sample exceeded 600 mg/kg but this location was at a depth greater than 4 feet (1,700 mg/kg @ 5ft).

5.2 Closure Request

The assessment conducted by HRL followed New Mexico remediation requirements and pertinent regulations. The site investigation and subsequent remediation was completed utilizing appropriate soil sampling protocol and best management practices (NRCS Field Guide). As described in Section 5.1 above, the footprint of the release has been remediated that delivers human health and ecological protection. Based on the site investigation and analytical results, it is recommended that the Lucid Juniper pipeline release site located at 32.248098, -103.972614 be consider closed.

Please see the photographs in Appendix B that depicts the site investigation and area surroundings.

6.0 LIMITATIONS

HRL Compliance Solutions certify that we supervised and carried out the work as described in this report. The report is based on and limited by circumstances and conditions referred to throughout the report and on information available at the time of the site investigation. HRL Compliance Solutions has exercised reasonable skill, care and diligence to assess the information acquired during the preparation of this report. HRL Compliance Solutions believes this information is accurate but cannot guarantee or warrant its accuracy or completeness. Information provided by others was believed to be accurate but cannot be guaranteed.

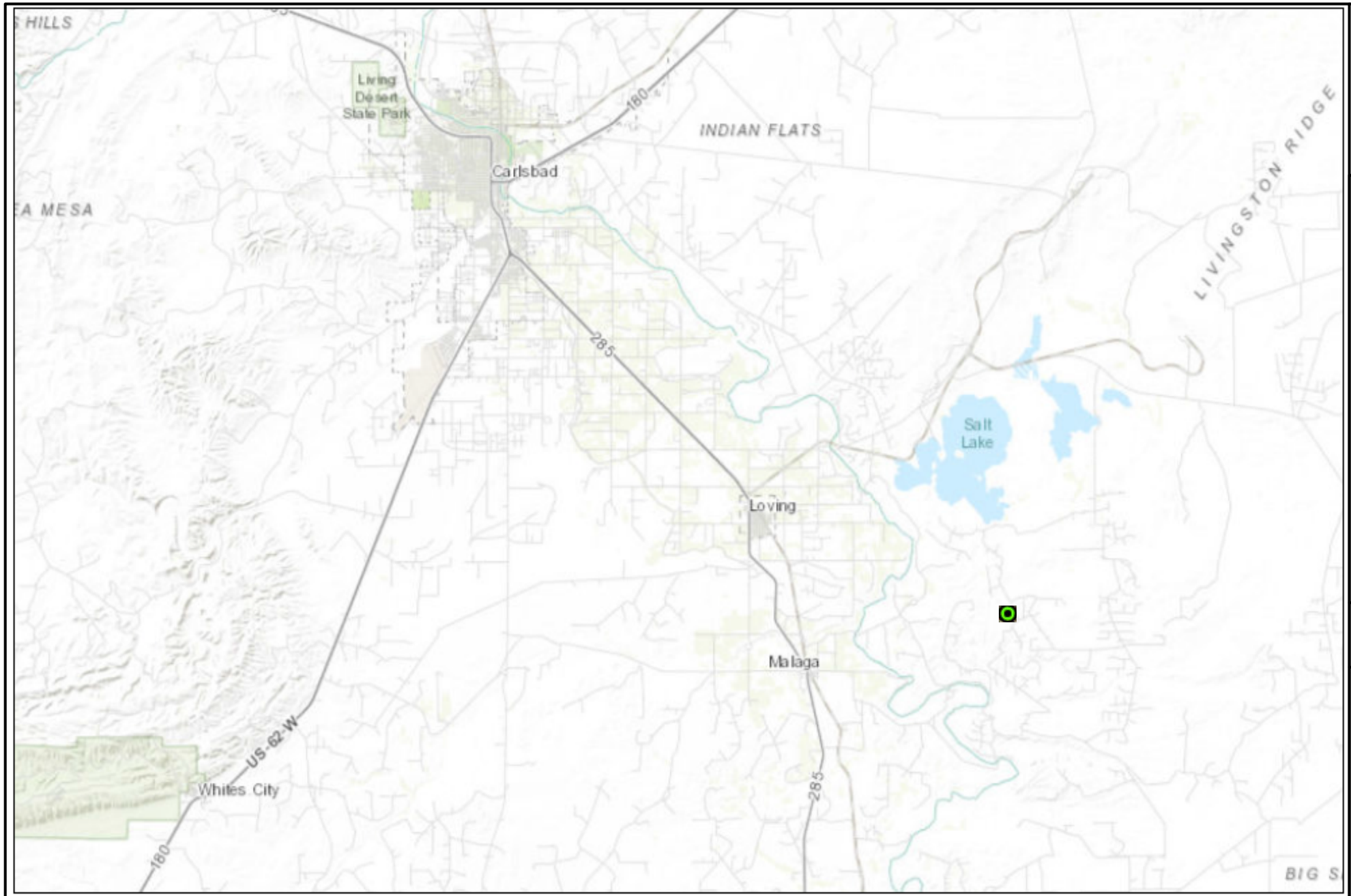

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Figure 1:Site Location Map

Juniper Release
32.248098, -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

Approximate Release Point

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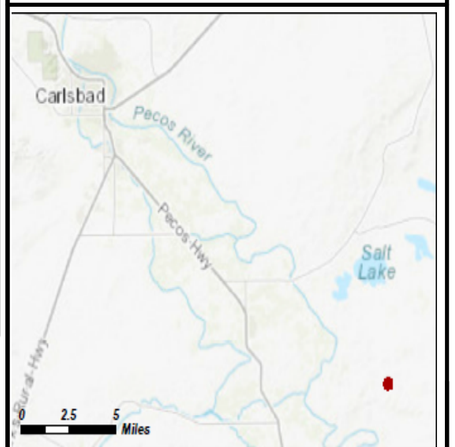

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Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

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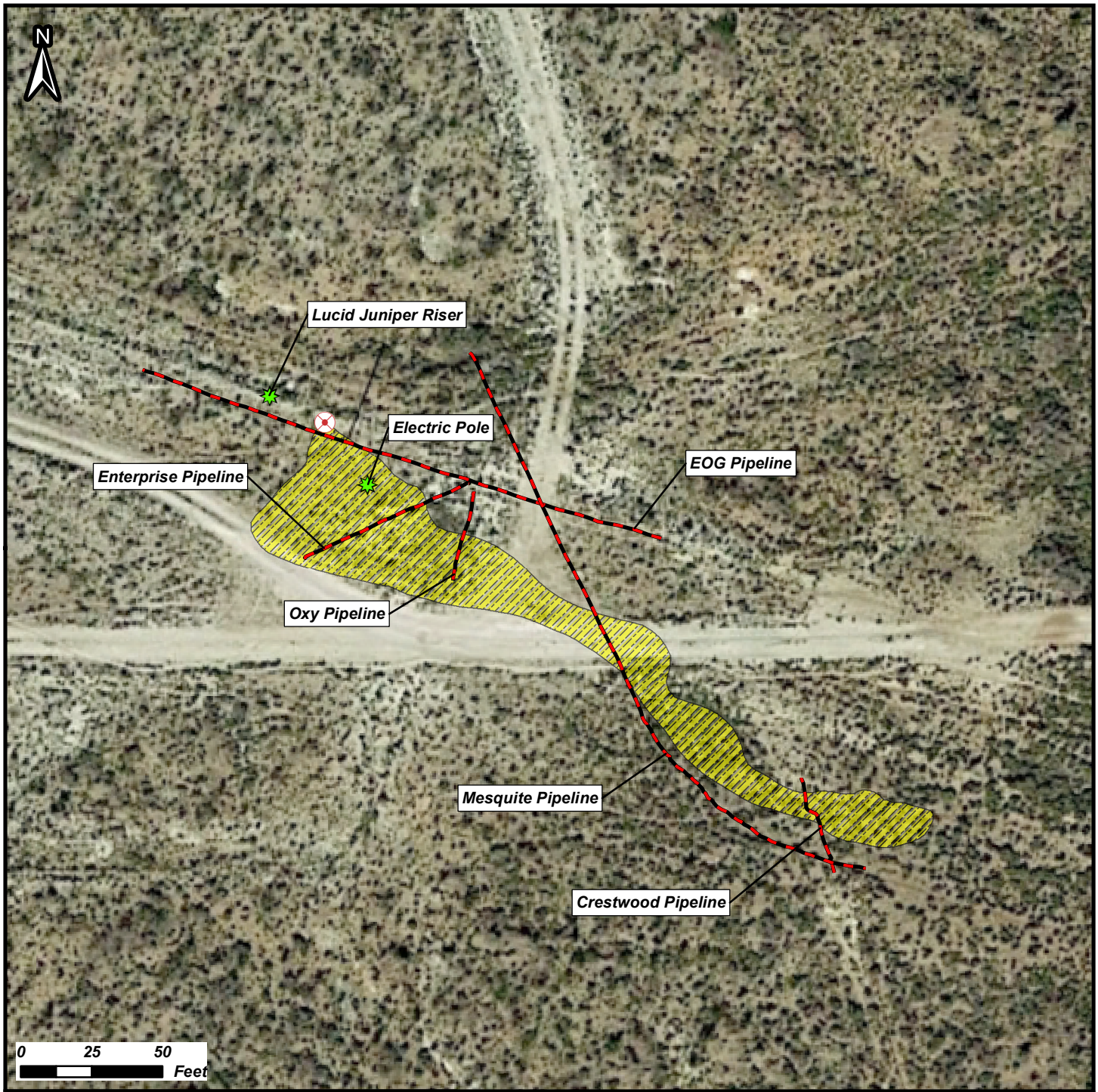
Rev: 0	
Date: 9/18/2019	



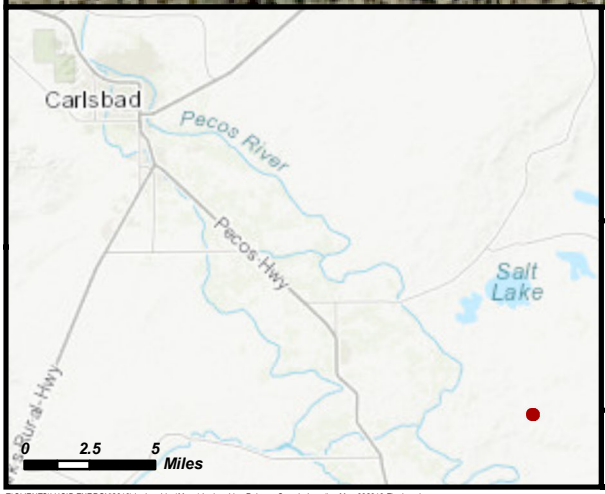


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Figure 2: Juniper Line Release

32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

- Approximate Point of Release
- Pipeline (approx. locations)
- Landmark
- Release Area

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Author: A. Asay
Revision: 0
Date: 9/23/2019

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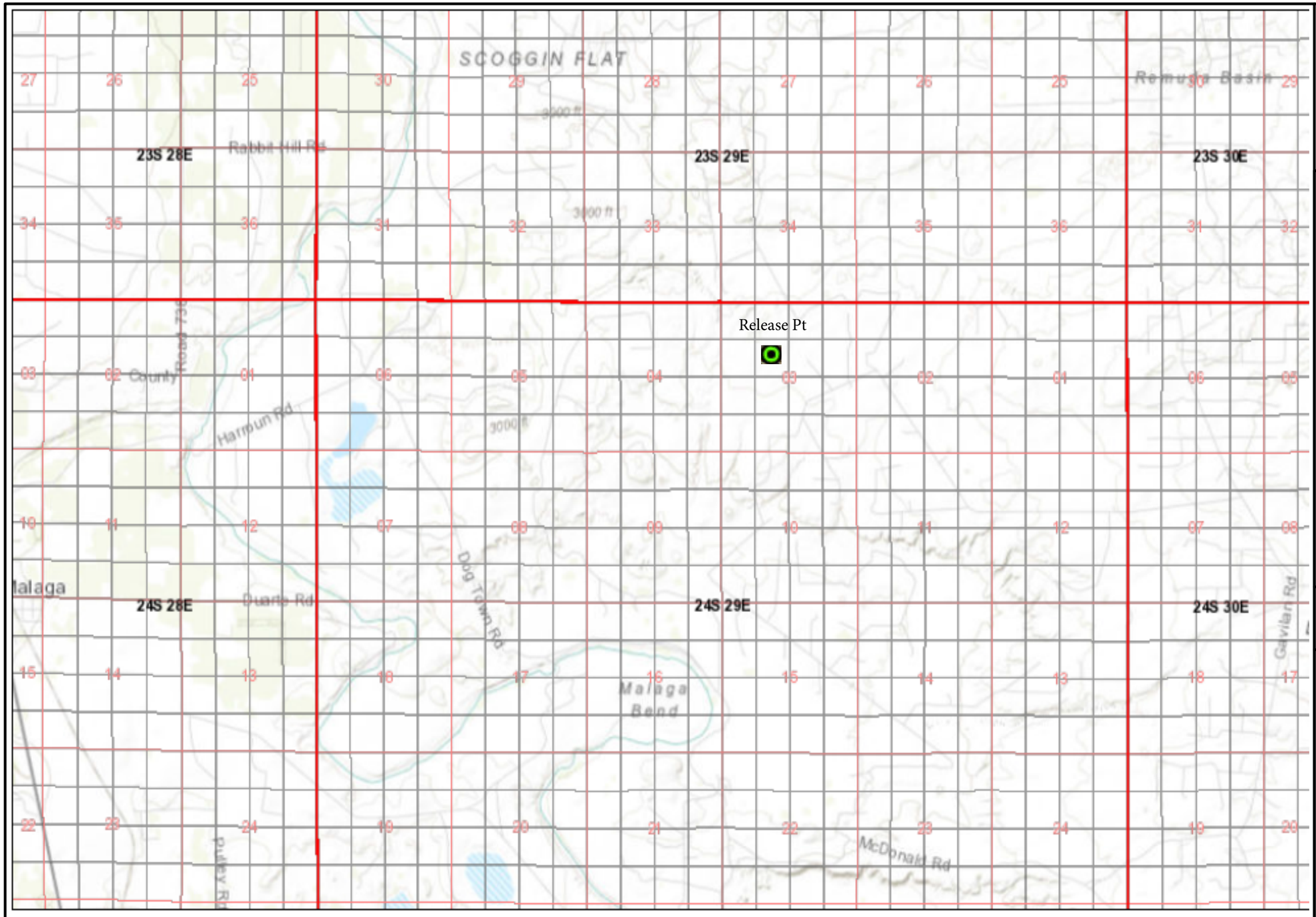

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Figure 3: Site Topo Map

Jumiper Release
32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

Juniper Release
Approximate Location

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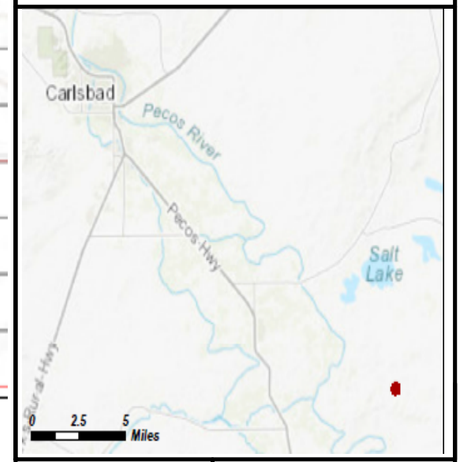

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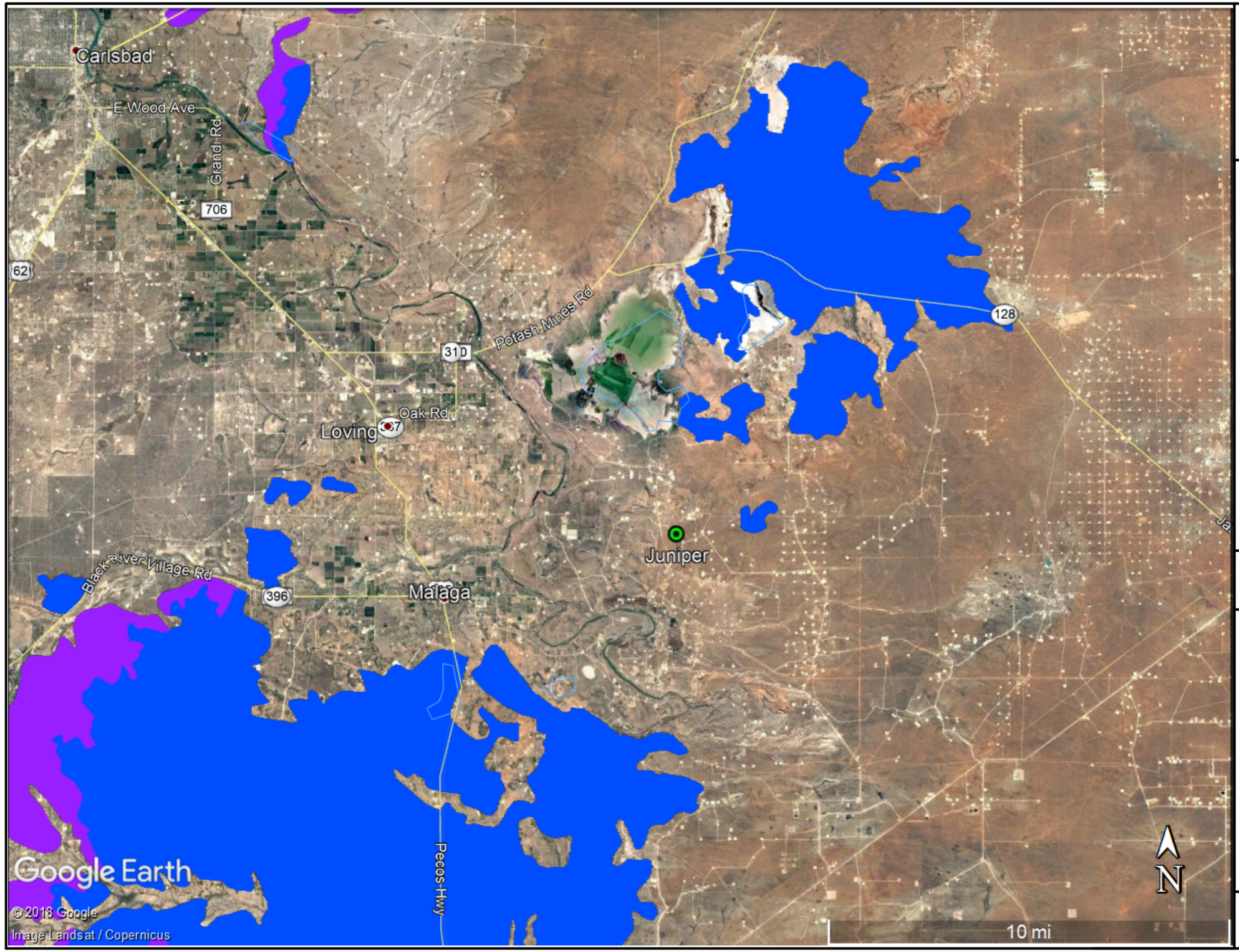

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Figure 4: Karst Formation

Juniper Release
32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

Karst Carbonate

Release Location

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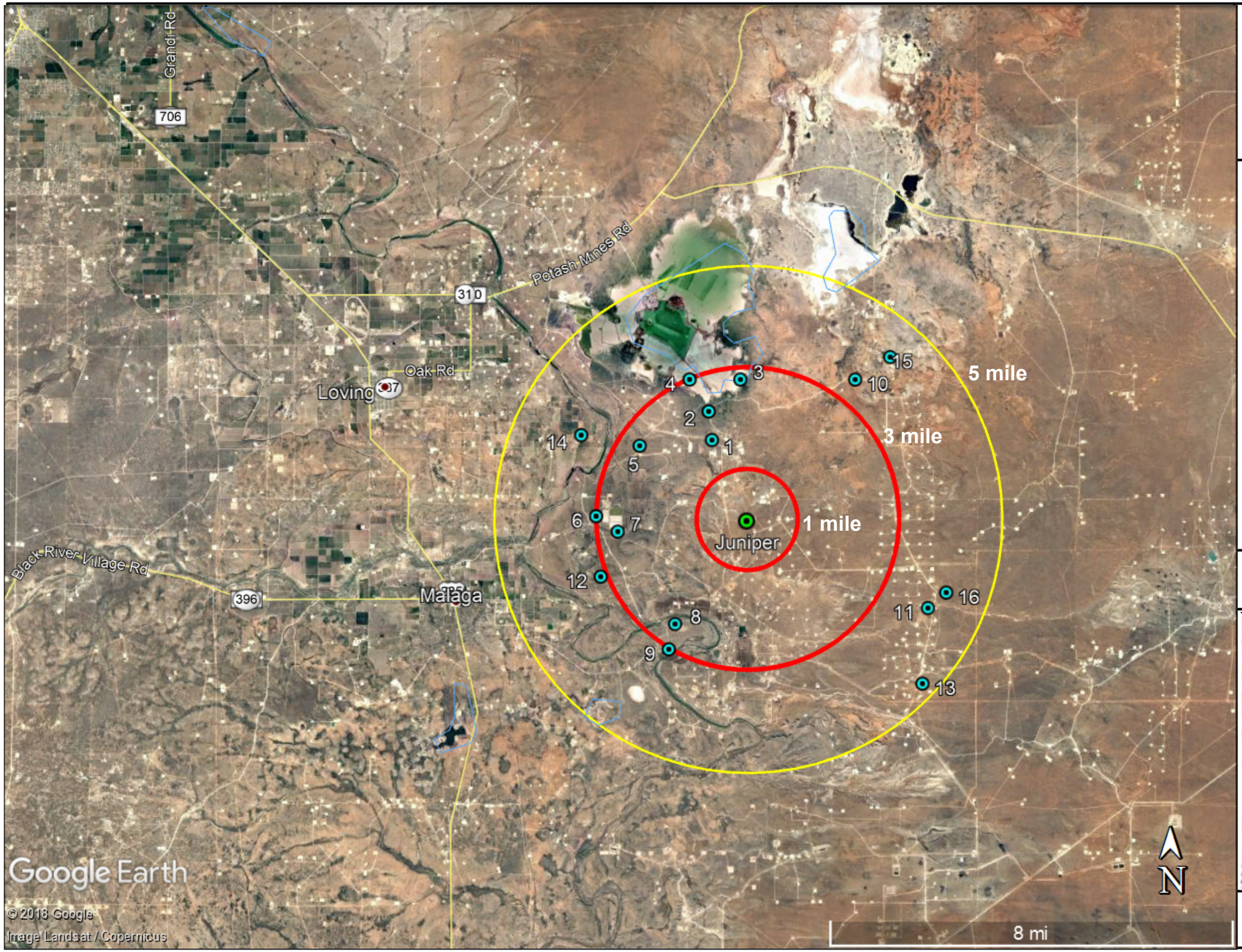

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Figure 5: Water Well Location

Juniper Release

32.248098 -103.972614

Section 3, Township 24 South, Range 29 East

Mapped Features

- Water Well
- Release Location

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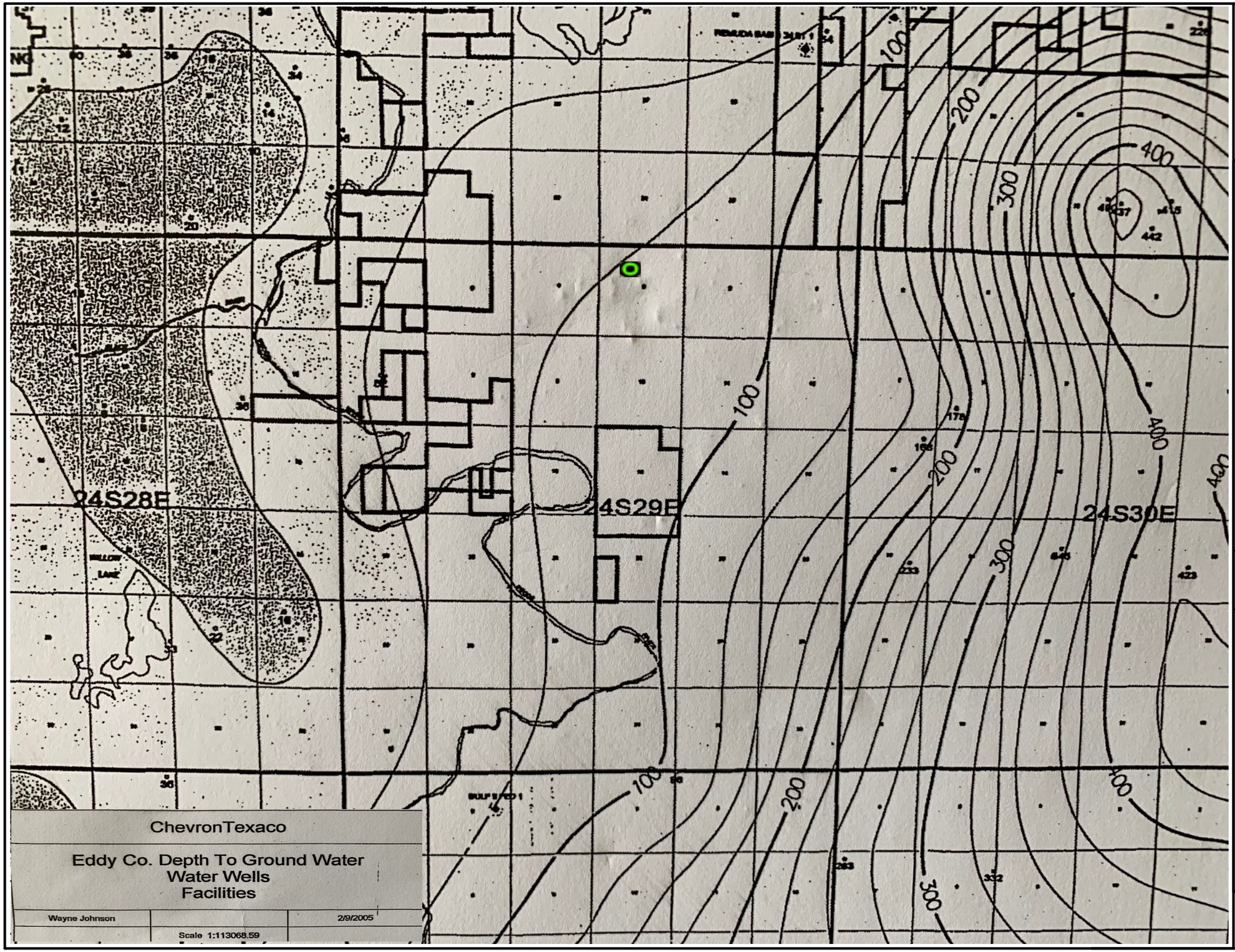

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Figure 6: Depth to Groundwater

Juniper Release
32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

Depth to Groundwater Contours (feet below ground surface)

Approximate Release Point

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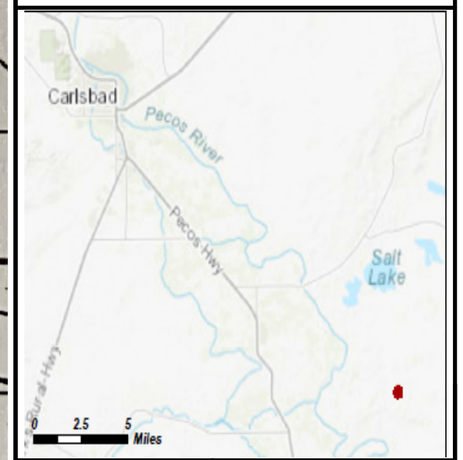

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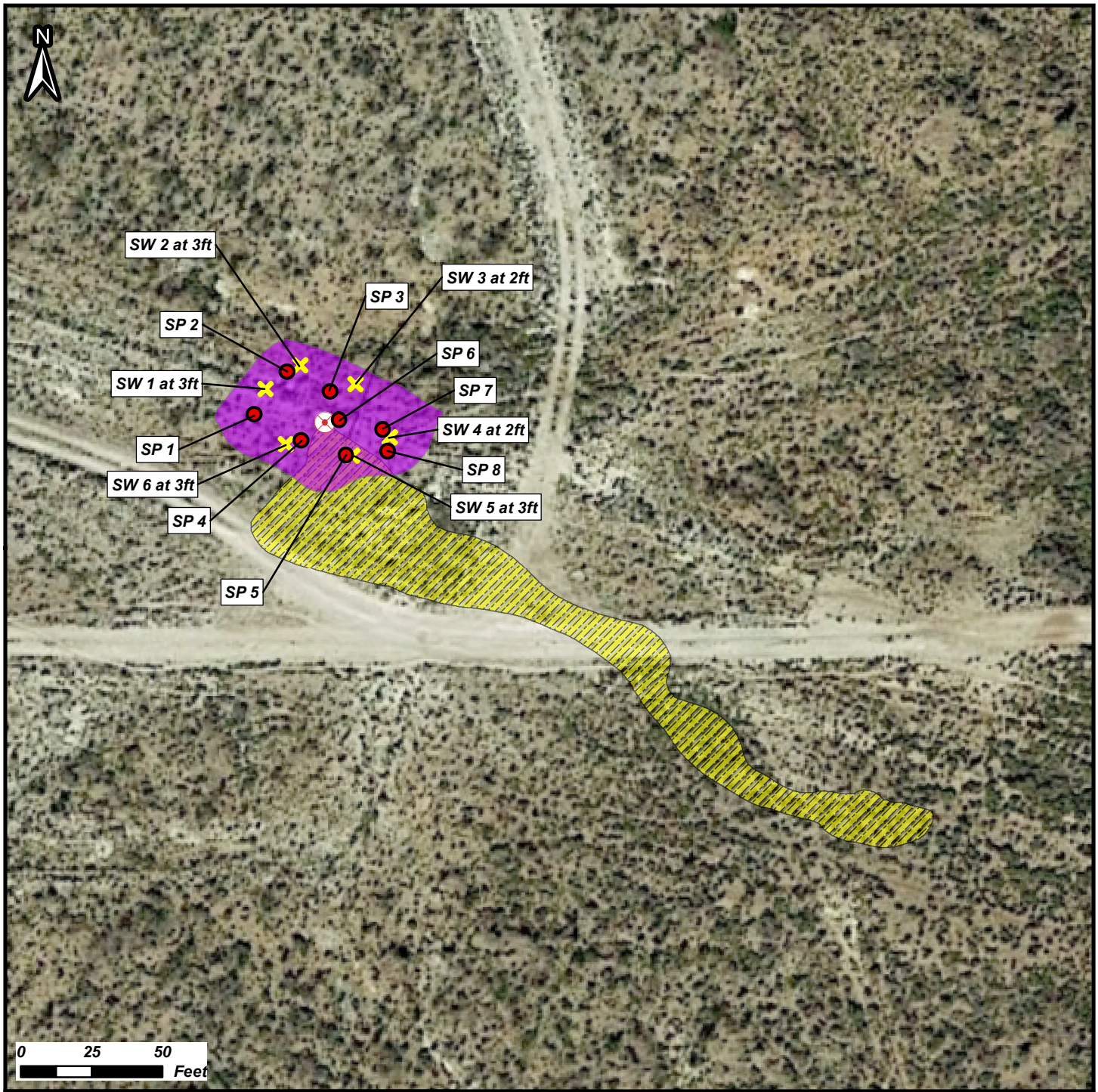

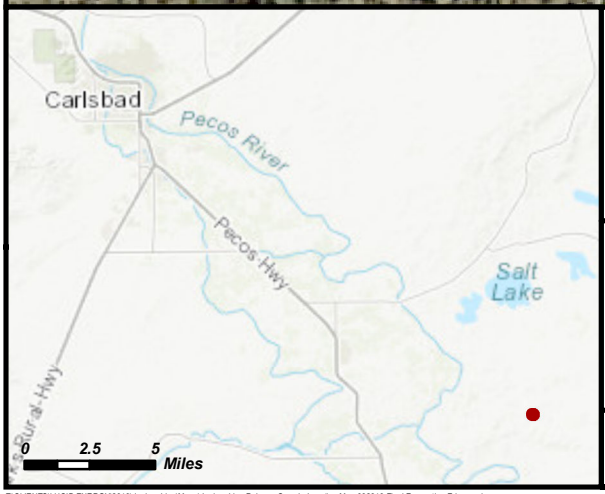

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Sample Location Map

Figure 7a: Main Excavation Area

32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

- Approximate Point of Release
- Sample Point
- Sample Wall Point
- Excavation Edge (305.2 sq yd)
- Release Area (615.7 sq yd)

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Author: A. Asay
Revision: 0
Date: 9/24/2019

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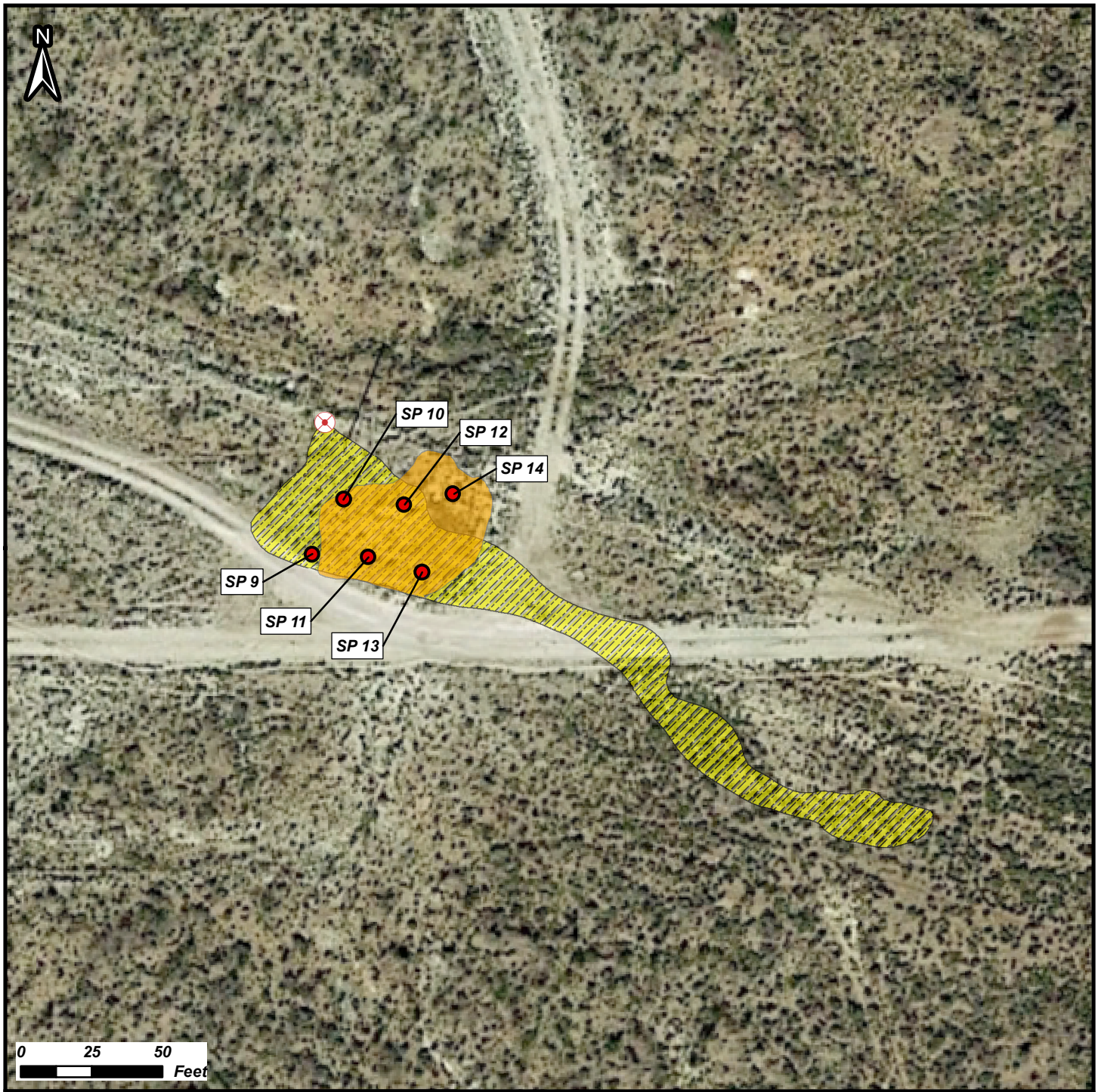

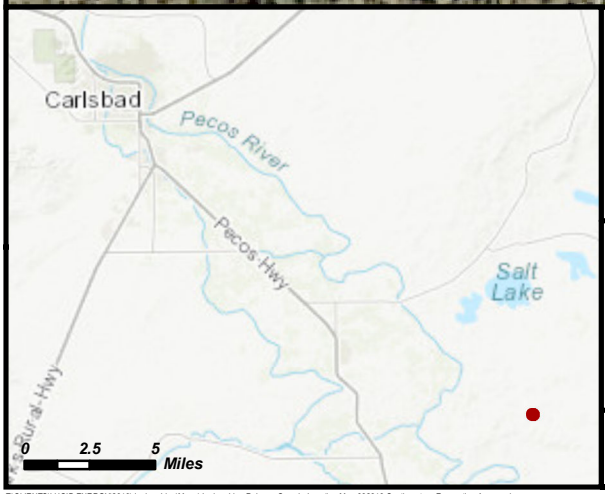

Sample Location Map

Figure 7b: Electrical Pole Area

32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

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Mapped Features

- Approximate Point of Release
- Sample Point
- Excavation Area (244.8 sq yd)
- Release Area (615.7 sq yd)

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Author: A. Asay
Revision: 0
Date: 9/24/2019

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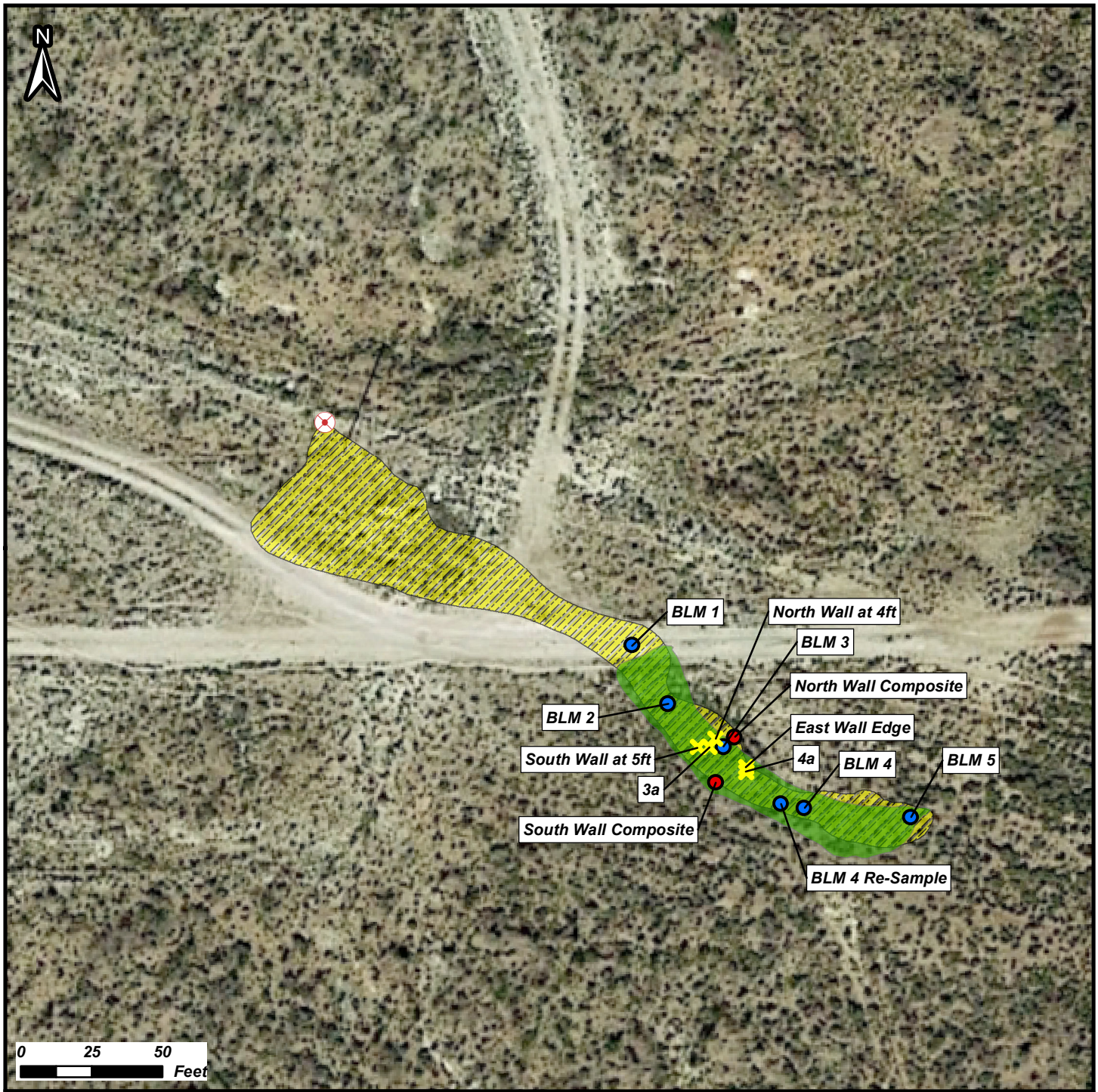

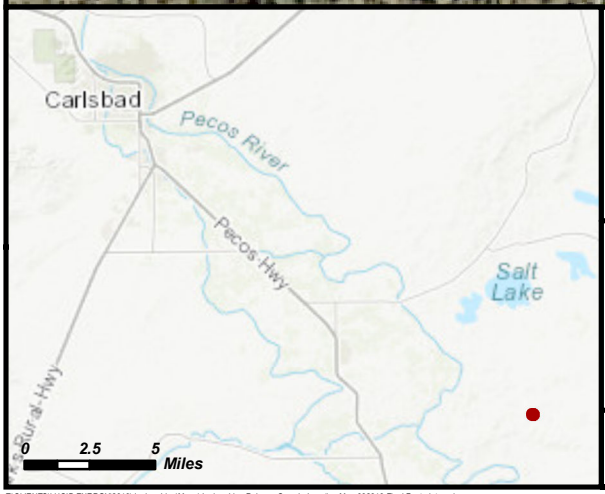

Sample Location Map

Figure 7c: Off Right of Way

32.248098 -103.972614
Section 3, Township 24 South, Range 29 East

Mapped Features

- Approximate Point of Release
- BLM Sample Point
- Sample Point
- Sample Wall Point
- Footprint (231.4 sq yd)
- Release Area (615.7 sq yd)

Author: A. Asay
Revision: 0
Date: 9/24/2019

T:\CLIENTS\LUCID ENERGY\2019\Juniper Line\Maps\Juniper Line Release Sample Location Map 092319 Final Footprint.mxd

TABLE 1 - Water Well within 5 mile radius
Lucid Energy Juniper Pipeline Release
Juniper Section 3 - Twp 24S - RR 29E

Map ID	Well ID	Water Level (ft)	Distance from Release (mi)
	OSE Well Database		
1	1627	NA	1.74
2	2707	18	2.29
3	2797	NA	2.80
4	2721	NA	3.01
5	3587	44	2.59
6	3615 POD1	36	2.99
7	3615 POD2	26	2.57
8	863	NA	2.49
9	463	4	2.98
	USGS - NWIS Database		
10	321717103561001	50.26	3.51
11	321321103544101	168.08	3.96
12	321355104012001	51.78	3.11
13	321205103544701	231.02	4.75
14	*321615104014601*	*35.62*	*3.71*
15	321742103552601	66.1	4.29
16	321339103541801	178.34	4.22
	AVERAGE:	**75.77**	

TABLE 2a - SOIL QUALITY - Initial Screening and Site Assessment
Lucid Energy Juniper Pipeline Release
Juniper Section 3 - Twp 24S - RR 29E

AREA	ID	Date	Field EC (µS/cm)*	Lab EC (µhos/cm)**	Chloride (mg/kg)	Fluoride (mg/kg)	Nitrite-N (mg/kg)	Nitrate-N (mg/kg)	Bromide (mg/kg)	Sulfate (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Potassium (mg/kg)	Sodium (mg/kg)	Benzene (mg/kg)	BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)
PRELIMINARY																			
Riser - North of Release Point Lab Order 1907A63																			
Initial Characterization	East - Surface	18-Jul-19	6510		15000										ND	ND	ND	ND	ND
Initial Characterization	East - 4ft	18-Jul-19	235		220										ND	ND	ND	ND	ND
Initial Characterization	West - Surface	18-Jul-19	6150		22000										ND	ND	ND	ND	ND
Initial Characterization	West - 4ft	18-Jul-19	257		200										ND	ND	ND	ND	ND
Trench - Release Point - Fill material surface, with increasing depth heterogeneous varying thickness of caliche with zone(s) of sandy loam																			
Initial Characterization	East - Base	18-Jul-18	7690		24000										ND	ND	ND	ND	ND
Initial Characterization	East - South Wall	18-Jul-18	1740		4300										ND	ND	ND	ND	ND
Initial Characterization	West - Base	18-Jul-18	2630		5400										ND	ND	ND	ND	ND
Initial Characterization	Release Area - Base	18-Jul-18	7530		21000										0.076	6.116	100	140	95
Initial Characterization	Release Area - South Wall	18-Jul-18	2590		9000										ND	ND	ND	ND	ND
Initial Characterization	Release Area - North Wall (Sono Column)	18-Jul-18	15160		35000										ND	ND	9.9	25	ND
	South - West Base	30-Jul-19	252																
	South - Central Base	30-Jul-19	147																
	South - East Base	30-Jul-19	325																
	North - Sono Column Base	30-Jul-19	5490																
	North - Sono Column Base (#2)	30-Jul-19	2500																
	North - Sono Column Base (#3)	30-Jul-19	4500																
	North - Wall	30-Jul-19	835																
	North - West Base	30-Jul-19	789																
	Base under Sono Column @12'	1-Aug-19	1700	7070	3800	0.34	ND	0.96	37	980	82000	4500	640	1700					
	Wall - North near Sono Column	1-Aug-19	1930	3970	1400	1.1	ND	2.8	13	300	66000	4100	710	710					
	West - Base @8'	1-Aug-19	2700	7500	4700	0.43	ND	1.4	50	640	150000	4300	580	2500					
	Base - Sono Column @16' (new install depth)	7-Aug-19	862																
	Base - slope toward new cement base @8'	7-Aug-19	922		840														
	East - Base @8'	7-Aug-19	2270																
	Wall - East of Column @8' bench	7-Aug-19	2160		3300														
Surrounding Electrical Pole within RoW - Burnt ground - mixed materical - soil and caliche																			
	Enterprise Line - Surface	31-Jul-19	11600																
	Enterprise Line - @1'	31-Jul-19	5160																
	Enterprise Line - @3'	31-Jul-19	1015																
	Caliche material	31-Jul-19	389																
	Oxy Line - Surface	31-Jul-19	4770																
	Oxy Line - North	31-Jul-19	1980																
	Oxy Line - West Test pit @3'	1-Aug-19	173																
Removal 2ft	#1	7-Aug-19	2730		4600														
	#2	7-Aug-19	366																
	#3	7-Aug-19	230																
	#4	7-Aug-19	605																
	#5	7-Aug-19	4440		8000														
	#6	7-Aug-19	4050																
	#7	7-Aug-19	3210																
	#8	7-Aug-19	1110		3300														
	#9	7-Aug-19	2430																
Vegetative Low Area - Mixed; number of RoW constructed and varying backfill used - undisturbed areas native sandy loam surface (<1ft), friable powdery soil (likely CaCO3), varying depths of caliche																			
Initial Characterization	Within visual release path	18-Jul-18	5850		11000										ND	ND	ND	ND	ND
Initial Characterization	SE - outside of visual path	18-Jul-18	44		ND										ND	ND	ND	ND	ND
	SE - Crestwood Gas Line@1'	1-Aug-19	94																
Removal 1ft	Start point near Access and head SE - Base	8-Aug-19	2280																
	North Base (@4')	8-Aug-19	434																
	South Base	8-Aug-19	2100																
	South Base #2 (@5')	8-Aug-19	101																
Removal 2 ft	North Base	8-Aug-19	4650																
	South Base	8-Aug-19	4140																
	North Base (@3.5')	8-Aug-19	2160																
	Base (@4.5')	8-Aug-19	109																
	Near Crestwood Gas Line - hydrovac area	8-Aug-19	515																
	Surface	8-Aug-19	879																
	East of Crestwood Gas Line	8-Aug-19	131																
Access area - SE Toward Vegetation, outside RoW - Caliche Road Material																			
	Nearest release point #1	1-Aug-19	497																
	Heading SE #2	1-Aug-19	10020																
	Closest to Vegetation area #3	1-Aug-19	19740																
Removal 6"	#1	1-Aug-19	123																
	#2	1-Aug-19	486																
	#3	1-Aug-19	1037																

TABLE 2b - SOIL QUALITY - Confirmatory
Lucid Energy Juniper Pipeline Release
Juniper Section 3 - Twp 24S - RR 29E

AREA	ID	Date	Field EC (µS/cm)	Cl (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	GRO (mg/kg)	Benzene (mg/kg)	BTEX (mg/kg)
Confirmatory									
Main Trench Area - Base > 4ft and Wall < 4ft (5 point composite). **See Figure #**									
	Base 1	14-Aug-19	1400	2300					
	Base 2	14-Aug-19	141	110					
	Base 3	14-Aug-19	286	250					
	Base 4	14-Aug-19	399	410					
	Base 5	14-Aug-19	566	1100					
	Base 6	14-Aug-19	260	220					
	Base 7	14-Aug-19	370	500					
	Base 8	14-Aug-19	307	320					
	Wall 1	14-Aug-19	153	210					
	Wall 2	14-Aug-19	181	160					
	Wall 3	14-Aug-19	160	60					
	Wall 4	14-Aug-19	624	980					
	Wall 5	14-Aug-19	170	250					
	Wall 6	14-Aug-19	264	200					
	Background (surface)	14-Aug-19	142	150					
Downgradient of Trench - RoW Area near Electrical Pole. **See Figure #**									
	Base 9	14-Aug-19	708	1900					
	Base 10	14-Aug-19	2530	4800					
	Base 11	14-Aug-19	1034	2400					
	Base 12	14-Aug-19	2560	5900					
	Base 13	14-Aug-19	856	1200					
	Base 14	14-Aug-19	142	ND					
Downgradient - Access									
	Road #1	15-Aug-19	850	550					
	Road #2/BLM1	15-Aug-19	3600	8800^					
Downgradient - Off RoW Vegetation - Base 1-5ft									
	BLM2	15-Aug-19	1410	180					
	BLM3	15-Aug-19	1460	3300^					
	BLM4	15-Aug-19	878	1100^					
	BLM5	15-Aug-19	150	ND					
	Background #2	15-Aug-19	66	ND					
TOP SOIL - fill BLM Vegetated lands	Rawhide Road Pile	15-Aug-19		ND	ND	ND	ND	ND	ND

^ remove additional material and resample

14-Aug-19 Lab Order 1908928
15-Aug-19 Lab Order 1908962

TABLE 2c - SOIL QUALITY - Confirmatory
Lucid Energy Juniper Pipeline Release
Juniper Section 3 - Twp 24S - RR 29E

AREA	ID	Date	Field EC (μS/cm)	Cl (mg/kg)
Additional Excavation removal around BLM 3 & 4 - including wall sampling. See Figure 7c				
Downgradient - Access				
	Road #2/BLM1	5-Sep-19	100	79
	North Wall @ 2-4ft	28-Aug-19	257	200
	South Wall @ 2-4ft	28-Aug-19	236	280
Downgradient - Off RoW Vegetation - Base 3-5ft				
	BLM3 - Base @ 5ft	29-Aug-19	1045	1700
	North Wall @ 2-4ft	29-Aug-19	629	580
	South Wall @ 2-4ft	4-Sep-19	245	ND
	East Wall (Between #3 and #4 sample pt)	29-Aug-19	89	ND
	BLM4 - Base @ 3ft	5-Sep-19	460	600

August 28-29, 2019 Lab Order 1909004
September 4-5, 2019 Lab Order 1909317

Appendix A: C-141 Notification

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party	Lucid Energy Delaware, LLC.	OGRID	372422
Contact Name	Michael Gant	Contact Telephone	575 748 4555
Contact email	Mgant@lucid-energy.com	Incident # *(assigned by OCD)*	
Contact mailing address	201 S. 4th St., Artesia, NM 88210		

Location of Release Source

Latitude 32.248196° Longitude -103.972532°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Juniper Pipeline release	Site Type	Natural gas gathering
Date Release Discovered	7/15/2019	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
F	3	24S	29E	Eddy

Surface Owner: ☐ State ☑ Federal ☐ Tribal ☐ Private (*Name:* Bureau of Land Management)

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☑ Produced Water	Volume Released (bbls) 20 bbls	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☑ Natural Gas	Volume Released (Mcf) 1.5 MMcf	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

The release was caused by flow erosion of the Juniper 8" polyethylene gas line. The release of gas was then ignited by nearby electrical power lines causing a fire which melted through the now exposed produced water line. The fire melted the produced water line and released approximately 20 bbls of produced water.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☑ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? This is a major release based on the volume of natural gas and produced water released.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
Immediate notification was provided to OCD by Kerry Egan to Rob Hamlet/ Victoria Venegas/ Mike Bratcher in District 2 on Monday 7/15/19 via email.

Initial Response

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

☑ The source of the release has been stopped.
☑ The impacted area has been secured to protect human health and the environment.
☑ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☑ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:
Free liquids were removed by vac truck immediately following shut down of surrounding wells and power lines.
The affected area has been barricaded with fencing to prevent entrance by livestock and the public.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name: Michael Gant Title: Environmental Field Coordinator

Signature: Date: 7.29.19

email: mgant@lucid-energy.com Telephone: 314 330 7876

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

☑ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☑ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☑ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☑ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Michael Gant Title: Environmental Coordinator

Signature: MGant Date: 10.2.2019

email: mgant@lucid-energy.com Telephone: 314 330 7876

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

Appendix B: Photographs

Photo 1: Initial Release Surficial Path – looking NW at Release Point

Photo 2: Burnt Area from Electrical Fire – looking South

Photo 3: Main Excavation Pipeline Repair

Photo 4: Main Excavation

Photo 5: Main Excavation – looking SE toward new electrical pole

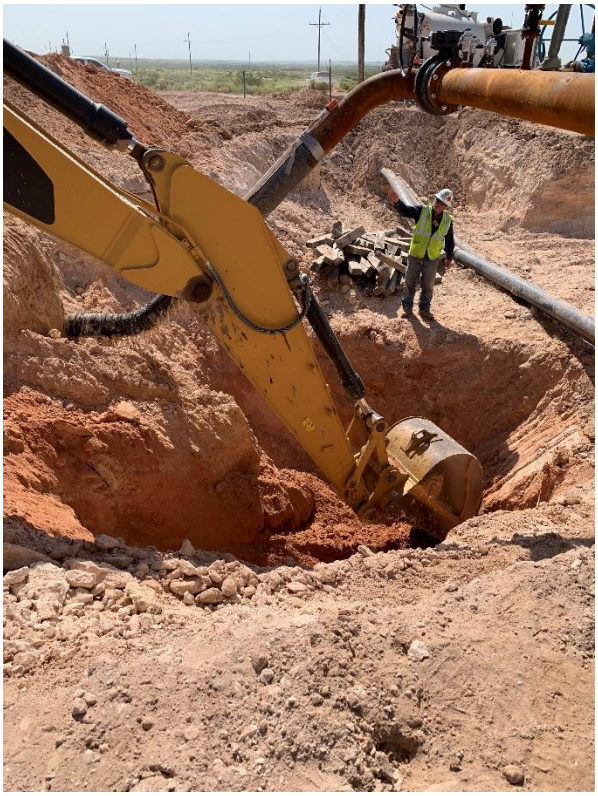

Photo 6: Main Excavation (12ft)– mixture of caliche and soil at depth

Photo 7: Main Excavation– heterogeneous subsurface caliche and soil

Photo 8: Main Excavation – new sono column (TD = 16ft)

Photo 9: Area Around Electrical Pole and Burnt Surface – looking South

Photo 10: Area Around Electrical Pole and Burnt Surface – looking NW at pole

Photo 11: Area Around Electrical Pole and Burnt Surface – Test Pit showing ~20" of unconsolidated material overlying hardpan (caliche)

Photo 12: Access Area – scraping surface looking SE

Photo 13: Off Right of Way – migration of water impacts looking SE

Photo 14: Off Right of Way Excavation – looking NW toward release point (electrical pole in distance)

Photo 15: Off Right of Way Excavation – looking East – heterogeneous material north wall

Photo 16: Off Right of Way Excavation – looking North – heterogeneous material north wall

Photo 17: Off Right of Way Excavation – looking SE at south wall

Photo 18: Off Right of Way Excavation – looking SE at final excavation area

Photo 19: Restoration of Access and Area Around Electrical Pole– looking SE at final excavation area and clean caliche backfill pile

Photo 20: Off Right of Way Surface Restoration – looking SE

Appendix C: Laboratory Results

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 29, 2019

Lori O'Brien

Lucid Energy Delaware
326 WEst Quay St
Artesia, NM 88210
TEL: (575) 513-8988
FAX

RE: Juniper Spill Site OrderNo.: 1907A63

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 12 sample(s) on 7/20/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Riser-East-Surf
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:00:00 PM
Lab ID: 1907A63-001 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/22/2019 12:19:44 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/22/2019 12:19:44 PM
Surr: DNOP	79.2	70-130		%Rec	1	7/22/2019 12:19:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	7/22/2019 9:46:56 AM
Surr: BFB	99.6	73.8-119		%Rec	1	7/22/2019 9:46:56 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.018		mg/Kg	1	7/22/2019 9:46:56 AM
Toluene	ND	0.036		mg/Kg	1	7/22/2019 9:46:56 AM
Ethylbenzene	ND	0.036		mg/Kg	1	7/22/2019 9:46:56 AM
Xylenes, Total	ND	0.071		mg/Kg	1	7/22/2019 9:46:56 AM
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	7/22/2019 9:46:56 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	15000	600		mg/Kg	200	7/22/2019 1:09:20 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Riser-East-4Ft
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:00:00 PM
Lab ID: 1907A63-002 **Matrix:** SOIL **Received Date:** 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/22/2019 12:42:00 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/22/2019 12:42:00 PM
Surr: DNOP	77.5	70-130		%Rec	1	7/22/2019 12:42:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	7/22/2019 10:10:24 AM
Surr: BFB	86.0	73.8-119		%Rec	1	7/22/2019 10:10:24 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.022		mg/Kg	1	7/22/2019 10:10:24 AM
Toluene	ND	0.043		mg/Kg	1	7/22/2019 10:10:24 AM
Ethylbenzene	ND	0.043		mg/Kg	1	7/22/2019 10:10:24 AM
Xylenes, Total	ND	0.086		mg/Kg	1	7/22/2019 10:10:24 AM
Surr: 4-Bromofluorobenzene	86.9	80-120		%Rec	1	7/22/2019 10:10:24 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	220	60		mg/Kg	20	7/22/2019 12:07:18 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Riser-West-Surf
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:00:00 PM
Lab ID: 1907A63-003 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/22/2019 1:29:38 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/22/2019 1:29:38 PM
Surr: DNOP	87.8	70-130		%Rec	1	7/22/2019 1:29:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	7/22/2019 10:33:53 AM
Surr: BFB	90.5	73.8-119		%Rec	1	7/22/2019 10:33:53 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.019		mg/Kg	1	7/22/2019 10:33:53 AM
Toluene	ND	0.038		mg/Kg	1	7/22/2019 10:33:53 AM
Ethylbenzene	ND	0.038		mg/Kg	1	7/22/2019 10:33:53 AM
Xylenes, Total	ND	0.076		mg/Kg	1	7/22/2019 10:33:53 AM
Surr: 4-Bromofluorobenzene	91.3	80-120		%Rec	1	7/22/2019 10:33:53 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	22000	1500		mg/Kg	500	7/22/2019 1:21:44 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Riser-West-4Ft
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:15:00 PM
Lab ID: 1907A63-004 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/22/2019 1:51:46 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/22/2019 1:51:46 PM
Surr: DNOP	80.8	70-130		%Rec	1	7/22/2019 1:51:46 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	7/22/2019 10:57:22 AM
Surr: BFB	89.8	73.8-119		%Rec	1	7/22/2019 10:57:22 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.021		mg/Kg	1	7/22/2019 10:57:22 AM
Toluene	ND	0.042		mg/Kg	1	7/22/2019 10:57:22 AM
Ethylbenzene	ND	0.042		mg/Kg	1	7/22/2019 10:57:22 AM
Xylenes, Total	ND	0.085		mg/Kg	1	7/22/2019 10:57:22 AM
Surr: 4-Bromofluorobenzene	91.1	80-120		%Rec	1	7/22/2019 10:57:22 AM
EPA METHOD 300.0: ANIONS						Analyst: **MRA**
Chloride	200	60		mg/Kg	20	7/22/2019 12:56:55 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Trench-East-Base
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:15:00 PM
Lab ID: 1907A63-005 **Matrix:** SOIL **Received Date:** 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	7/22/2019 2:59:07 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/22/2019 2:59:07 PM
Surr: DNOP	87.9	70-130		%Rec	1	7/22/2019 2:59:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/23/2019 10:00:08 PM
Surr: BFB	105	73.8-119		%Rec	1	7/23/2019 10:00:08 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	7/23/2019 10:00:08 PM
Toluene	ND	0.050		mg/Kg	1	7/23/2019 10:00:08 PM
Ethylbenzene	ND	0.050		mg/Kg	1	7/23/2019 10:00:08 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/23/2019 10:00:08 PM
Surr: 4-Bromofluorobenzene	89.2	80-120		%Rec	1	7/23/2019 10:00:08 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	24000	1500		mg/Kg	500	7/25/2019 10:39:14 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix
E	Value above quantitation range
H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit
P	Sample pH Not In Range
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Trench-West-Base
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:15:00 PM
Lab ID: 1907A63-006 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/22/2019 3:21:15 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/22/2019 3:21:15 PM
Surr: DNOP	69.4	70-130	S	%Rec	1	7/22/2019 3:21:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/23/2019 11:08:15 PM
Surr: BFB	109	73.8-119		%Rec	1	7/23/2019 11:08:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	7/23/2019 11:08:15 PM
Toluene	ND	0.049		mg/Kg	1	7/23/2019 11:08:15 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/23/2019 11:08:15 PM
Xylenes, Total	ND	0.098		mg/Kg	1	7/23/2019 11:08:15 PM
Surr: 4-Bromofluorobenzene	91.7	80-120		%Rec	1	7/23/2019 11:08:15 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	5400	150		mg/Kg	50	7/25/2019 11:41:17 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Trench-Release-Base
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:15:00 PM
Lab ID: 1907A63-007 **Matrix:** SOIL **Received Date:** 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	140	9.1		mg/Kg	1	7/22/2019 3:43:32 PM
Motor Oil Range Organics (MRO)	95	46		mg/Kg	1	7/22/2019 3:43:32 PM
Surr: DNOP	99.4	70-130		%Rec	1	7/22/2019 3:43:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	100	4.8		mg/Kg	1	7/23/2019 11:30:58 PM
Surr: BFB	502	73.8-119	S	%Rec	1	7/23/2019 11:30:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	0.076	0.024		mg/Kg	1	7/23/2019 11:30:58 PM
Toluene	1.5	0.048		mg/Kg	1	7/23/2019 11:30:58 PM
Ethylbenzene	0.64	0.048		mg/Kg	1	7/23/2019 11:30:58 PM
Xylenes, Total	3.9	0.096		mg/Kg	1	7/23/2019 11:30:58 PM
Surr: 4-Bromofluorobenzene	125	80-120	S	%Rec	1	7/23/2019 11:30:58 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	21000	1500		mg/Kg	500	7/25/2019 10:51:39 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Trench-East-S. Wall
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:30:00 PM
Lab ID: 1907A63-008 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	7/22/2019 4:05:44 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/22/2019 4:05:44 PM
Surr: DNOP	90.4	70-130		%Rec	1	7/22/2019 4:05:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/23/2019 11:53:44 PM
Surr: BFB	109	73.8-119		%Rec	1	7/23/2019 11:53:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	7/23/2019 11:53:44 PM
Toluene	ND	0.049		mg/Kg	1	7/23/2019 11:53:44 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/23/2019 11:53:44 PM
Xylenes, Total	ND	0.098		mg/Kg	1	7/23/2019 11:53:44 PM
Surr: 4-Bromofluorobenzene	90.5	80-120		%Rec	1	7/23/2019 11:53:44 PM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	4300	150		mg/Kg	50	7/25/2019 11:53:41 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Trench-Release-S. Wall
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:30:00 PM
Lab ID: 1907A63-009 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/22/2019 7:26:38 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/22/2019 7:26:38 PM
Surr: DNOP	85.7	70-130		%Rec	1	7/22/2019 7:26:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/24/2019 12:16:22 AM
Surr: BFB	107	73.8-119		%Rec	1	7/24/2019 12:16:22 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	7/24/2019 12:16:22 AM
Toluene	ND	0.047		mg/Kg	1	7/24/2019 12:16:22 AM
Ethylbenzene	ND	0.047		mg/Kg	1	7/24/2019 12:16:22 AM
Xylenes, Total	ND	0.095		mg/Kg	1	7/24/2019 12:16:22 AM
Surr: 4-Bromofluorobenzene	88.9	80-120		%Rec	1	7/24/2019 12:16:22 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	9000	600		mg/Kg	200	7/26/2019 12:06:06 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Trench-Release-N. Wall
Project: Juniper Spill Site
Collection Date: 7/18/2019 2:30:00 PM
Lab ID: 1907A63-010 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	25	9.9		mg/Kg	1	7/22/2019 7:49:06 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/22/2019 7:49:06 PM
Surr: DNOP	94.6	70-130		%Rec	1	7/22/2019 7:49:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	9.9	4.8		mg/Kg	1	7/24/2019 12:39:04 AM
Surr: BFB	140	73.8-119	S	%Rec	1	7/24/2019 12:39:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	7/24/2019 12:39:04 AM
Toluene	ND	0.048		mg/Kg	1	7/24/2019 12:39:04 AM
Ethylbenzene	ND	0.048		mg/Kg	1	7/24/2019 12:39:04 AM
Xylenes, Total	ND	0.095		mg/Kg	1	7/24/2019 12:39:04 AM
Surr: 4-Bromofluorobenzene	95.7	80-120		%Rec	1	7/24/2019 12:39:04 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	35000	1500		mg/Kg	500	7/25/2019 11:04:03 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SE-Ditch-Stain#1
Project: Juniper Spill Site
Collection Date: 7/18/2019 3:15:00 PM
Lab ID: 1907A63-011 **Matrix:** SOIL
Received Date: 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	7/22/2019 8:11:18 PM
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	7/22/2019 8:11:18 PM
Surr: DNOP	95.3	70-130		%Rec	1	7/22/2019 8:11:18 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/24/2019 1:24:35 AM
Surr: BFB	107	73.8-119		%Rec	1	7/24/2019 1:24:35 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	7/24/2019 1:24:35 AM
Toluene	ND	0.049		mg/Kg	1	7/24/2019 1:24:35 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/24/2019 1:24:35 AM
Xylenes, Total	ND	0.097		mg/Kg	1	7/24/2019 1:24:35 AM
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	7/24/2019 1:24:35 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	11000	600		mg/Kg	200	7/26/2019 12:18:31 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SE-Ditch-#2
Project: Juniper Spill Site
Collection Date: 7/18/2019 3:15:00 PM
Lab ID: 1907A63-012 **Matrix:** SOIL **Received Date:** 7/20/2019 9:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	7/22/2019 8:33:22 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/22/2019 8:33:22 PM
Surr: DNOP	97.2	70-130		%Rec	1	7/22/2019 8:33:22 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/24/2019 1:47:22 AM
Surr: BFB	106	73.8-119		%Rec	1	7/24/2019 1:47:22 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	7/24/2019 1:47:22 AM
Toluene	ND	0.049		mg/Kg	1	7/24/2019 1:47:22 AM
Ethylbenzene	ND	0.049		mg/Kg	1	7/24/2019 1:47:22 AM
Xylenes, Total	ND	0.097		mg/Kg	1	7/24/2019 1:47:22 AM
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	7/24/2019 1:47:22 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	7/25/2019 5:16:35 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907A63**
29-Jul-19

Client: Lucid Energy Delaware
Project: Juniper Spill Site

Sample ID: **MB-46301** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **46301** RunNo: **61554**
Prep Date: **7/22/2019** Analysis Date: **7/22/2019** SeqNo: **2087068** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46301** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **46301** RunNo: **61554**
Prep Date: **7/22/2019** Analysis Date: **7/22/2019** SeqNo: **2087069** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.5	90	110			

Sample ID: **MB-46374** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **46374** RunNo: **61634**
Prep Date: **7/24/2019** Analysis Date: **7/24/2019** SeqNo: **2089324** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46374** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **46374** RunNo: **61634**
Prep Date: **7/24/2019** Analysis Date: **7/24/2019** SeqNo: **2089325** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

Sample ID: **MB-46399** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **46399** RunNo: **61687**
Prep Date: **7/25/2019** Analysis Date: **7/25/2019** SeqNo: **2091060** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46399** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **46399** RunNo: **61687**
Prep Date: **7/25/2019** Analysis Date: **7/25/2019** SeqNo: **2091061** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907A63**
29-Jul-19

Client: Lucid Energy Delaware
Project: Juniper Spill Site

Sample ID: **LCS-46299** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **46299** RunNo: **61551**
Prep Date: **7/22/2019** Analysis Date: **7/22/2019** SeqNo: **2086155** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.1	63.9	124			
Surr: DNOP	4.1		5.000		82.9	70	130			

Sample ID: **MB-46299** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **46299** RunNo: **61551**
Prep Date: **7/22/2019** Analysis Date: **7/22/2019** SeqNo: **2086156** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.3		10.00		83.2	70	130			

Sample ID: **1907A63-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Riser-East-Surf** Batch ID: **46299** RunNo: **61551**
Prep Date: **7/22/2019** Analysis Date: **7/22/2019** SeqNo: **2086529** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	49.95	0	90.4	57	142			
Surr: DNOP	4.1		4.995		82.6	70	130			

Sample ID: **1907A63-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Riser-East-Surf** Batch ID: **46299** RunNo: **61551**
Prep Date: **7/22/2019** Analysis Date: **7/22/2019** SeqNo: **2086530** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	35	8.7	43.59	0	80.9	57	142	24.6	20	R
Surr: DNOP	3.4		4.359		77.2	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907A63**
29-Jul-19

Client: Lucid Energy Delaware
Project: Juniper Spill Site

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **G61546** RunNo: **61546**
Prep Date: Analysis Date: **7/22/2019** SeqNo: **2086492** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		102	73.8	119			

Sample ID: **2.5UG GRO LCS** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **G61546** RunNo: **61546**
Prep Date: Analysis Date: **7/22/2019** SeqNo: **2086493** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.4	80.1	123			
Surr: BFB	1000		1000		103	73.8	119			

Sample ID: **1907A63-001AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Riser-East-Surf** Batch ID: **G61546** RunNo: **61546**
Prep Date: Analysis Date: **7/22/2019** SeqNo: **2086495** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.6	17.81	0	90.3	69.1	142			
Surr: BFB	790		712.2		111	73.8	119			

Sample ID: **1907A63-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Riser-East-Surf** Batch ID: **G61546** RunNo: **61546**
Prep Date: Analysis Date: **7/22/2019** SeqNo: **2086496** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	16	3.6	17.81	0	88.5	69.1	142	2.01	20	
Surr: BFB	790		712.3		111	73.8	119	0	0	

Sample ID: **MB-46308** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **46308** RunNo: **61588**
Prep Date: **7/22/2019** Analysis Date: **7/23/2019** SeqNo: **2087823** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	950		1000		95.1	73.8	119			

Sample ID: **LCS-46308** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **46308** RunNo: **61588**
Prep Date: **7/22/2019** Analysis Date: **7/23/2019** SeqNo: **2087824** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907A63**

29-Jul-19

Client: Lucid Energy Delaware

Project: Juniper Spill Site

Sample ID: **LCS-46308** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **46308** RunNo: **61588**

Prep Date: **7/22/2019** Analysis Date: **7/23/2019** SeqNo: **2087824** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.2	80.1	123			
Surr: BFB	1000		1000		104	73.8	119			

Sample ID: **MB-46343** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **46343** RunNo: **61629**

Prep Date: **7/23/2019** Analysis Date: **7/24/2019** SeqNo: **2088935** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		106	73.8	119			

Sample ID: **LCS-46343** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **46343** RunNo: **61629**

Prep Date: **7/23/2019** Analysis Date: **7/24/2019** SeqNo: **2088936** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		118	73.8	119			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907A63**

29-Jul-19

Client: Lucid Energy Delaware

Project: Juniper Spill Site

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B61546**	RunNo: **61546**
Prep Date:	Analysis Date: **7/22/2019**	SeqNo: **2086510** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B61546**	RunNo: **61546**
Prep Date:	Analysis Date: **7/22/2019**	SeqNo: **2086511** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.2	80	120			
Toluene	1.0	0.050	1.000	0	99.9	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.6	80	120			
Surr: 4-Bromofluorobenzene	0.90		1.000		90.3	80	120			

Sample ID: **1907A63-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Riser-East-4Ft**	Batch ID: **B61546**	RunNo: **61546**
Prep Date:	Analysis Date: **7/22/2019**	SeqNo: **2086514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.022	0.8643	0	94.5	63.9	127			
Toluene	0.87	0.043	0.8643	0	100	69.9	131			
Ethylbenzene	0.88	0.043	0.8643	0	102	71	132			
Xylenes, Total	2.6	0.086	2.593	0	101	71.8	131			
Surr: 4-Bromofluorobenzene	0.82		0.8643		95.1	80	120			

Sample ID: **1907A63-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Riser-East-4Ft**	Batch ID: **B61546**	RunNo: **61546**
Prep Date:	Analysis Date: **7/22/2019**	SeqNo: **2086515** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.022	0.8643	0	92.9	63.9	127	1.75	20	
Toluene	0.86	0.043	0.8643	0	99.3	69.9	131	1.19	20	
Ethylbenzene	0.86	0.043	0.8643	0	99.9	71	132	1.77	20	
Xylenes, Total	2.6	0.086	2.593	0	99.9	71.8	131	0.989	20	
Surr: 4-Bromofluorobenzene	0.84		0.8643		96.9	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907A63**

29-Jul-19

Client: Lucid Energy Delaware

Project: Juniper Spill Site

Sample ID: **MB-46308**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **46308**	RunNo: **61588**
Prep Date: **7/22/2019**	Analysis Date: **7/23/2019**	SeqNo: **2087848** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		95.2	80	120			

Sample ID: **LCS-46308**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **46308**	RunNo: **61588**
Prep Date: **7/22/2019**	Analysis Date: **7/23/2019**	SeqNo: **2087849** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	80	120			
Toluene	1.1	0.050	1.000	0	105	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.0	80	120			

Sample ID: **MB-46343**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **46343**	RunNo: **61629**
Prep Date: **7/23/2019**	Analysis Date: **7/24/2019**	SeqNo: **2088963** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.89		1.000		89.5	80	120			

Sample ID: **LCS-46343**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **46343**	RunNo: **61629**
Prep Date: **7/23/2019**	Analysis Date: **7/24/2019**	SeqNo: **2088964** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		96.4	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Chain-of-Custody Record

Client: Lucid Energy

Mailing Address: Artesia

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: ~~(8)~~ (4) Same Day
☐ Standard ☒ Rush See Below

Project Name: Juniper Spill Site

Project #: ~~Subject to Approval~~

Project Manager: Lori O'Brien

Sampler: Lori O

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.2+0.1=3.3°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1907A63	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	
07/18	14:00	Soil	Riser - East - Surf.	1	Ice	-001	X	X					X				RUSH
			Riser - East - 4ft	1		-002	X	X					X				RUSH
			Riser - West - Surf	1		-003	X	X					X				RUSH
	14:15		Riser - West - 4ft	1		-004	X	X					X				RUSH
			Trench - East - Base			-005	X	X					X				STD
			Trench - West - Base			-006	X	X					X				
			Trench - Release - Base			-007	X	X					X				
	14:30		Trench - East - S Wall			-008	X	X					X				
			Trench - Release - S. Wall			-009	X	X					X				
			Trench - Release - N. Wall			-010	X	X					X				
	15:15		SE - Ditch - Stain #1			-011	X	X					X				
	15:15		SE - Ditch #2			-012	X	X					X				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
07/19/19	9:00				7/19	0900
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
				Courier	7/20/19	9:40

Remarks:
lobrien@hrlcomp.com
mgant@lucid-energy.com

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1907A63** RcptNo: 1

Received By: **Desiree Dominguez** **7/20/2019 9:40:00 AM**

Completed By: **Desiree Dominguez** **7/20/2019 10:15:59 AM**

Reviewed By: ZB 7/22/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: YG 7/22/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Not Present			

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 08, 2019

Lori O'Brien
Lucid Energy Delaware
326 West Quay St
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Juniper Release OrderNo.: 1908144

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/3/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1908144**
Date Reported: **8/8/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Base @ 12Ft
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-001 **Matrix:** SOIL **Received Date:** 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Fluoride	0.34	0.30		mg/Kg	1	8/5/2019 10:44:43 AM	46581
Chloride	3800	150		mg/Kg	100	8/5/2019 1:26:02 PM	46581
Nitrogen, Nitrite (As N)	ND	6.0		mg/Kg	20	8/5/2019 10:57:07 AM	46581
Bromide	37	6.0		mg/Kg	20	8/5/2019 10:57:07 AM	46581
Nitrogen, Nitrate (As N)	0.96	0.30		mg/Kg	1	8/5/2019 10:44:43 AM	46581
Sulfate	980	30		mg/Kg	20	8/5/2019 10:57:07 AM	46581
RESISTIVITY AND EC SOIL						Analyst:	**JRR**
Conductivity	7070	1.00		µmhos/c	1	8/6/2019 8:36:00 AM	46596
EPA METHOD 6010B: SOIL METALS						Analyst:	**bcv**
Calcium	82000	490		mg/Kg	20	8/6/2019 9:33:03 PM	46603
Magnesium	4500	120		mg/Kg	5	8/6/2019 5:39:29 PM	46603
Potassium	640	240		mg/Kg	5	8/6/2019 5:39:29 PM	46603
Sodium	1700	120		mg/Kg	5	8/6/2019 5:39:29 PM	46603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Base @ 8Ft
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-002 **Matrix:** SOIL **Received Date:** 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Fluoride	0.43	0.30		mg/Kg	1	8/5/2019 11:09:31 AM	46581
Chloride	4700	300		mg/Kg	200	8/5/2019 1:38:27 PM	46581
Nitrogen, Nitrite (As N)	ND	6.0		mg/Kg	20	8/5/2019 11:21:56 AM	46581
Bromide	50	6.0		mg/Kg	20	8/5/2019 11:21:56 AM	46581
Nitrogen, Nitrate (As N)	1.4	0.30		mg/Kg	1	8/5/2019 11:09:31 AM	46581
Sulfate	640	30		mg/Kg	20	8/5/2019 11:21:56 AM	46581
RESISTIVITY AND EC SOIL						Analyst:	**JRR**
Conductivity	7500	1.00		µmhos/c	1	8/6/2019 8:36:00 AM	46596
EPA METHOD 6010B: SOIL METALS						Analyst:	**bcv**
Calcium	150000	1200		mg/Kg	50	8/6/2019 9:36:26 PM	46603
Magnesium	4300	120		mg/Kg	5	8/6/2019 5:41:10 PM	46603
Potassium	580	240		mg/Kg	5	8/6/2019 5:41:10 PM	46603
Sodium	2500	120		mg/Kg	5	8/6/2019 5:41:10 PM	46603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: Wall-Comp
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-003 **Matrix:** SOIL **Received Date:** 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Fluoride	1.1	0.30		mg/Kg	1	8/5/2019 11:34:20 AM	46581
Chloride	1400	75		mg/Kg	50	8/5/2019 1:50:52 PM	46581
Nitrogen, Nitrite (As N)	ND	6.0		mg/Kg	20	8/5/2019 11:46:45 AM	46581
Bromide	13	0.30		mg/Kg	1	8/5/2019 11:34:20 AM	46581
Nitrogen, Nitrate (As N)	2.8	0.30		mg/Kg	1	8/5/2019 11:34:20 AM	46581
Sulfate	300	30		mg/Kg	20	8/5/2019 11:46:45 AM	46581
RESISTIVITY AND EC SOIL						Analyst:	**JRR**
Conductivity	3970	1.00		µmhos/c	1	8/6/2019 8:36:00 AM	46596
EPA METHOD 6010B: SOIL METALS						Analyst:	**bcv**
Calcium	66000	480		mg/Kg	20	8/6/2019 9:39:49 PM	46603
Magnesium	4100	120		mg/Kg	5	8/6/2019 5:42:52 PM	46603
Potassium	710	240		mg/Kg	5	8/6/2019 5:42:52 PM	46603
Sodium	710	120		mg/Kg	5	8/6/2019 5:42:52 PM	46603

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SP1
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-004
Matrix: SOIL
Received Date: 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	3700	150		mg/Kg	50	8/5/2019 2:03:16 PM	46581

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SP2
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-005 **Matrix:** SOIL **Received Date:** 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	3700	150		mg/Kg	50	8/5/2019 2:15:40 PM	46581

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SP3
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-006
Matrix: SOIL
Received Date: 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	3700	150		mg/Kg	50	8/5/2019 2:28:04 PM	46581

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SP4
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-007
Matrix: SOIL
Received Date: 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	5100	150		mg/Kg	50	8/5/2019 3:05:19 PM	46581

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: SP5
Project: Juniper Release
Collection Date: 8/1/2019
Lab ID: 1908144-008 **Matrix:** SOIL **Received Date:** 8/3/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	1500	60		mg/Kg	20	8/5/2019 1:13:37 PM	46581

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908144**

08-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46581**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **46581**	RunNo: **61901**
Prep Date: **8/5/2019**	Analysis Date: **8/5/2019**	SeqNo: **2099842** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID: **LCS-46581**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **46581**	RunNo: **61901**
Prep Date: **8/5/2019**	Analysis Date: **8/5/2019**	SeqNo: **2099843** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	97.9	90	110			
Chloride	14	1.5	15.00	0	92.1	90	110			
Nitrogen, Nitrite (As N)	2.8	0.30	3.000	0	93.7	90	110			
Bromide	7.0	0.30	7.500	0	94.0	90	110			
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	96.7	90	110			
Sulfate	28	1.5	30.00	0	94.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908144**

08-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46603**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **46603**	RunNo: **61954**
Prep Date: **8/5/2019**	Analysis Date: **8/6/2019**	SeqNo: **2101426** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	25								
Magnesium	ND	25								
Potassium	ND	50								
Sodium	ND	25								

Sample ID: **LCS-46603**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **46603**	RunNo: **61954**
Prep Date: **8/5/2019**	Analysis Date: **8/6/2019**	SeqNo: **2101428** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2600	25	2500	0	104	80	120			
Magnesium	2500	25	2500	0	101	80	120			
Potassium	2500	50	2500	0	99.9	80	120			
Sodium	2500	25	2500	0	99.2	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1908144** RcptNo: **1**

Received By: **Erin Melendrez** **8/3/2019 9:30:00 AM**

Completed By: **Erin Melendrez** **8/3/2019 10:33:13 AM**

Reviewed By: DAD 8/5/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENM 8/5/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.0	Good	Yes			

Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Same Day
☐ Standard ☒ Rush

Project Name: Juniper Release

Project #:

Project Manager: Lori OBrien

Sampler: Lori O.
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 4.1-0.1(CF)=4.0°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1908144	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	F, Br, NO_3, NO_2, PO_4, SO_4 (#)	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Cation/Anions	SC	Cl- only
08/01/19		Soil	Base @ 12ft	JAR(1)	Ice	-001											X	X	X
			Base @ 8ft			-002											X	X	X
			WALL-COMP			-003											X	X	X
			SP1			-004													X
			SP2			-005													X
			SP3			-006													X
			SP4			-007													X
			SP5			-008													X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
08/02/19	11:00				8/2/19	1100
8/2/19	1900			courier	8/3/19	0930

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 13, 2019

Lori O'Brien

Lucid Energy Delaware
326 West Quay St
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Juniper Release OrderNo.: 1908494

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 9 sample(s) on 8/9/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908494

Lab ID: 1908494-001 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: SP #3 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	4900	150		mg/Kg	50	8/12/2019 12:07:23 PM	46711

Lab ID: 1908494-002 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: SP #4 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	4900	150		mg/Kg	50	8/12/2019 12:19:47 PM	46711

Lab ID: 1908494-003 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: Wall East **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	3300	150		mg/Kg	50	8/12/2019 12:32:11 PM	46711

Lab ID: 1908494-004 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: Surf Exc #1 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	4600	150		mg/Kg	50	8/12/2019 12:44:35 PM	46711

Lab ID: 1908494-005 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: Surf Exc #5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	8000	300		mg/Kg	100	8/12/2019 1:21:49 PM	46711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908494

Lab ID: 1908494-006 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: Surf Exc #8 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	3300	150		mg/Kg	50	8/12/2019 1:34:14 PM	46711

Lab ID: 1908494-007 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: Trench Base **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	840	59		mg/Kg	20	8/9/2019 7:01:20 PM	46711

Lab ID: 1908494-008 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: SP #1 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	1100	60		mg/Kg	20	8/9/2019 7:13:44 PM	46711

Lab ID: 1908494-009 **Collection Date:** 8/7/2019 7:00:00 PM
Client Sample ID: SP #2 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	1100	60		mg/Kg	20	8/9/2019 7:26:09 PM	46711

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908494**

13-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46711**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **46711**	RunNo: **62026**
Prep Date: **8/9/2019**	Analysis Date: **8/9/2019**	SeqNo: **2105614** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46711**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **46711**	RunNo: **62026**
Prep Date: **8/9/2019**	Analysis Date: **8/9/2019**	SeqNo: **2105615** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
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Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1908494** RcptNo: **1**

Received By: Dane/ M. **8/9/2019 8:30:00 AM**

Completed By: **Leah Baca** **8/9/2019 10:02:15 AM** Leah Baca

Reviewed By: JO 8/9/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 8/9/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.2	Good	Yes			
2	5.5	Good	Yes			

Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: on file.

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Monday 24 hr
☐ Standard ☐ Rush

Project Name: Juniper Release.

Project #:

Project Manager: Lori OBrien.

Sampler: Lori O.

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CF): 4.3-0.1=4.2/5.6-0.1=5.5 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1908494	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)		EPA 300 Cl-				
08/07/19		Soil	SP#3	JAR(1)	ICE	-001												X				
			SP #4	JAR(1)		-002												X				
			Wall East			-003												X				
			SURF EXC #1			-004												X				
			SURF EXC #5			-005												X				
			SURF EXC #8			-006												X				
			Trench Base			-007												X				
			SP #1			-008												X				
			SP #2			-009												X				

Date	Time	Relinquished by	Received by	Via	Date	Time
8/8/19	11:00				8/8/19	1100
8-9-19	800			courier	8/9/19	7:30

Remarks: lobrien@hrlcomp.com.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 20, 2019

Lori O'Brien

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX

RE: Juniper Release OrderNo.: 1908962

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 8 sample(s) on 8/17/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908962

Lab ID: 1908962-001 **Collection Date:** 8/15/2019
Client Sample ID: BLM-1 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	8800	300		mg/Kg	100	8/19/2019 11:04:30 PM	46875

Lab ID: 1908962-002 **Collection Date:** 8/15/2019
Client Sample ID: BLM-2 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	180	60		mg/Kg	20	8/19/2019 11:17:07 AM	46875

Lab ID: 1908962-003 **Collection Date:** 8/15/2019
Client Sample ID: BLM-3 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	3300	150		mg/Kg	50	8/19/2019 11:16:54 PM	46875

Lab ID: 1908962-004 **Collection Date:** 8/15/2019
Client Sample ID: BLM-4 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	1100	60		mg/Kg	20	8/19/2019 11:41:56 AM	46875

Lab ID: 1908962-005 **Collection Date:** 8/15/2019
Client Sample ID: BLM-5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/19/2019 11:54:20 AM	46875

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908962

Lab ID: 1908962-006 **Collection Date:** 8/15/2019
Client Sample ID: Road 1 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	550	60		mg/Kg	20	8/19/2019 12:31:34 PM	46875

Lab ID: 1908962-007 **Collection Date:** 8/15/2019
Client Sample ID: Background 2 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	8/19/2019 12:43:59 PM	46875

Lab ID: 1908962-008 **Collection Date:** 8/15/2019
Client Sample ID: Top Soil **Matrix:** MEOH (SOIL)

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	61		mg/Kg	20	8/19/2019 12:56:24 PM	46875
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/19/2019 7:15:51 PM	46869
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	8/19/2019 7:15:51 PM	46869
Surr: DNOP	94.3	70-130		%Rec	1	8/19/2019 7:15:51 PM	46869
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	8/18/2019 3:25:48 PM	46868
Surr: BFB	102	77.4-118		%Rec	1	8/18/2019 3:25:48 PM	46868
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	8/18/2019 3:25:48 PM	46868
Toluene	ND	0.035		mg/Kg	1	8/18/2019 3:25:48 PM	46868
Ethylbenzene	ND	0.035		mg/Kg	1	8/18/2019 3:25:48 PM	46868
Xylenes, Total	ND	0.070		mg/Kg	1	8/18/2019 3:25:48 PM	46868
Surr: 4-Bromofluorobenzene	95.2	80-120		%Rec	1	8/18/2019 3:25:48 PM	46868

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908962**

20-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46875**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **46875**	RunNo: **62258**
Prep Date: **8/19/2019**	Analysis Date: **8/19/2019**	SeqNo: **2114898** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46875**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **46875**	RunNo: **62258**
Prep Date: **8/19/2019**	Analysis Date: **8/19/2019**	SeqNo: **2114899** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908962**

20-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **LCS-46869** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **46869** RunNo: **62218**

Prep Date: **8/18/2019** Analysis Date: **8/19/2019** SeqNo: **2113073** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	63.9	124			
Surr: DNOP	4.8		5.000		96.6	70	130			

Sample ID: **MB-46869** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **46869** RunNo: **62218**

Prep Date: **8/18/2019** Analysis Date: **8/19/2019** SeqNo: **2113074** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		100	70	130			

Sample ID: **LCS-46873** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **46873** RunNo: **62218**

Prep Date: **8/19/2019** Analysis Date: **8/19/2019** SeqNo: **2113710** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.8	70	130			

Sample ID: **MB-46873** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **46873** RunNo: **62218**

Prep Date: **8/19/2019** Analysis Date: **8/19/2019** SeqNo: **2113712** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		100	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908962**

20-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46868**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **46868**	RunNo: **62216**
Prep Date: **8/17/2019**	Analysis Date: **8/18/2019**	SeqNo: **2112812** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	980		1000		97.6	77.4	118			

Sample ID: **LCS-46868**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **46868**	RunNo: **62216**
Prep Date: **8/17/2019**	Analysis Date: **8/18/2019**	SeqNo: **2112813** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	92.0	80	120			
Surr: BFB	1100		1000		115	77.4	118			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908962**

20-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46868**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **46868**	RunNo: **62216**
Prep Date: **8/17/2019**	Analysis Date: **8/18/2019**	SeqNo: **2112829** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		89.8	80	120			

Sample ID: **LCS-46868**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **46868**	RunNo: **62216**
Prep Date: **8/17/2019**	Analysis Date: **8/18/2019**	SeqNo: **2112830** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.4	80	120			
Toluene	0.97	0.050	1.000	0	96.9	80	120			
Ethylbenzene	0.99	0.050	1.000	0	98.6	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.7	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1908962** RcptNo: **1**

Received By: **Erin Melendrez** **8/17/2019 2:25:00 PM**

Completed By: **Erin Melendrez** **8/17/2019 2:59:24 PM**

Reviewed By: TO 8/19/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENH 8/17/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good	Yes			

Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: Profile.

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: 24 hour
☐ Standard ☒ Rush

Project Name: Juniper Release.

Project #:

Project Manager: Lori OBrien

Sampler: Lori O

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 5.1+0.1(CF)=5.2°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1908962	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)		Cl 300.0				
08/15/19		Soil	BLM - 1	Jar (1)	Ice	-001												X				
			2			-002												X				
			3			-003												X				
			4			-004												X				
			5			-005												X				
			Road 1			-006												X				
			Background 2			-007	~~X~~	~~X~~										X				
			Top Soil			-008	X	X										X				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8/16/19	800				8/16/19	0800
8/16/19	1200			courier	8/17/19	1425

Remarks: lobrien@hrlcmp.com.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 26, 2019

Lori O'Brien

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Juniper Release OrderNo.: 1908928

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 21 sample(s) on 8/16/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908928

Lab ID: 1908928-001 **Collection Date:** 8/14/2019
Client Sample ID: Base 1 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	2300	60		mg/Kg	20	8/22/2019 4:16:35 PM	46985

Lab ID: 1908928-002 **Collection Date:** 8/14/2019
Client Sample ID: Base 2 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	110	60		mg/Kg	20	8/22/2019 4:29:00 PM	46985

Lab ID: 1908928-003 **Collection Date:** 8/14/2019
Client Sample ID: Base 3 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	250	60		mg/Kg	20	8/22/2019 4:41:25 PM	46985

Lab ID: 1908928-004 **Collection Date:** 8/14/2019
Client Sample ID: Base 4 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	410	60		mg/Kg	20	8/22/2019 5:43:27 PM	46993

Lab ID: 1908928-005 **Collection Date:** 8/14/2019
Client Sample ID: Base 5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	1100	60		mg/Kg	20	8/22/2019 5:55:52 PM	46993

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908928

Lab ID: 1908928-006 **Collection Date:** 8/14/2019
Client Sample ID: Base 6 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	220	61		mg/Kg	20	8/22/2019 6:08:16 PM	46993

Lab ID: 1908928-007 **Collection Date:** 8/14/2019
Client Sample ID: Base 7 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	500	60		mg/Kg	20	8/22/2019 6:20:41 PM	46993

Lab ID: 1908928-008 **Collection Date:** 8/14/2019
Client Sample ID: Base 8 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	320	60		mg/Kg	20	8/22/2019 6:33:05 PM	46993

Lab ID: 1908928-009 **Collection Date:** 8/14/2019
Client Sample ID: Base 9 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	1900	60		mg/Kg	20	8/22/2019 6:45:30 PM	46993

Lab ID: 1908928-010 **Collection Date:** 8/14/2019
Client Sample ID: Base 10 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	4800	150		mg/Kg	50	8/23/2019 3:21:03 PM	46993

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908928

Lab ID: 1908928-011 **Collection Date:** 8/14/2019
Client Sample ID: Base 11 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	2400	60		mg/Kg	20	8/22/2019 7:59:59 PM	46993

Lab ID: 1908928-012 **Collection Date:** 8/14/2019
Client Sample ID: Base 12 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	5900	300		mg/Kg	100	8/23/2019 3:33:27 PM	46993

Lab ID: 1908928-013 **Collection Date:** 8/14/2019
Client Sample ID: Base 13 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	1200	60		mg/Kg	20	8/22/2019 8:24:48 PM	46993

Lab ID: 1908928-014 **Collection Date:** 8/14/2019
Client Sample ID: Base 14 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	8/22/2019 8:37:12 PM	46993

Lab ID: 1908928-015 **Collection Date:** 8/14/2019
Client Sample ID: Wall 1 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	210	60		mg/Kg	20	8/22/2019 8:49:37 PM	46993

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908928

Lab ID: 1908928-016 **Collection Date:** 8/14/2019
Client Sample ID: Wall 2 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	160	60		mg/Kg	20	8/22/2019 9:26:49 PM	46993

Lab ID: 1908928-017 **Collection Date:** 8/14/2019
Client Sample ID: Wall 3 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	60	60		mg/Kg	20	8/22/2019 9:39:13 PM	46993

Lab ID: 1908928-018 **Collection Date:** 8/14/2019
Client Sample ID: Wall 4 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	980	60		mg/Kg	20	8/22/2019 10:16:27 PM	46993

Lab ID: 1908928-019 **Collection Date:** 8/14/2019
Client Sample ID: Wall 5 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	250	60		mg/Kg	20	8/22/2019 10:28:51 PM	46993

Lab ID: 1908928-020 **Collection Date:** 8/14/2019
Client Sample ID: Wall 6 **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	200	60		mg/Kg	20	8/22/2019 10:41:16 PM	46993

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1908928

Lab ID: 1908928-021
Collection Date: 8/14/2019
Client Sample ID: Bkgrnd (1)
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	150	60		mg/Kg	20	8/22/2019 10:53:41 PM	46993

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1908928**

26-Aug-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-46985** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **46985** RunNo: **62350**

Prep Date: **8/22/2019** Analysis Date: **8/22/2019** SeqNo: **2119770** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46985** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **46985** RunNo: **62350**

Prep Date: **8/22/2019** Analysis Date: **8/22/2019** SeqNo: **2119771** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.0	90	110			

Sample ID: **MB-46993** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **46993** RunNo: **62350**

Prep Date: **8/22/2019** Analysis Date: **8/22/2019** SeqNo: **2119810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-46993** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **46993** RunNo: **62350**

Prep Date: **8/22/2019** Analysis Date: **8/22/2019** SeqNo: **2119811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1908928** RcptNo: **1**

Received By: **Leah Baca** **8/16/2019 10:15:00 AM** Leah Baca

Completed By: **Leah Baca** **8/16/2019 11:04:51 AM** Leah Baca

Reviewed By: mp 08/16/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: ENM 8/16/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			
2	2.3	Good	Yes			

Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush 3 day Turn

Project Name: Juniper Release.

Project #:

Project Manager: Lori OBrien

Sampler: Lori O

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.8-0.4=3.4C (°C) 2.7-0.4=2.3C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1908928	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)		Cl, SO_4 300				
8/14/19		Soil	Base 1	1ar(1)	Ice	-001												X				
			" 2			-002												X				
			" 3			-003												X				
			" 4			-004												X				
			" 5			-005												X				
			" 6			-006												X				
			" 7			-007												X				
			" 8			-008												X				
			" 9			-009												X				
			" 10			-010												X				
			" 11			-011												X				
			" 12			-012												X				

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
8/15/19	1200				8/15/19	1200
8/15/19	1900			Courier	8/16/19	1015

Remarks: lobrien@hrlcomp.com

Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: on file.

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush 5 day Turn

Project Name: Juniper Release.

Project #:

Project Manager: Lori OBrien

Sampler: Lori O

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 3.8 -0.4 = 3.4C (°C)
2.7 -0.4 = 2.3C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1908929	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)		Cl - EPA 300				
8/14/19		Soil	Base #13	JAR(1)		-013												X				
			" 14			-014												X				
			Wall 1			-015												X				
			Wall 2			-016												X				
			Wall 3			-017												X				
			Wall 4			-018												X				
			Wall 5			-019												X				
			Wall 6			-020												X				
			Bkgnd.(1)			-021												X				

Date	Time	Relinquished by:	Received by	Via:	Date	Time
8/15/19	1200				8/15/19	1200
8/15/19	1910			Courier	8/16	1015

Remarks:
lobrien@hrlcomp.com

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 10, 2019

Lori O'Brien

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Juniper Release OrderNo.: 1909004

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/31/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Project: Juniper Release
Lab Order: 1909004

Lab ID: 1909004-001 **Collection Date:** 8/28/2019
Client Sample ID: #1a North Wall **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	200	60		mg/Kg	20	9/9/2019 1:34:32 PM	47343

Lab ID: 1909004-002 **Collection Date:** 8/28/2019
Client Sample ID: #1b South Wall **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	280	60		mg/Kg	20	9/9/2019 1:46:57 PM	47343

Lab ID: 1909004-003 **Collection Date:** 8/29/2019
Client Sample ID: #2a North Wall **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	580	60		mg/Kg	20	9/9/2019 2:24:11 PM	47343

Lab ID: 1909004-004 **Collection Date:** 8/29/2019
Client Sample ID: #3 Base @ 5ft **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	1700	60		mg/Kg	20	9/9/2019 2:36:35 PM	47343

Lab ID: 1909004-005 **Collection Date:** 8/29/2019
Client Sample ID: #4 East Wall **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	9/9/2019 2:49:00 PM	47343

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909004**

10-Sep-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-47343**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **47343**	RunNo: **62754**
Prep Date: **9/9/2019**	Analysis Date: **9/9/2019**	SeqNo: **2138648** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-47343**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **47343**	RunNo: **62754**
Prep Date: **9/9/2019**	Analysis Date: **9/9/2019**	SeqNo: **2138649** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1909004** RcptNo: **1**

Received By: **Andy Freeman** **8/31/2019 8:05:00 AM**

Completed By: **Erin Melendrez** **9/3/2019 7:46:53 AM**

Reviewed By: LB 9/3/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 9/3/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.4	Good	Yes			

Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day Turn
☒ Standard ☐ Rush

Project Name: Juniper Release

Project #:

Project Manager: Lori O'Brien.

Sampler: Lori O

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.2 +0.2 = 3.4 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1909004	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Cl (EPA 300.0)
08/28		Soil	#1a North Wall	JAR(1)	Ice	-001											X
08/28		↓	#1b South Wall	↓	↓	-002											X
08/28		↓	#2a North Wall	↓	↓	-003											X
08/28		↓	#3 Base @ 5ft	↓	↓	-004											X
08/28		↓	#4 East Wall	↓	↓	-005											X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
8/30/19	0930				8/30/19	0930
8/30/19	1900				8/31/19	0805

Remarks: lobrien@hrlcomp.com.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 11, 2019

Lori O'Brien

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Juniper Release OrderNo.: 1909317

Dear Lori O'Brien:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/7/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1909317**
Date Reported: **9/11/2019**

CLIENT: Lucid Energy Delaware
Client Sample ID: South Wall
Project: Juniper Release
Collection Date: 9/4/2019
Lab ID: 1909317-001 **Matrix:** SOIL **Received Date:** 9/7/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	9/10/2019 6:43:07 PM	47385

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: BLM #4 Re
Project: Juniper Release
Collection Date: 9/5/2019
Lab ID: 1909317-002
Matrix: SOIL
Received Date: 9/7/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	600	60		mg/Kg	20	9/10/2019 7:20:21 PM	47385

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy Delaware
Client Sample ID: BLM #1 Re
Project: Juniper Release
Collection Date: 9/5/2019
Lab ID: 1909317-003
Matrix: SOIL
Received Date: 9/7/2019 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	79	60		mg/Kg	20	9/10/2019 7:32:45 PM	47385

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909317**

11-Sep-19

Client: Lucid Energy Delaware

Project: Juniper Release

Sample ID: **MB-47385**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **47385**	RunNo: **62808**
Prep Date: **9/10/2019**	Analysis Date: **9/10/2019**	SeqNo: **2139935** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-47385**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **47385**	RunNo: **62808**
Prep Date: **9/10/2019**	Analysis Date: **9/10/2019**	SeqNo: **2139936** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1909317** RcptNo: **1**

Received By: **Yazmine Garduno** **9/7/2019 9:30:00 AM** Yazmine Garduno

Completed By: **Yazmine Garduno** **9/7/2019 11:15:42 AM** Yazmine Garduno

Reviewed By: ENM 9/7/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: YUG 9/7/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.2	Good				
2	3.1	Good				
3	3.9	Good				

Chain-of-Custody Record

Client: Lucid Energy

Mailing Address: on file

Phone #:

email or Fax#:

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 48 hour
☐ Standard ☒ Rush

Project Name: Juniper Release.

Project #:

Project Manager: Lori OBrien

Sampler: Lori O

On Ice: ☒ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No 1909317
09/04/19		Soil	South Wall	1 AR (1)	Ice	-001
09/05/19		Soil	BLM #4 Re	↓	↓	-002
"		"	BLM #1 Re	↓	↓	-003

Analysis Request

BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Cl - 300.0					
										X					
										X					
										X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
09/06/19					9/7/19	0900
9/6/19	1900		YNO	courier	9/7/19	0430

Remarks:
4.9 + 0.3 = 5.2°
2.8 + 0.3 = 3.1°
3.6 + 0.3 = 3.9°