



WSP USA

3300 North "A" Street  
Building 1, Unit 222  
Midland, Texas 79705  
432.704.5178

May 16, 2022

District I  
New Mexico Oil Conservation Division  
1625 N. French Drive  
Hobbs, New Mexico 88240

**RE: Closure Request  
Thistle Compressor Station  
Incident Number NAPP2136138685  
Lea County, New Mexico**

To Whom It May Concern:

WSP USA Inc. (WSP) on behalf of Lucid Energy Delaware, LLC (Lucid), presents the following Closure Request detailing site assessment, excavation, and soil sampling activities at the Thistle Compressor Station (Site) located in Unit N, Section 17, Township 24 South, Range 33 East, in Lea County, New Mexico (Figure 1). The purpose of the site assessment, excavation, and soil sampling activities was to address impacts to soil following a release of pipeline fluids at the Site. Based on excavation activities and soil sample laboratory analytical results, Lucid is submitting this Closure Request and requesting no further action (NFA) for Incident Number NAPP2136138685.

## **RELEASE BACKGROUND**

On December 16, 2021, an operator left a valve open on the inlet scrubber allowing lube oil from the discharge line to be released, resulting in the release of approximately 5 barrels (bbls) of pipeline fluid onto the pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids and recovered 3 bbls of fluid. Lucid reported the release to the New Mexico Oil Conservation Division (NMOCD) and subsequently submitted a Release Notification and Corrective Action Form C-141 (Form C-141) on December 30, 2021. The release was assigned Incident Number NAPP2136138685.

## **SITE CHARACTERIZATION**

WSP characterized the Site according to Table 1, *Closure Criteria for Soils Impacted by a Release*, of Title 19, Chapter 15, Part 29, Section 12 (19.15.29.12) of the New Mexico Administrative Code (NMAC). Depth to groundwater at the Site is estimated to be greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) C-02432, located approximately 0.45 miles east of the Site. The groundwater well has a reported depth to groundwater of 415 feet bgs and a total depth of 640 feet bgs. Ground surface elevation



at the groundwater well location is 3,568 feet amsl, which is approximately 15 feet higher in elevation than the Site. The referenced well records are included in attachment 1.

The closest continuously flowing water or significant watercourse to the Site is a freshwater pond, located approximately 0.4 miles east of the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (low potential karst designation area). Site receptors are identified on Figure 1.

## **CLOSURE CRITERIA**

Based on the results of the Site Characterization, the following NMOCD Table 1 Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

## **DELINEATION ACTIVITIES AND SOIL SAMPLE ANALYTICAL RESULTS**

On February 10, 2022, WSP personnel went to the Site to perform delineation activities. Boreholes were advanced via hand auger at seven locations within and around the release extent to assess the lateral and vertical extent of impacted soil. Boreholes HA-1-N through HA-7-S were advanced to a depth of 1-foot bgs. Delineation soil samples were collected at 0.5 feet and 1-foot bgs from each borehole. Soil from the boreholes was field screened for volatile aromatic hydrocarbons and chloride utilizing PID and Hach® chloride QuanTab® test strips, respectively. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Attachment 1. The borehole delineation soil sample locations are depicted on Figure 3.

Laboratory analytical results for delineation sample from borehole HA-1-N, advanced within the release extent, indicated that TPH concentrations exceeded the Closure Criteria. Laboratory analytical results for the delineation samples from boreholes HA-2-S through HA-7-S, advanced within the release extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the Closure Criteria, and successfully defined the extent of the release.



## EXCAVATION ACTIVITIES AND SOIL SAMPLE ANALYTICAL RESULTS

On April 21 and 22<sup>nd</sup> WSP returned to the Site to oversee the removal of impacted soil from the release area as indicated by visible staining, field screening activities, and laboratory analytical results for the preliminary and delineation soil samples. Excavation activities were performed using a back-hoe and a hydro-vac. To direct excavation activities, WSP screened soil for volatile aromatic hydrocarbons and chloride utilizing a PID and Hach® chloride QuanTab® test strips, respectively. Photographic documentation is included in Attachment 2.

Following removal of impacted soil, WSP collected 5-point composite soil samples every 200 square feet from the floor of the excavation. Due to the shallow depth of the excavation sidewall samples were not warranted and are represented in the floor samples. The 5-point composite samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01, FS02, and FS03 were collected from the floor of the excavation from a depth of 0.5 to 1-foot bgs. The excavation soil samples were collected, handled, and analyzed following the same procedures as described above. The excavation extent and excavation soil sample locations are presented on Figure 4.

The excavation area totaled approximately 498 square feet. A total of approximately 18 cubic yards of impacted soil was removed during the excavation activities. The impacted soil was transported and properly disposed of at both R360 and Lea Land disposal in Carlsbad, New Mexico. After completion of confirmation sampling, the excavation area was backfilled.

Laboratory analytical results for excavation floor samples FS01, FS02 and FS03, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the most stringent Closure Criteria. Laboratory analytical results are summarized in Table 1 and laboratory analytical reports are included as Attachment 3.

## CLOSURE REQUEST

Site assessment and excavation activities were conducted to address the December 16, 2021, release of crude oil and produced water at the Site. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated that benzene, BTEX, TPH-GRO/TPH-DRO, TPH, and chloride concentrations were compliant with the most stringent Closure Criteria. Based on the soil sample analytical results, no further remediation is required. Lucid backfilled the excavation with material purchased locally and recontoured the Site to match pre-existing site conditions.

Depth to groundwater has been determined to be greater than 100 feet bgs and no other sensitive receptors were identified near the release extent. WSP and Lucid believe these remedial actions are protective of human health, the environment, and groundwater. As such, Lucid respectfully requests no further action for Incident Number NAPP2136138685. A signed C141 Closure Request is included in Attachment 5.



District I  
Page 4

If you have any questions or comments, please do not hesitate to contact Mr. Travis Casey at (575) 689-5949.

Sincerely,

WSP USA Inc.

A handwritten signature in grey ink that reads 'pbenner'.

Payton Benner  
Assistant Consultant, Geologist

A handwritten signature in black ink that reads 'Travis L Casey'.

Travis Casey  
Consultant, Environmental Scientist

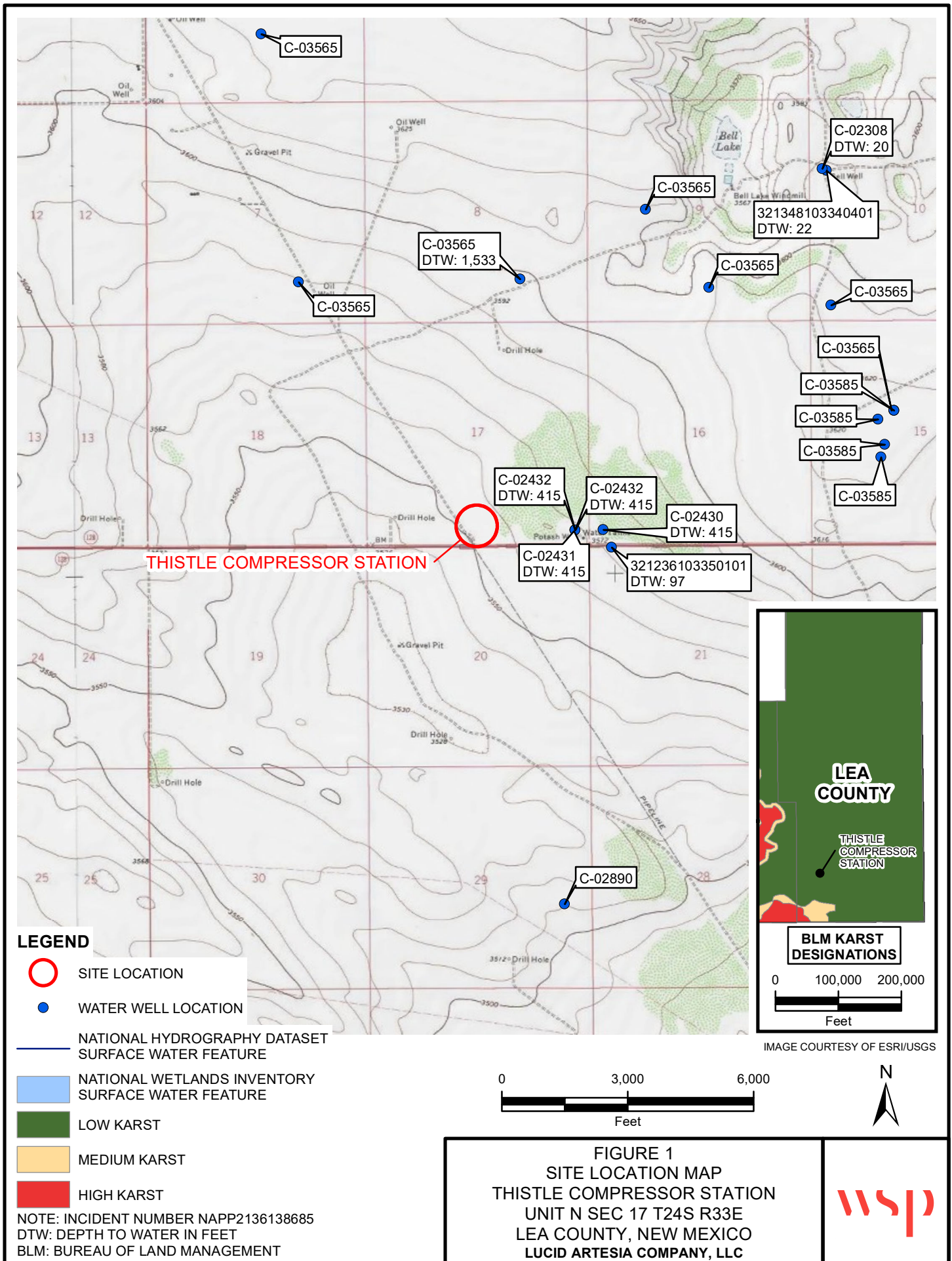
cc: Michael Gant, Lucid Energy Delaware, LLC

Attachments:

- Figure 1 Site Location Map
- Figure 2 Delineation Soil sample Locations
- Figure 3 Excavation Soil Sample Locations
- Table 1 Soil Analytical Results
- Attachment 1 Referenced Well Records
- Attachment 2 Lithologic/Sampling Log
- Attachment 3 Photographic Log
- Attachment 4 Laboratory Analytical Reports
- Attachment 5 C141 Closure Request



FIGURES

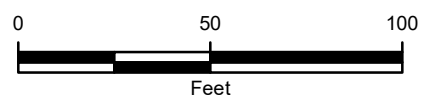


**LEGEND**

- DELINEATION SOIL SAMPLE WITH CONCENTRATIONS EXCEEDING APPLICABLE CLOSURE CRITERIA
- DELINEATION SOIL SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
- RELEASE EXTENT

NOTE: INCIDENT NUMBER NAPP2136138685  
 SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

IMAGE COURTESY OF ESRI





**FIGURE 2**  
 DELINEATION SOIL SAMPLE LOCATIONS  
 THISTLE COMPRESSOR STATION  
 UNIT N SEC 17 T24S R33E  
 LEA COUNTY, NEW MEXICO  
 LUCID ARTESIA COMPANY, LLC

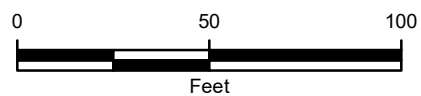




IMAGE COURTESY OF ESRI

**LEGEND**

-  FLOOR SAMPLE IN COMPLIANCE WITH APPLICABLE CLOSURE CRITERIA
-  EXCAVATION EXTENT



NOTE: INCIDENT NUMBER NAPP2136138685  
SAMPLE ID@DEPTH BELOW GROUND SURFACE (FEET)

**FIGURE 3**  
**EXCAVATION SOIL SAMPLE LOCATIONS**  
**THISTLE COMPRESSOR STATION**  
**UNIT N SEC 17 T24S R33E**  
**LEA COUNTY, NEW MEXICO**  
**LUCID ARTESIA COMPANY, LLC**



TABLES



Table 1

Soil Analytical Results  
Thistle Station Scrubber  
Incident Number NAPP2136138685  
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft bgs)	Benzene (mg/kg)	BTEX (mg/kg)	TPH-DRO (mg/kg)	TPH-GRO (mg/kg)	TPH-ORO (mg/kg)	Total GRO+DRO (mg/kg)	TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Surface Samples										
SS01	04/21/2022	0.5	ND	ND	74	ND	ND	74	74	ND
SS02	04/21/2022	0.5	ND	ND	ND	ND	ND	ND	ND	170
SS03	04/21/2022	0.5	ND	ND	89	ND	ND	89	ND	ND
SS04	04/21/2022	0.5	ND	ND	ND	ND	ND	ND	ND	ND
Delineation Soil Samples										
HA-1-N	2/10/2022	0.5	11	588	18,000	3,800	ND	21,800	21,800	1,800
HA-2-S	2/10/2022	0.5	0.12	1.05	31	ND	ND	31	31	1,800
HA-3-N	2/10/2022	0.5	5.1	448.1	11,000	3,400	1,100	14,400	15,500	ND
HA-4-C	2/10/2022	0.5	ND	ND	58	ND	ND	33.9	33.9	940
HA-5-S	2/10/2022	0.5	ND	0.215	ND	ND	ND	ND	ND	ND
HA-6-N	02/10/2022	0.5	ND	0.22	360	12	78	372	450	ND
HA-7-S	02/10/2022	0.5	ND	ND	93	ND	ND	93	93	1,200
Excavation Floor Samples										
FS01	0.5	04/21/2022	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	<50.0	6.83
FS02	0.5	04/21/2022	<0.00198	<0.00397	<50.0	<50.0	<50.0	<50.0	<50.0	127
FS03	1	04/22/2022	ND	ND	ND	ND	ND	ND	ND	ND

**Notes:**

ft - feet/foot

mg/kg - milligrams per kilograms

BTEX - benzene, toluene, ethylbenzene, and total xylenes

TPH - total petroleum hydrocarbons

DRO - diesel range organics

GRO - gasoline range organics

ORO - oil range organics

ND- not detectable

NMOCD - New Mexico Oil Conservation Division

NMAC - New Mexico Administrative Code

&lt; - indicates result is less than the stated laboratory method practical quantitation limit

NE - Not Established

**BOLD** - indicates results exceed the higher of the background sample result or applicable regulatory standard

Greyed data represents samples that were excavated

ATTACHMENT 1: REFERENCED WELL RECORD




# New Mexico Office of the State Engineer

## Water Right Summary


[get image list](#)

**WR File Number:** C 02432      **Subbasin:** CUB      **Cross Reference:** -  
**Primary Purpose:** COM    COMMERCIAL  
**Primary Status:** DCL    DECLARATION  
**Total Acres:** 0      **Subfile:** -      **Header:** -  
**Total Diversion:** 128      **Cause/Case:** -  
**Owner:** MARK T MCCLOY  
**Owner:** NM COMMISSIONER OF PUBLIC LAND  
**Contact:** FAITH CROSBY  
**Owner:** ANNETTE E MCCLOY

### Documents on File

Trn #	Doc	File/Act	Status		Transaction Desc.	From/		Acres	Diversion	Consumptive
			1	2		To				
	<a href="#">604757</a>	<a href="#">COWNF</a>	<a href="#">2017-03-13</a>	CHG	PRC	C 02432	T	0	0	

[get images](#)

### Current Points of Diversion

POD Number	Well Tag	Source	Q				(NAD83 UTM in meters)		Other Location Desc
			64	Q16	Q4	Sec	Tws	Rng	
<a href="#">C 02432</a>		Shallow	4	4	4	17	24S	33E	633175 3564728*

\*An (\*) after northing value indicates UTM location was derived from PLSS - see Help

### Place of Use

Q	Q					Acres	Diversion	CU	Use	Priority	Status	Other Location Desc
256	64	Q16	Q4	Sec	Tws							
						0	72.45		COM		DCL	NO PLACE OF USE GIVEN.

### Source

Acres	Diversion	CU	Use	Priority	Source Description
0	72.45		COM		GW

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

4/26/22 9:50 AM

WATER RIGHT  
SUMMARY





# New Mexico Office of the State Engineer

## Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

**Well Tag**    **POD Number****Q64 Q16 Q4 Sec Tws Rng****X****Y**

C 02432

4 4 4 17 24S 33E 633175 3564728\* **Driller License:** 421**Driller Company:** GLENN'S WATER WELL SERVICE**Driller Name:** GLENN'S**Drill Start Date:** 01/01/1960**Drill Finish Date:** 12/31/1980**Plug Date:****Log File Date:****PCW Rcv Date:****Source:** Shallow**Pump Type:****Pipe Discharge Size:****Estimated Yield:** 45 GPM**Casing Size:** 8.63**Depth Well:** 640 feet**Depth Water:** 415 feet**Meter Number:** 528**Meter Make:** MASTER METER**Meter Serial Number:** 8108569**Meter Multiplier:** 100.0000**Number of Dials:** 6**Meter Type:** Diversion**Unit of Measure:** Gallons**Return Flow Percent:****Usage Multiplier:****Reading Frequency:****Meter Readings (in Acre-Feet)**

Read Date	Year	Mtr Reading	Flag	Rdr	Comment	Mtr Amount Online
04/02/1999	1999	429983	A	ms		0
07/20/1999	1999	441212	A	ms		3.446
01/10/2000	1999	465865	A	ms		7.566
05/05/2000	2000	493371	A	MB		8.441
07/06/2000	2000	510777	A	mb		5.342
10/25/2000	2000	537056	A	RPT		8.065
01/04/2001	2000	549310	A	RPT		3.761
04/01/2001	2001	563939	A	RPT		4.489
07/01/2001	2001	588803	A	RPT		7.630
10/05/2001	2001	612849	A	RPT		7.379
04/01/2002	2002	628808	A	mb		4.898
07/02/2002	2002	640806	A	rm		3.682
01/01/2003	2002	673376	A	RPT		9.995
04/01/2003	2003	705268	A	RPT		9.787
07/01/2003	2003	734401	A	ms		8.941
10/02/2003	2003	762917	A	ab		8.751
01/01/2004	2003	0	A	RPT		0
04/04/2004	2004	25787	A	RPT		7.914
05/03/2004	2004	37140	A	RPT		3.484
07/01/2004	2004	46017	A	RPT		2.724
10/04/2004	2004	71203	A	tw		7.729
01/03/2005	2004	98442	A	RPT		8.359
04/05/2005	2005	119629	A	RPT		6.502
07/01/2005	2005	131350	A	RPT		3.597
10/31/2005	2005	156528	A	RPT		7.727

12/31/2005	2005	165377	A	RPT	2.716
04/20/2006	2006	188908	A	RPT	7.221
07/08/2006	2006	211579	A	tw	6.957
10/02/2006	2006	245367	A	tw	10.369
01/01/2007	2006	278174	A	tw	10.068
04/03/2007	2007	295238	A	RPT	5.237
07/31/2007	2007	320315	A	RPT	7.696
10/28/2007	2007	338944	A	RPT	5.717
01/01/2008	2007	349450	A	RPT	3.224
04/16/2008	2008	365097	A	RPT	4.802
07/01/2008	2008	376318	A	RPT	3.444
10/03/2008	2008	390925	A	RPT	4.483
12/31/2008	2008	398444	A	RPT	2.307
04/01/2009	2009	423153	A	RPT	7.583
07/05/2009	2009	445158	A	RPT	6.753
10/05/2009	2009	476217	A	RPT	9.532
01/01/2010	2009	505764	A	RPT	9.068
04/04/2010	2010	544670	A	RPT	11.940
07/01/2010	2010	582670	A	RPT	11.662
10/01/2010	2010	620466	A	RPT	11.599
12/31/2010	2010	657824	A	RPT	11.465
04/01/2011	2011	695667	A	RPT	11.614
07/01/2011	2011	734205	A	RPT	11.827
10/08/2011	2011	761224	A	RPT	8.292
12/31/2011	2011	761224	A	RPT	0
04/01/2012	2012	29491	R	RPT Meter Rollover	82.328
07/02/2012	2012	55070	A	RPT	7.850
10/02/2012	2012	87882	A	RPT	10.070
01/01/2013	2012	17048	R	RPT Meter Rollover	285.151
04/03/2013	2013	44937	A	tw	8.559
07/01/2013	2013	380373	A	RPT	102.942
10/03/2013	2013	484052	A	RPT	31.818
12/31/2013	2013	534762	A	RPT	15.562
04/01/2014	2014	214597	A	RPT	0
07/01/2014	2014	251793	A	RPT	11.415
10/03/2014	2014	290268	A	RPT	11.808
01/07/2015	2014	324620	A	RPT	10.542
04/05/2015	2015	356478	A	RPT	9.777
07/01/2015	2015	381833	A	RPT	7.781
10/02/2015	2015	411581	A	RPT	9.129
12/31/2015	2015	441025	A	RPT	9.036
04/01/2016	2016	472458	A	RPT	9.646
07/01/2016	2016	496193	A	RPT	7.284
10/01/2016	2016	524760	A	RPT	8.767
01/01/2017	2016	550385	A	RPT	7.864

---

**\*\*YTD Meter Amounts:**    **Year**                      **Amount**  
    1999                      11.012  
    2000                      25.609  
    2001                      19.498  
    2002                      18.575

2003	27.479
2004	30.210
2005	20.542
2006	34.615
2007	21.874
2008	15.036
2009	32.936
2010	46.666
2011	31.733
2012	385.399
2013	158.881
2014	33.765
2015	35.723
2016	33.561

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x

**\*UTM location was derived from PLSS - see Help**

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

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POINT OF DIVERSION SUMMARY



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## National Water Information System: Web Interface

USGS Water Resources (Cooperator Access) Data Category: Site Information Geographic Area: United States

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- [Full News](#) 

## USGS 321236103350101 24S.33E.17.444414

Available data for this site

### Well Site

#### DESCRIPTION:

Latitude 32°12'36", Longitude 103°35'01" NAD27  
Lea County, New Mexico , Hydrologic Unit 13070007  
Well depth: not determined.  
Land surface altitude: 3,573 feet above NAVD88.  
Well completed in "Other aquifers" (N9999OTHER) national aquifer.  
Well completed in "Ogallala Formation" (121OGLL) local aquifer

#### AVAILABLE DATA:

Data Type	Begin Date	End Date	Count
<a href="#">Field groundwater-level measurements</a>	1986-03-11	1986-03-11	1
<a href="#">Revisions</a>	Unavailable (site:0) (timeseries:0)		

#### OPERATION:

Record for this site is maintained by the USGS New Mexico Water Science Center  
Email questions about this site to [New Mexico Water Science Center Water-Data Inquiries](#)

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**Title: NWIS Site Information for USA: Site Inventory**

**URL: [https://waterdata.usgs.gov/nwis/inventory?](https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321236103350101)**

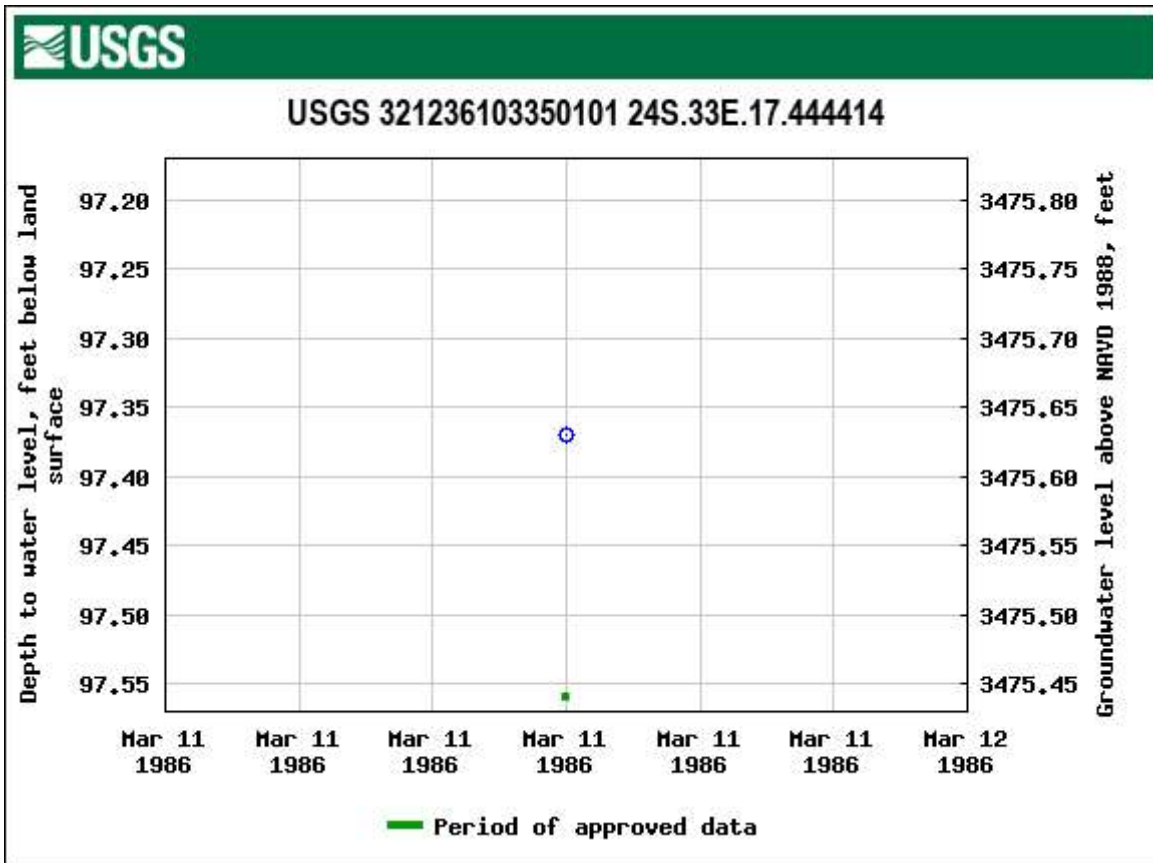
**[agency\\_code=USGS&site\\_no=321236103350101](https://waterdata.usgs.gov/nwis/inventory?agency_code=USGS&site_no=321236103350101)**



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

Page Last Modified: 2022-04-19 13:22:24 EDT

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ATTACHMENT 2: LITHOLOGIC/SAMPLING LOG



WSP USA  
508 West Stevens Street  
Carlsbad, New Mexico 88220

BH or PH Name:

HA-1-N

Date:

2/10/2022

Site Name: Thistle Scrubber

RP or Incident Number:

WSP Job Number:

**LITHOLOGIC / SOIL SAMPLING LOG**

Logged By: AC

Method: Hand Auger

Lat/Long:

Field Screening:

Chloride, PID

Hole Diameter: 0.5'

Total Depth: 1'

Comments: all chloride field screenings contain a correction factor of 40%

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining
M	<168	116.1	N	HA-1-N	1	1	SP	
							TD @1	SAND, dark brown, poorly graded, medium grained, strong odor, no staining





WSP USA  
508 West Stevens Street  
Carlsbad, New Mexico 88220

BH or PH Name:

HA-2-S

Date:

2/10/2022

Site Name: Thistle Scrubber

RP or Incident Number:

WSP Job Number:

### LITHOLOGIC / SOIL SAMPLING LOG

Lat/Long:

Field Screening:

Chloride, PID

Logged By: AC


Method: Hand Auger


Hole Diameter: 0.5'

Total Depth: 1'

Comments: all chloride field screenings contain a correction factor of 40%

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining
D	168	157.1	N	HA-2-S	1	1	SP	
							TD @1	SAND, dark brown, poorly graded, medium grained, strong odor, no staining

 <p>WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220</p>					BH or PH Name:		Date:		
					HA-3-N		2/10/2022		
					Site Name: Thistle Scrubber				
					RP or Incident Number:				
WSP Job Number:									
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>						Logged By: AC		Method: Hand Auger	
Lat/Long:			Field Screening: Chloride, PID			Hole Diameter: 0.5'		Total Depth: 3'	
Comments: all chloride field screenings contain a correction factor of 40%									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks	
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining	
M	<168	15,000	N	HA-3-N	1	1	SP	SAND, dark brown, poorly graded, medium grained, strong odor, no staining	
M	<168	15,000	N	HA-3-NA	3	3	<u>TD@3</u>	SAA (Auger Refusal)	

 <b>WSP USA</b> 508 West Stevens Street Carlsbad, New Mexico 88220					BH or PH Name:		Date:		
					HA-4-C		2/10/2022		
					Site Name: Thistle Scrubber				
					RP or Incident Number:				
WSP Job Number:									
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>						Logged By: AC		Method: Hand Auger	
Lat/Long:			Field Screening: Chloride, PID			Hole Diameter: 0.5'		Total Depth: 1'	
Comments: all chloride field screenings contain a correction factor of 40%									
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks	
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining	
M	<168	519.1	N	HA-4-C	1	1	SP		
							TD @1	SAND, dark brown, poorly graded, medium grained, strong odor, no staining	



WSP USA  
508 West Stevens Street  
Carlsbad, New Mexico 88220

BH or PH Name:

HA-5-S

Date:

2/10/2022

Site Name: Thistle Scrubber

RP or Incident Number:

WSP Job Number:

**LITHOLOGIC / SOIL SAMPLING LOG**

Logged By: AC

Method: Hand Auger

Lat/Long:

Field Screening:

Chloride, PID

Hole Diameter: 0.5'

Total Depth: 1'

Comments: all chloride field screenings contain a correction factor of 40%

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining
D	1,775	87.8	N	HA-5-S	1	1	SP	
							TD @1	SAND, dark brown, poorly graded, medium grained, strong odor, no staining



WSP USA

508 West Stevens Street  
Carlsbad, New Mexico 88220

BH or PH Name:

HA-6-N

Date:

2/10/2022

Site Name: Thistle Scrubber

RP or Incident Number:

WSP Job Number:

## LITHOLOGIC / SOIL SAMPLING LOG

Logged By: AC

Method: Hand Auger

Lat/Long:

Field Screening:


Hole Diameter: 0.5'

Total Depth: 1'

Chloride, PID

Comments: all chloride field screenings contain a correction factor of 40%

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining
M	<168	217.8	N	HA-6-N	1	1	SP	
							TD @1	SAND, dark brown, poorly graded, medium grained, strong odor, no staining

 <p>WSP USA 508 West Stevens Street Carlsbad, New Mexico 88220</p>		BH or PH Name:		Date:				
		HA-7-S		2/10/2022				
		Site Name: Thistle Scrubber						
		RP or Incident Number:						
WSP Job Number:								
<b>LITHOLOGIC / SOIL SAMPLING LOG</b>								
Lat/Long:		Field Screening:		Hole Diameter: 0.5'				
		Chloride, PID		Total Depth: 1'				
Comments: all chloride field screenings contain a correction factor of 40%								
Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample #	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithology/Remarks
					0	0	CCHE	Caliche, tan/light brown, granular, faint odor smell, no staining
D	<168	43.5	N	HA-7-S	1	1	SP	
							TD @1	SAND, dark brown, poorly graded, medium grained, moderate odor, no staining

ATTACHMENT 3: PHOTOGRAPHIC LOG



**PHOTOGRAPHIC LOG**

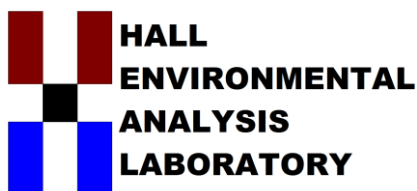
<b>Lucid Energy Delaware, LLC</b>	<b>Thistle Compressor Station Lea County, New Mexico</b>	<b>NAPP2136138685</b>
---------------------------------------	--	-----------------------

<b>Photo No.</b>	<b>Date</b>	
1	April 22, 2022	
North Facing Photo		A photograph showing a large, deep, rectangular excavation pit in the foreground, filled with reddish-brown soil. In the background, there is industrial equipment including large white storage tanks, pipes, and a yellow and orange tank. The ground is dry and dusty.

<b>Photo No.</b>	<b>Date</b>	
2	April 21, 2022	
South Facing Photo		A photograph showing a large, deep, rectangular excavation pit in the foreground, filled with reddish-brown soil. In the background, there is industrial equipment including large white storage tanks, pipes, and a yellow and orange tank. The ground is dry and dusty.



ATTACHMENT 4: LABORATORY ANALYTICAL RESULTS



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

May 10, 2022

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

RE: Thistle Station Scrubber

OrderNo.: 2204B45

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/27/2022 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](http://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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a white background.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2204B45

Date Reported: 5/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SS01 @ 0.5'

Project: Thistle Station Scrubber

Collection Date: 4/21/2022 9:26:00 AM

Lab ID: 2204B45-001

Matrix: SOIL

Received Date: 4/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	74	9.8		mg/Kg	1	5/2/2022 9:00:32 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/2/2022 9:00:32 PM
Surr: DNOP	60.2	51.1-141		%Rec	1	5/2/2022 9:00:32 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/29/2022 11:56:02 PM
Surr: BFB	97.3	37.7-212		%Rec	1	4/29/2022 11:56:02 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	4/29/2022 11:56:02 PM
Toluene	ND	0.046		mg/Kg	1	4/29/2022 11:56:02 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/29/2022 11:56:02 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/29/2022 11:56:02 PM
Surr: 4-Bromofluorobenzene	99.0	70-130		%Rec	1	4/29/2022 11:56:02 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	5/3/2022 2:31:51 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2204B45

Date Reported: 5/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SS02 @ 0.5'

Project: Thistle Station Scrubber

Collection Date: 4/21/2022 9:24:00 AM

Lab ID: 2204B45-002

Matrix: SOIL

Received Date: 4/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>ED</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/2/2022 9:24:58 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/2/2022 9:24:58 PM
Surr: DNOP	52.8	51.1-141		%Rec	1	5/2/2022 9:24:58 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/30/2022 12:19:29 AM
Surr: BFB	100	37.7-212		%Rec	1	4/30/2022 12:19:29 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	4/30/2022 12:19:29 AM
Toluene	ND	0.048		mg/Kg	1	4/30/2022 12:19:29 AM
Ethylbenzene	ND	0.048		mg/Kg	1	4/30/2022 12:19:29 AM
Xylenes, Total	ND	0.096		mg/Kg	1	4/30/2022 12:19:29 AM
Surr: 4-Bromofluorobenzene	97.9	70-130		%Rec	1	4/30/2022 12:19:29 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	170	60		mg/Kg	20	5/3/2022 2:19:31 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 2 of 10

## Analytical Report

Lab Order 2204B45

Date Reported: 5/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SS03 @ 0.5'

Project: Thistle Station Scrubber

Collection Date: 4/21/2022 9:28:00 AM

Lab ID: 2204B45-003

Matrix: SOIL

Received Date: 4/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	89	9.5		mg/Kg	1	5/6/2022 2:28:09 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/6/2022 2:28:09 PM
Surr: DNOP	98.8	51.1-141		%Rec	1	5/6/2022 2:28:09 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/30/2022 12:43:01 AM
Surr: BFB	97.8	37.7-212		%Rec	1	4/30/2022 12:43:01 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	4/30/2022 12:43:01 AM
Toluene	ND	0.046		mg/Kg	1	4/30/2022 12:43:01 AM
Ethylbenzene	ND	0.046		mg/Kg	1	4/30/2022 12:43:01 AM
Xylenes, Total	ND	0.092		mg/Kg	1	4/30/2022 12:43:01 AM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	4/30/2022 12:43:01 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>NAI</b>
Chloride	ND	60		mg/Kg	20	5/3/2022 2:44:12 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 3 of 10

## Analytical Report

Lab Order 2204B45

Date Reported: 5/10/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: SS04 @ 0.5'

Project: Thistle Station Scrubber

Collection Date: 4/21/2022 9:29:00 AM

Lab ID: 2204B45-004

Matrix: SOIL

Received Date: 4/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	8.7		mg/Kg	1	5/2/2022 12:08:40 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	5/2/2022 12:08:40 PM
Surr: DNOP	94.0	51.1-141		%Rec	1	5/2/2022 12:08:40 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/30/2022 1:53:52 AM
Surr: BFB	95.0	37.7-212		%Rec	1	4/30/2022 1:53:52 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	4/30/2022 1:53:52 AM
Toluene	ND	0.050		mg/Kg	1	4/30/2022 1:53:52 AM
Ethylbenzene	ND	0.050		mg/Kg	1	4/30/2022 1:53:52 AM
Xylenes, Total	ND	0.10		mg/Kg	1	4/30/2022 1:53:52 AM
Surr: 4-Bromofluorobenzene	96.2	70-130		%Rec	1	4/30/2022 1:53:52 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: NAI
Chloride	ND	61		mg/Kg	20	5/3/2022 2:56:33 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	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2204B45

10-May-22

Client: Lucid Energy

Project: Thistle Station Scrubber

Sample ID: <b>MB-67219</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67219</b>	RunNo: <b>87695</b>								
Prep Date: <b>5/3/2022</b>	Analysis Date: <b>5/3/2022</b>	SeqNo: <b>3106788</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-67219</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67219</b>	RunNo: <b>87695</b>								
Prep Date: <b>5/3/2022</b>	Analysis Date: <b>5/3/2022</b>	SeqNo: <b>3106789</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.4	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B45

10-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>MB-67164</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67164</b>	RunNo: <b>87649</b>								
Prep Date: <b>4/29/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3103102</b> Units: <b>mg/Kg</b>								
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	9.0		10.00		89.8	51.1	141			

Sample ID: <b>LCS-67164</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67164</b>	RunNo: <b>87649</b>								
Prep Date: <b>4/29/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3103103</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.6	68.9	135			
Surr: DNOP	3.2		5.000		63.2	51.1	141			

Sample ID: <b>LCS-67161</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67161</b>	RunNo: <b>87671</b>								
Prep Date: <b>4/29/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3104293</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.2	68.9	135			
Surr: DNOP	4.2		5.000		83.7	51.1	141			

Sample ID: <b>MB-67161</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67161</b>	RunNo: <b>87671</b>								
Prep Date: <b>4/29/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3104296</b> Units: <b>mg/Kg</b>								
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	9.5		10.00		95.1	51.1	141			

Sample ID: <b>LCS-67284</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67284</b>	RunNo: <b>87806</b>								
Prep Date: <b>5/5/2022</b>	Analysis Date: <b>5/6/2022</b>	SeqNo: <b>3110667</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	61	10	50.00	0	122	68.9	135			
Surr: DNOP	5.1		5.000		103	51.1	141			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B45

10-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>MB-67284</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67284</b>	RunNo: <b>87806</b>								
Prep Date: <b>5/5/2022</b>	Analysis Date: <b>5/6/2022</b>	SeqNo: <b>3110668</b> Units: <b>mg/Kg</b>								
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	11		10.00		109	51.1	141			

Sample ID: <b>MB-67284</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67284</b>	RunNo: <b>87807</b>								
Prep Date: <b>5/5/2022</b>	Analysis Date: <b>5/6/2022</b>	SeqNo: <b>3111863</b> Units: <b>mg/Kg</b>								
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	12		10.00		123	51.1	141			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B45

10-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>mb-67128</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>67128</b>			RunNo: <b>87621</b>						
Prep Date: <b>4/27/2022</b>	Analysis Date: <b>4/29/2022</b>			SeqNo: <b>3102446</b>		Units: <b>mg/Kg</b>				
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		103	37.7	212			

Sample ID: <b>lcs-67128</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>67128</b>			RunNo: <b>87621</b>						
Prep Date: <b>4/27/2022</b>	Analysis Date: <b>4/29/2022</b>			SeqNo: <b>3102447</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	72.3	137			
Surr: BFB	2100		1000		213	37.7	212			S

Sample ID: <b>mb-67147</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>67147</b>			RunNo: <b>87621</b>						
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>			SeqNo: <b>3102469</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		93.9	37.7	212			

Sample ID: <b>lcs-67147</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>67147</b>			RunNo: <b>87621</b>						
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>			SeqNo: <b>3102470</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.8	72.3	137			
Surr: BFB	2000		1000		204	37.7	212			

Sample ID: <b>2204b45-004ams</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>SS04 @ 0.5'</b>	Batch ID: <b>67147</b>			RunNo: <b>87621</b>						
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>			SeqNo: <b>3102472</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.78	0	110	70	130			
Surr: BFB	2100		991.1		213	37.7	212			S

Sample ID: <b>2204b45-004amsd</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>SS04 @ 0.5'</b>	Batch ID: <b>67147</b>			RunNo: <b>87621</b>						
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>			SeqNo: <b>3102473</b>		Units: <b>mg/Kg</b>				
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	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2204B45

10-May-22

Client: Lucid Energy

Project: Thistle Station Scrubber

Sample ID: 2204b45-004amsd	SampType: MSD			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: SS04 @ 0.5'	Batch ID: 67147			RunNo: 87621						
Prep Date: 4/28/2022	Analysis Date: 4/30/2022			SeqNo: 3102473			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	24.80	0	107	70	130	2.11	20	
Surr: BFB	2100		992.1		212	37.7	212	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 Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B45

10-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>mb-67128</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>67128</b>		RunNo: <b>87621</b>							
Prep Date: <b>4/27/2022</b>	Analysis Date: <b>4/29/2022</b>		SeqNo: <b>3102505</b>		Units: <b>mg/Kg</b>					
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		99.5	70	130			

Sample ID: <b>LCS-67128</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>67128</b>		RunNo: <b>87621</b>							
Prep Date: <b>4/27/2022</b>	Analysis Date: <b>4/29/2022</b>		SeqNo: <b>3102506</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	81.4	80	120			
Toluene	0.86	0.050	1.000	0	86.3	80	120			
Ethylbenzene	0.87	0.050	1.000	0	86.7	80	120			
Xylenes, Total	2.6	0.10	3.000	0	87.3	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

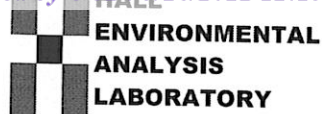
Sample ID: <b>mb-67147</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>67147</b>		RunNo: <b>87621</b>							
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>		SeqNo: <b>3102528</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	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	0.96		1.000		95.8	70	130			

Sample ID: <b>LCS-67147</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>67147</b>		RunNo: <b>87621</b>							
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>		SeqNo: <b>3102529</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	80	120			
Toluene	0.94	0.050	1.000	0	93.9	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.1	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



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

Work Order Number: 2204B45

RcptNo: 1

Received By: Juan Rojas

4/27/2022 7:10:00 AM

*Juan Rojas*

Completed By: Tracy Casarrubias

4/27/2022 9:35:10 AM

Reviewed By:

*Tracy/27/22*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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
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: *KPC 4/27/22*

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:

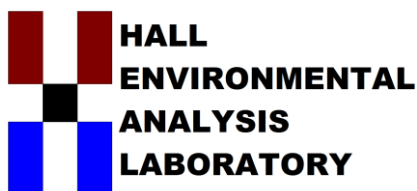
16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Yes			
2	5.2	Good	Yes			







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

December 21, 2021

Michael Gant  
Lucid Energy  
201 South 4th St.  
Artesia, NM 88210  
TEL:  
FAX:

RE: Thistle

OrderNo.: 2112A17

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/16/2021 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](http://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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2112A17

Date Reported: 12/21/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-1-N-0.5'

Project: Thistle

Collection Date: 12/13/2021 10:30:00 AM

Lab ID: 2112A17-001

Matrix: SOIL

Received Date: 12/16/2021 7:52:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	18000	2000		mg/Kg	200	12/20/2021 12:11:27 PM
Motor Oil Range Organics (MRO)	ND	9800	D	mg/Kg	200	12/20/2021 12:11:27 PM
Surr: DNOP	0	70-130	S	%Rec	200	12/20/2021 12:11:27 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: mb
Gasoline Range Organics (GRO)	3800	97		mg/Kg	20	12/17/2021 10:43:00 AM
Surr: BFB	352	70-130	S	%Rec	20	12/17/2021 10:43:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: mb
Benzene	11	0.48		mg/Kg	20	12/17/2021 10:43:00 AM
Toluene	190	4.8		mg/Kg	100	12/18/2021 7:20:00 AM
Ethylbenzene	47	0.97		mg/Kg	20	12/17/2021 10:43:00 AM
Xylenes, Total	340	9.7		mg/Kg	100	12/18/2021 7:20:00 AM
Surr: 4-Bromofluorobenzene	157	70-130	S	%Rec	20	12/17/2021 10:43:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Chloride	1800	60		mg/Kg	20	12/17/2021 12:32:32 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 1 of 10



## Analytical Report

Lab Order 2112A17

Date Reported: 12/21/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-2-S-0.5'

Project: Thistle

Collection Date: 12/13/2021 10:35:00 AM

Lab ID: 2112A17-002

Matrix: SOIL

Received Date: 12/16/2021 7:52:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	31	9.4		mg/Kg	1	12/20/2021 10:56:57 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/20/2021 10:56:57 AM
Surr: DNOP	104	70-130		%Rec	1	12/20/2021 10:56:57 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: mb
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	12/17/2021 11:03:00 AM
Surr: BFB	112	70-130		%Rec	5	12/17/2021 11:03:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: mb
Benzene	ND	0.12		mg/Kg	5	12/17/2021 11:03:00 AM
Toluene	ND	0.23		mg/Kg	5	12/17/2021 11:03:00 AM
Ethylbenzene	ND	0.23		mg/Kg	5	12/17/2021 11:03:00 AM
Xylenes, Total	ND	0.47		mg/Kg	5	12/17/2021 11:03:00 AM
Surr: 4-Bromofluorobenzene	87.8	70-130		%Rec	5	12/17/2021 11:03:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Chloride	1800	60		mg/Kg	20	12/17/2021 12:44:56 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2112A17

Date Reported: 12/21/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-3-N-0.5'

Project: Thistle

Collection Date: 12/15/2021 11:00:00 AM

Lab ID: 2112A17-003

Matrix: SOIL

Received Date: 12/16/2021 7:52:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	11000	180		mg/Kg	20	12/20/2021 11:39:31 AM
Motor Oil Range Organics (MRO)	1100	920		mg/Kg	20	12/20/2021 11:39:31 AM
Surr: DNOP	0	70-130	S	%Rec	20	12/20/2021 11:39:31 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: mb
Gasoline Range Organics (GRO)	3400	96		mg/Kg	20	12/17/2021 11:22:00 AM
Surr: BFB	320	70-130	S	%Rec	20	12/17/2021 11:22:00 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: mb
Benzene	5.1	0.48		mg/Kg	20	12/17/2021 11:22:00 AM
Toluene	150	4.8		mg/Kg	100	12/18/2021 7:58:00 AM
Ethylbenzene	43	0.96		mg/Kg	20	12/17/2021 11:22:00 AM
Xylenes, Total	250	1.9		mg/Kg	20	12/17/2021 11:22:00 AM
Surr: 4-Bromofluorobenzene	144	70-130	S	%Rec	20	12/17/2021 11:22:00 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Chloride	ND	60		mg/Kg	20	12/17/2021 12:57:21 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2112A17

Date Reported: 12/21/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-4-C-0.5'

Project: Thistle

Collection Date: 12/15/2021 11:15:00 AM

Lab ID: 2112A17-004

Matrix: SOIL

Received Date: 12/16/2021 7:52:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	58	9.9		mg/Kg	1	12/20/2021 12:43:21 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/20/2021 12:43:21 PM
Surr: DNOP	103	70-130		%Rec	1	12/20/2021 12:43:21 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: mb
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	12/17/2021 12:41:00 PM
Surr: BFB	101	70-130		%Rec	5	12/17/2021 12:41:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: mb
Benzene	ND	0.12		mg/Kg	5	12/17/2021 12:41:00 PM
Toluene	ND	0.24		mg/Kg	5	12/17/2021 12:41:00 PM
Ethylbenzene	ND	0.24		mg/Kg	5	12/17/2021 12:41:00 PM
Xylenes, Total	ND	0.49		mg/Kg	5	12/17/2021 12:41:00 PM
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	5	12/17/2021 12:41:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Chloride	940	61		mg/Kg	20	12/17/2021 1:09:45 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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2112A17

Date Reported: 12/21/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-5-S-0.5'

Project: Thistle

Collection Date: 12/15/2021 11:20:00 AM

Lab ID: 2112A17-005

Matrix: SOIL

Received Date: 12/16/2021 7:52:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/20/2021 12:54:00 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/20/2021 12:54:00 PM
Surr: DNOP	118	70-130		%Rec	1	12/20/2021 12:54:00 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: mb
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/17/2021 1:00:00 PM
Surr: BFB	84.7	70-130		%Rec	1	12/17/2021 1:00:00 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: mb
Benzene	ND	0.024		mg/Kg	1	12/17/2021 1:00:00 PM
Toluene	ND	0.048		mg/Kg	1	12/17/2021 1:00:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/17/2021 1:00:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/17/2021 1:00:00 PM
Surr: 4-Bromofluorobenzene	76.3	70-130		%Rec	1	12/17/2021 1:00:00 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: JMT
Chloride	ND	60		mg/Kg	20	12/17/2021 1:22:10 PM

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

<b>Qualifiers:</b>	*	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 5 of 10

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112A17

21-Dec-21

**Client:** Lucid Energy**Project:** Thistle

Sample ID: <b>MB-64590</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64590</b>	RunNo: <b>84636</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/17/2021</b>	SeqNo: <b>2976320</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-64590</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64590</b>	RunNo: <b>84636</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/17/2021</b>	SeqNo: <b>2976321</b>	Units: <b>mg/Kg</b>							
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			

**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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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

Page 6 of 10

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2112A17

21-Dec-21

**Client:** Lucid Energy**Project:** Thistle

Sample ID: <b>MB-64569</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64569</b>	RunNo: <b>84661</b>								
Prep Date: <b>12/16/2021</b>	Analysis Date: <b>12/20/2021</b>	SeqNo: <b>2976994</b> Units: <b>mg/Kg</b>								
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	8.9		10.00		88.5	70	130			

Sample ID: <b>MB-64570</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64570</b>	RunNo: <b>84661</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/20/2021</b>	SeqNo: <b>2976995</b> Units: <b>mg/Kg</b>								
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	9.7		10.00		97.5	70	130			

Sample ID: <b>LCS-64569</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64569</b>	RunNo: <b>84661</b>								
Prep Date: <b>12/16/2021</b>	Analysis Date: <b>12/20/2021</b>	SeqNo: <b>2976996</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.4	68.9	135			
Surr: DNOP	4.2		5.000		84.2	70	130			

Sample ID: <b>LCS-64570</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64570</b>	RunNo: <b>84661</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/20/2021</b>	SeqNo: <b>2976997</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.5	68.9	135			
Surr: DNOP	5.6		5.000		112	70	130			

Sample ID: <b>2112A17-004AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>HA-4-C-0.5'</b>	Batch ID: <b>64570</b>	RunNo: <b>84661</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/20/2021</b>	SeqNo: <b>2977548</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	99	9.7	48.50	57.93	84.7	39.3	155			
Surr: DNOP	4.6		4.850		95.6	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2112A17  
21-Dec-21

Client: Lucid Energy  
Project: Thistle

Sample ID: 2112A17-004AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: HA-4-C-0.5'		Batch ID: 64570		RunNo: 84661						
Prep Date: 12/17/2021		Analysis Date: 12/20/2021		SeqNo: 2977550		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	76	9.6	48.12	57.93	37.3	39.3	155	26.5	23.4	RS
Surr: DNOP	4.3		4.812		90.1	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 Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference
- 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#: 2112A17

21-Dec-21

**Client:** Lucid Energy**Project:** Thistle

Sample ID: <b>mb-64559</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64559</b>	RunNo: <b>84642</b>								
Prep Date: <b>12/16/2021</b>	Analysis Date: <b>12/17/2021</b>	SeqNo: <b>2975677</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		89.9	70	130			

Sample ID: <b>lcs-64559</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64559</b>	RunNo: <b>84642</b>								
Prep Date: <b>12/16/2021</b>	Analysis Date: <b>12/17/2021</b>	SeqNo: <b>2975679</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	78.6	131			
Surr: BFB	1000		1000		99.6	70	130			

Sample ID: <b>mb-64595</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>64595</b>	RunNo: <b>84644</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/18/2021</b>	SeqNo: <b>2975896</b>			Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		96.3	70	130			

Sample ID: <b>lcs-64595</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>64595</b>	RunNo: <b>84644</b>								
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/18/2021</b>	SeqNo: <b>2975898</b>			Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		119	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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#: 2112A17

21-Dec-21

**Client:** Lucid Energy**Project:** Thistle

Sample ID: <b>mb-64559</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>64559</b>		RunNo: <b>84642</b>							
Prep Date: <b>12/16/2021</b>	Analysis Date: <b>12/17/2021</b>		SeqNo: <b>2975725</b>		Units: <b>mg/Kg</b>					
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	0.79		1.000		79.4	70	130			

Sample ID: <b>lcs-64559</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>64559</b>		RunNo: <b>84642</b>							
Prep Date: <b>12/16/2021</b>	Analysis Date: <b>12/17/2021</b>		SeqNo: <b>2975727</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.7	80	120			
Toluene	0.89	0.050	1.000	0	88.9	80	120			
Ethylbenzene	0.88	0.050	1.000	0	88.4	80	120			
Xylenes, Total	2.6	0.10	3.000	0	86.2	80	120			
Surr: 4-Bromofluorobenzene	0.85		1.000		85.0	70	130			

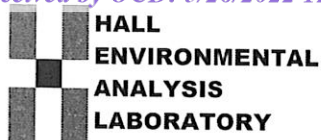
Sample ID: <b>mb-64595</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>64595</b>		RunNo: <b>84644</b>							
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/18/2021</b>		SeqNo: <b>2975944</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.88		1.000		87.5	70	130			

Sample ID: <b>lcs-64595</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>64595</b>		RunNo: <b>84644</b>							
Prep Date: <b>12/17/2021</b>	Analysis Date: <b>12/18/2021</b>		SeqNo: <b>2975946</b>		Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		96.9	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: clients.hallenvironmental.com

## Sample Log-In Check List

Client Name: **Lucid Energy**Work Order Number: **2112A17**RcptNo: **1**Received By: **Cheyenne Cason** 12/16/2021 7:52:00 AMCompleted By: **Desiree Dominguez** 12/16/2021 8:41:59 AMReviewed By: **KPC 12/16/21**

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

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? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted? \_\_\_\_\_

Checked by: **gn 12/16/21**

### 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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good				

## Chain-of-Custody Record

Client: Lucid Energy

Mailing Address: on file

Phone #: 314-330-7876

email or Fax#: mgant@lucid-energy.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 48 hrs

☐ Standard ☒ Rush

Project Name: Histyle

Project #: \_\_\_\_\_

Project Manager: Michael Gant

Sampler: MG

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CP): 1.8 - 0.1 = 1.7 (°C)

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.
12/13	1030	S	HA.1.N.O.S'	402 Soil Ice		2112A17 -001
12/13	1035		HA.2.S.O.S'			-002
12/15	1100		HA.3.N.O.S'			-003
1	1115		HA.4.C.O.S'			-004
1	1120		HA.5.S.O.S'			-005



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

TPH:8015D(GRO / DRO / MRO)	
8081 Pesticides/8082 PCB's	
EDB (Method 504.1)	
PAHs by 8310 or 8270SIMS	
RCRA 8 Metals	
Cl <sup>-</sup> , F <sup>-</sup> , Br <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup>	
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

BTEX / MTBE / TMB's (8021)	X
TPH:8015D(GRO / DRO / MRO)	X
8081 Pesticides/8082 PCB's	
EDB (Method 504.1)	
PAHs by 8310 or 8270SIMS	
RCRA 8 Metals	
Cl <sup>-</sup> , F <sup>-</sup> , Br <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , NO <sub>2</sub> <sup>-</sup> , PO <sub>4</sub> <sup>3-</sup> , SO <sub>4</sub> <sup>2-</sup>	X
8260 (VOA)	
8270 (Semi-VOA)	
Total Coliform (Present/Absent)	

Remarks:

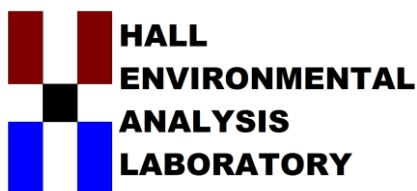
Received by: Amurino Date: 12/15/21 Time: 1232

Relinquished by: [Signature]

Date: 12/15/21 Time: 1100

Relinquished by: Amurino

Core case: 12/16/21 - 0752



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

January 21, 2022

Michael Gant  
Lucid Energy  
201 South 4th St.  
Artesia, NM 88210  
TEL:  
FAX:

RE: Thistle Scrubber

OrderNo.: 2201614

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 2 sample(s) on 1/15/2022 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](http://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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



## Analytical Report

Lab Order 2201614

Date Reported: 1/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-6-N-0.5

Project: Thistle Scrubber

Collection Date: 1/13/2022 1:07:00 PM

Lab ID: 2201614-001

Matrix: SOIL

Received Date: 1/15/2022 8:11:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	360	9.7		mg/Kg	1	1/18/2022 7:04:49 PM
Motor Oil Range Organics (MRO)	78	49		mg/Kg	1	1/18/2022 7:04:49 PM
Surr: DNOP	81.8	51.1-141		%Rec	1	1/18/2022 7:04:49 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	12	4.9		mg/Kg	1	1/18/2022 4:04:31 AM
Surr: BFB	173	70-130	S	%Rec	1	1/18/2022 4:04:31 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	1/18/2022 4:04:31 AM
Toluene	ND	0.049		mg/Kg	1	1/18/2022 4:04:31 AM
Ethylbenzene	ND	0.049		mg/Kg	1	1/18/2022 4:04:31 AM
Xylenes, Total	0.22	0.098		mg/Kg	1	1/18/2022 4:04:31 AM
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	1/18/2022 4:04:31 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LRN</b>
Chloride	ND	60		mg/Kg	20	1/19/2022 4:34:48 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 1 of 6

## Analytical Report

Lab Order 2201614

Date Reported: 1/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: HA-7-S-0.5

Project: Thistle Scrubber

Collection Date: 1/13/2022 1:15:00 PM

Lab ID: 2201614-002

Matrix: SOIL

Received Date: 1/15/2022 8:11:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>SB</b>
Diesel Range Organics (DRO)	93	9.8		mg/Kg	1	1/18/2022 7:16:57 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/18/2022 7:16:57 PM
Surr: DNOP	71.7	51.1-141		%Rec	1	1/18/2022 7:16:57 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/18/2022 4:50:48 AM
Surr: BFB	95.7	70-130		%Rec	1	1/18/2022 4:50:48 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	1/18/2022 4:50:48 AM
Toluene	ND	0.050		mg/Kg	1	1/18/2022 4:50:48 AM
Ethylbenzene	ND	0.050		mg/Kg	1	1/18/2022 4:50:48 AM
Xylenes, Total	ND	0.099		mg/Kg	1	1/18/2022 4:50:48 AM
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	1/18/2022 4:50:48 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>LRN</b>
Chloride	1200	60		mg/Kg	20	1/19/2022 4:47:12 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2201614

21-Jan-22

**Client:** Lucid Energy  
**Project:** Thistle Scrubber

Sample ID: <b>MB-65099</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65099</b>	RunNo: <b>85259</b>								
Prep Date: <b>1/19/2022</b>	Analysis Date: <b>1/19/2022</b>	SeqNo: <b>3000107</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-65099</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65099</b>	RunNo: <b>85259</b>								
Prep Date: <b>1/19/2022</b>	Analysis Date: <b>1/19/2022</b>	SeqNo: <b>3000108</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 3 of 6

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2201614

21-Jan-22

**Client:** Lucid Energy  
**Project:** Thistle Scrubber

Sample ID: <b>MB-65052</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65052</b>	RunNo: <b>85221</b>								
Prep Date: <b>1/17/2022</b>	Analysis Date: <b>1/18/2022</b>	SeqNo: <b>2999687</b> Units: <b>mg/Kg</b>								
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	8.7		10.00		87.4	51.1	141			

Sample ID: <b>MB-65032</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65032</b>	RunNo: <b>85221</b>								
Prep Date: <b>1/14/2022</b>	Analysis Date: <b>1/18/2022</b>	SeqNo: <b>2999688</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.4		10.00		83.9	51.1	141			

Sample ID: <b>LCS-65052</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65052</b>	RunNo: <b>85221</b>								
Prep Date: <b>1/17/2022</b>	Analysis Date: <b>1/18/2022</b>	SeqNo: <b>2999689</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.1	68.9	135			
Surr: DNOP	4.2		5.000		84.0	51.1	141			

Sample ID: <b>LCS-65032</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65032</b>	RunNo: <b>85221</b>								
Prep Date: <b>1/14/2022</b>	Analysis Date: <b>1/18/2022</b>	SeqNo: <b>2999690</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		84.5	51.1	141			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2201614

21-Jan-22

**Client:** Lucid Energy  
**Project:** Thistle Scrubber

Sample ID: <b>mb-65023</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>65023</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/14/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997544</b>	Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		102	70	130			

Sample ID: <b>lcs-65023</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>65023</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/14/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997545</b>	Units: <b>%Rec</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		107	70	130			

Sample ID: <b>mb-65045</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>PBS</b>	Batch ID: <b>65045</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/15/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997568</b>	Units: <b>mg/Kg</b>					
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		98.2	70	130			

Sample ID: <b>lcs-65045</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015D: Gasoline Range</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>65045</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/15/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997569</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.3	78.6	131			
Surr: BFB	1100		1000		108	70	130			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2201614

21-Jan-22

**Client:** Lucid Energy  
**Project:** Thistle Scrubber

Sample ID: <b>mb-65023</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>65023</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/14/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997591</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		112	70	130			

Sample ID: <b>LCS-65023</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>65023</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/14/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997592</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		111	70	130			

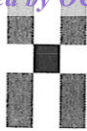
Sample ID: <b>mb-65045</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>65045</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/15/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997612</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	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	1.1		1.000		109	70	130			

Sample ID: <b>LCS-65045</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>65045</b>			RunNo: <b>85208</b>						
Prep Date: <b>1/15/2022</b>	Analysis Date: <b>1/17/2022</b>			SeqNo: <b>2997613</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	70	130			

**Qualifiers:**

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Estimated value
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 Quantitative Limit	RL Reporting Limit
S % Recovery outside of range due to dilution or matrix interference	

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**HALL  
ENVIRONMENTAL  
ANALYSIS  
LABORATORY**

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

## Sample Log-In Check List

Client Name: Lucid Energy

Work Order Number: 2201614

RcptNo: 1

Received By: Cheyenne Cason 1/15/2022 8:11:00 AM

Completed By: Cheyenne Cason 1/15/2022 8:37:58 AM

Reviewed By: vp 1/15/22

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
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: CNC 1/15/22

### 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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Not Present			







## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-2224-1

Laboratory Sample Delivery Group: 31403665.02

Client Project/Site: Thistle Scrubber

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Travis Casey

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
4/22/2022 3:18:20 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)

#### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Laboratory Job ID: 890-2224-1  
SDG: 31403665.02

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## Qualifiers

## GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

Job ID: 890-2224-1

Laboratory: Eurofins Carlsbad

Narrative	
	Job Narrative 890-2224-1

Receipt

The samples were received on 4/21/2022 1:19 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 24.4°C

GC Semi VOA

Method 8015MOD\_NM: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 880-23958 and analytical batch 880-23996 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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## Client Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## Client Sample ID: FS01

## Lab Sample ID: 890-2224-1

Date Collected: 04/21/22 10:11

Matrix: Solid

Date Received: 04/21/22 13:19

Sample Depth: 0.5

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			04/22/22 16:07	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 13:49	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 13:49	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 13:49	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	80		70 - 130			04/21/22 15:30	04/22/22 13:49	1
o-Terphenyl	93		70 - 130			04/21/22 15:30	04/22/22 13:49	1

## Client Sample ID: FS02

## Lab Sample ID: 890-2224-2

Date Collected: 04/21/22 10:15

Matrix: Solid

Date Received: 04/21/22 13:19

Sample Depth: 0.5

## Method: 8015 NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total TPH	<50.0	U	50.0	mg/Kg			04/22/22 16:07	1

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 14:11	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 14:11	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 14:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	85		70 - 130			04/21/22 15:30	04/22/22 14:11	1
o-Terphenyl	98		70 - 130			04/21/22 15:30	04/22/22 14:11	1

Eurofins Carlsbad

## Surrogate Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO1 (70-130)	OTPH1 (70-130)
880-13950-A-1-E MS	Matrix Spike	73	77
880-13950-A-1-F MSD	Matrix Spike Duplicate	74	80
890-2224-1	FS01	80	93
890-2224-2	FS02	85	98
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	1CO2 (70-130)	OTPH2 (70-130)
LCS 880-23958/2-A	Lab Control Sample	84	99
LCSD 880-23958/3-A	Lab Control Sample Dup	95	117
MB 880-23958/1-A	Method Blank	81	99
<b>Surrogate Legend</b>			
1CO = 1-Chlorooctane			
OTPH = o-Terphenyl			

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## Method: 8015B NM - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 880-23958/1-A

Matrix: Solid

Analysis Batch: 23996

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23958

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)-C6-C10	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 11:21	1
Diesel Range Organics (Over C10-C28)	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 11:21	1
Oil Range Organics (Over C28-C36)	<50.0	U	50.0	mg/Kg		04/21/22 15:30	04/22/22 11:21	1
Surrogate	%Recovery	MB Qualifier	Limits			Prepared	Analyzed	Dil Fac
1-Chlorooctane	81		70 - 130			04/21/22 15:30	04/22/22 11:21	1
o-Terphenyl	99		70 - 130			04/21/22 15:30	04/22/22 11:21	1

Lab Sample ID: LCS 880-23958/2-A

Matrix: Solid

Analysis Batch: 23996

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23958

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	1000	977.3		mg/Kg		98	70 - 130
Diesel Range Organics (Over C10-C28)	1000	755.3		mg/Kg		76	70 - 130
Surrogate	%Recovery	LCS Qualifier	Limits				
1-Chlorooctane	84		70 - 130				
o-Terphenyl	99		70 - 130				

Lab Sample ID: LCSD 880-23958/3-A

Matrix: Solid

Analysis Batch: 23996

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23958

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	1000	1002		mg/Kg		100	70 - 130	3	20
Diesel Range Organics (Over C10-C28)	1000	829.6		mg/Kg		83	70 - 130	9	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
1-Chlorooctane	95		70 - 130						
o-Terphenyl	117		70 - 130						

Lab Sample ID: 880-13950-A-1-E MS

Matrix: Solid

Analysis Batch: 23996

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23958

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	1053		mg/Kg		104	70 - 130
Diesel Range Organics (Over C10-C28)	49.9	F1	999	617.6	F1	mg/Kg		57	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## Method: 8015B NM - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 880-13950-A-1-E MS

Matrix: Solid

Analysis Batch: 23996

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23958

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	73		70 - 130
o-Terphenyl	77		70 - 130

Lab Sample ID: 880-13950-A-1-F MSD

Matrix: Solid

Analysis Batch: 23996

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23958

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (GRO)-C6-C10	<49.9	U	999	1105		mg/Kg		109	70 - 130	5	20
Diesel Range Organics (Over C10-C28)	49.9	F1	999	642.2	F1	mg/Kg		59	70 - 130	4	20

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1-Chlorooctane	74		70 - 130
o-Terphenyl	80		70 - 130

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## GC Semi VOA

## Prep Batch: 23958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Total/NA	Solid	8015NM Prep	
890-2224-2	FS02	Total/NA	Solid	8015NM Prep	
MB 880-23958/1-A	Method Blank	Total/NA	Solid	8015NM Prep	
LCS 880-23958/2-A	Lab Control Sample	Total/NA	Solid	8015NM Prep	
LCSD 880-23958/3-A	Lab Control Sample Dup	Total/NA	Solid	8015NM Prep	
880-13950-A-1-E MS	Matrix Spike	Total/NA	Solid	8015NM Prep	
880-13950-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015NM Prep	

## Analysis Batch: 23996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Total/NA	Solid	8015B NM	23958
890-2224-2	FS02	Total/NA	Solid	8015B NM	23958
MB 880-23958/1-A	Method Blank	Total/NA	Solid	8015B NM	23958
LCS 880-23958/2-A	Lab Control Sample	Total/NA	Solid	8015B NM	23958
LCSD 880-23958/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B NM	23958
880-13950-A-1-E MS	Matrix Spike	Total/NA	Solid	8015B NM	23958
880-13950-A-1-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B NM	23958

## Analysis Batch: 24063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Total/NA	Solid	8015 NM	
890-2224-2	FS02	Total/NA	Solid	8015 NM	

## Lab Chronicle

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

## Client Sample ID: FS01

Date Collected: 04/21/22 10:11

Date Received: 04/21/22 13:19

## Lab Sample ID: 890-2224-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			24063	04/22/22 16:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.01 g	10 mL	23958	04/21/22 15:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23996	04/22/22 13:49	AJ	XEN MID

## Client Sample ID: FS02

Date Collected: 04/21/22 10:15

Date Received: 04/21/22 13:19

## Lab Sample ID: 890-2224-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015 NM		1			24063	04/22/22 16:07	AJ	XEN MID
Total/NA	Prep	8015NM Prep			10.00 g	10 mL	23958	04/21/22 15:30	DM	XEN MID
Total/NA	Analysis	8015B NM		1			23996	04/22/22 14:11	AJ	XEN MID

## Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015 NM		Solid	Total TPH

Method Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

Method	Method Description	Protocol	Laboratory
8015 NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015B NM	Diesel Range Organics (DRO) (GC)	SW846	XEN MID
8015NM Prep	Microextraction	SW846	XEN MID

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440



Sample Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-1  
SDG: 31403665.02

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2224-1	FS01	Solid	04/21/22 10:11	04/21/22 13:19	0.5
890-2224-2	FS02	Solid	04/21/22 10:15	04/21/22 13:19	0.5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3334  
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296  
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 233-3927  
Hobbs, NM (575-392-7550)

## Chain of Custody

**Work Order No.:**

Project Manager:		Travis L. Casey	Bill to: (if different)	
Company Name:		WSP USA	Company Name:	
Address:		508 West Stevens Street.	Address:	
City, State ZIP:		Carlsbad ,NM 88220	City, State ZIP:	
Phone:	575-689-5549	Email:	TRAVIS.CASEY@WSP.COM	

<b>Work Order Comments</b>				
Program: <b>UST/ST</b> <input type="checkbox"/> <b>BRP</b> <input type="checkbox"/> <b>Brownfields</b> <input type="checkbox"/> <b>RC</b> <input type="checkbox"/> <b>Superfund</b> <input type="checkbox"/>				
State of Project:				
Reporting Level II	<input type="checkbox"/> Level III	<input type="checkbox"/> ST/UST	<input type="checkbox"/> BRP	<input type="checkbox"/> Level IV
Deliverables: EDD	<input type="checkbox"/>	Adapt	<input type="checkbox"/>	Other:

[illegible]

**Notice:** Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Total 200.7 / 6010		200.8 / 6020:		8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn															
Circle Method(s) and Metal(s) to be analyzed				TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U															
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.																			
Relinquished by: (Signature)		Received by: (Signature)		Date/Time		Relinquished by: (Signature)		Received by: (Signature)		Date/Time									
J. P. ...		C. ...		4.21.22 13:19															
				4															
				6															

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2224-1

SDG Number: 31403665.02

Login Number: 2224

List Number: 1

Creator: Olivas, Nathaniel

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2224-1

SDG Number: 31403665.02

Login Number: 2224

List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 04/22/22 11:15 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



## Environment Testing America

### ANALYTICAL REPORT

Eurofins Carlsbad  
1089 N Canal St.  
Carlsbad, NM 88220  
Tel: (575)988-3199

Laboratory Job ID: 890-2224-2

Laboratory Sample Delivery Group: 31403665.02

Client Project/Site: Thistle Scrubber

For:

WSP USA Inc.  
2777 N. Stemmons Freeway  
Suite 1600  
Dallas, Texas 75207

Attn: Travis Casey

A handwritten signature in black ink that reads "Jessica Kramer".

Authorized for release by:  
4/25/2022 1:23:46 PM

Jessica Kramer, Project Manager  
(432)704-5440  
[Jessica.Kramer@et.eurofinsus.com](mailto:Jessica.Kramer@et.eurofinsus.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Laboratory Job ID: 890-2224-2  
SDG: 31403665.02

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## Definitions/Glossary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

## Qualifiers

## GC VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
U	Indicates the analyte was analyzed for but not detected.

## HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
SQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

## Case Narrative

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

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**Job ID: 890-2224-2**

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**Laboratory: Eurofins Carlsbad**

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**Narrative**

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**Job Narrative**  
**890-2224-2**

**Receipt**

The samples were received on 4/21/2022 1:19 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 24.4°C

**GC VOA**

Method 8021B: The laboratory control sample (LCS) associated with preparation batch 880-23952 and analytical batch 880-23985 was outside acceptance criteria. Re-extraction and/or re-analysis could not be performed; therefore, the data have been reported. The batch matrix spike/matrix spike duplicate (MS/MSD) was within acceptance limits and may be used to evaluate matrix performance.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

**HPLC/IC**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



## Client Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

Client Sample ID: FS01

Lab Sample ID: 890-2224-1

Date Collected: 04/21/22 10:11

Matrix: Solid

Date Received: 04/21/22 13:19

Sample Depth: 0.5

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U **	0.00200	mg/Kg		04/21/22 15:11	04/22/22 13:10	1
Toluene	<0.00200	U **	0.00200	mg/Kg		04/21/22 15:11	04/22/22 13:10	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/21/22 15:11	04/22/22 13:10	1
m-Xylene & p-Xylene	<0.00399	U	0.00399	mg/Kg		04/21/22 15:11	04/22/22 13:10	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/21/22 15:11	04/22/22 13:10	1
Xylenes, Total	<0.00399	U	0.00399	mg/Kg		04/21/22 15:11	04/22/22 13:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	04/21/22 15:11	04/22/22 13:10	1
1,4-Difluorobenzene (Surr)	86		70 - 130	04/21/22 15:11	04/22/22 13:10	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00399	U	0.00399	mg/Kg			04/22/22 16:47	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.83		5.03	mg/Kg			04/22/22 15:16	1

Client Sample ID: FS02

Lab Sample ID: 890-2224-2

Date Collected: 04/21/22 10:15

Matrix: Solid

Date Received: 04/21/22 13:19

Sample Depth: 0.5

## Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00198	U **	0.00198	mg/Kg		04/21/22 15:11	04/22/22 13:31	1
Toluene	<0.00198	U **	0.00198	mg/Kg		04/21/22 15:11	04/22/22 13:31	1
Ethylbenzene	<0.00198	U	0.00198	mg/Kg		04/21/22 15:11	04/22/22 13:31	1
m-Xylene & p-Xylene	<0.00397	U	0.00397	mg/Kg		04/21/22 15:11	04/22/22 13:31	1
o-Xylene	<0.00198	U	0.00198	mg/Kg		04/21/22 15:11	04/22/22 13:31	1
Xylenes, Total	<0.00397	U	0.00397	mg/Kg		04/21/22 15:11	04/22/22 13:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		70 - 130	04/21/22 15:11	04/22/22 13:31	1
1,4-Difluorobenzene (Surr)	98		70 - 130	04/21/22 15:11	04/22/22 13:31	1

## Method: Total BTEX - Total BTEX Calculation

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total BTEX	<0.00397	U	0.00397	mg/Kg			04/22/22 16:47	1

## Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	127		4.97	mg/Kg			04/22/22 15:25	1

Eurofins Carlsbad

Surrogate Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

Method: 8021B - Volatile Organic Compounds (GC)  
Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	BFB1 (70-130)	DFBZ1 (70-130)
880-13764-A-1-C MS	Matrix Spike	106	102
880-13764-A-1-D MSD	Matrix Spike Duplicate	106	101
890-2224-1	FS01	100	86
890-2224-2	FS02	106	98
LCS 880-23952/1-A	Lab Control Sample	104	101
LCSD 880-23952/2-A	Lab Control Sample Dup	102	102
MB 880-23952/5-A	Method Blank	100	92
Surrogate Legend			
BFB = 4-Bromofluorobenzene (Surr)			
DFBZ = 1,4-Difluorobenzene (Surr)			

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

## Method: 8021B - Volatile Organic Compounds (GC)

Lab Sample ID: MB 880-23952/5-A

Matrix: Solid

Analysis Batch: 23985

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 23952

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00200	U	0.00200	mg/Kg		04/21/22 15:11	04/22/22 11:06	1
Toluene	<0.00200	U	0.00200	mg/Kg		04/21/22 15:11	04/22/22 11:06	1
Ethylbenzene	<0.00200	U	0.00200	mg/Kg		04/21/22 15:11	04/22/22 11:06	1
m-Xylene & p-Xylene	<0.00400	U	0.00400	mg/Kg		04/21/22 15:11	04/22/22 11:06	1
o-Xylene	<0.00200	U	0.00200	mg/Kg		04/21/22 15:11	04/22/22 11:06	1
Xylenes, Total	<0.00400	U	0.00400	mg/Kg		04/21/22 15:11	04/22/22 11:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		70 - 130	04/21/22 15:11	04/22/22 11:06	1
1,4-Difluorobenzene (Surr)	92		70 - 130	04/21/22 15:11	04/22/22 11:06	1

Lab Sample ID: LCS 880-23952/1-A

Matrix: Solid

Analysis Batch: 23985

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 23952

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.100	0.1370	*+	mg/Kg		137	70 - 130
Toluene	0.100	0.1259		mg/Kg		126	70 - 130
Ethylbenzene	0.100	0.1132		mg/Kg		113	70 - 130
m-Xylene & p-Xylene	0.200	0.2393		mg/Kg		120	70 - 130
o-Xylene	0.100	0.1128		mg/Kg		113	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

Lab Sample ID: LCSD 880-23952/2-A

Matrix: Solid

Analysis Batch: 23985

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 23952

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	0.100	0.1438	*+	mg/Kg		144	70 - 130	5	35
Toluene	0.100	0.1318	*+	mg/Kg		132	70 - 130	5	35
Ethylbenzene	0.100	0.1180		mg/Kg		118	70 - 130	4	35
m-Xylene & p-Xylene	0.200	0.2482		mg/Kg		124	70 - 130	4	35
o-Xylene	0.100	0.1168		mg/Kg		117	70 - 130	4	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-13764-A-1-C MS

Matrix: Solid

Analysis Batch: 23985

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23952

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.00200	U *	0.0998	0.1170		mg/Kg		117	70 - 130
Toluene	<0.00200	U *	0.0998	0.1059		mg/Kg		106	70 - 130

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

## Method: 8021B - Volatile Organic Compounds (GC) (Continued)

Lab Sample ID: 880-13764-A-1-C MS

Matrix: Solid

Analysis Batch: 23985

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 23952

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ethylbenzene	<0.00200	U	0.0998	0.09431		mg/Kg		94	70 - 130
m-Xylene & p-Xylene	<0.00399	U	0.200	0.1976		mg/Kg		99	70 - 130
o-Xylene	<0.00200	U	0.0998	0.09326		mg/Kg		93	70 - 130

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	102		70 - 130

Lab Sample ID: 880-13764-A-1-D MSD

Matrix: Solid

Analysis Batch: 23985

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 23952

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	<0.00200	U *	0.0994	0.1258		mg/Kg		127	70 - 130	7	35
Toluene	<0.00200	U *	0.0994	0.1161		mg/Kg		117	70 - 130	9	35
Ethylbenzene	<0.00200	U	0.0994	0.1024		mg/Kg		103	70 - 130	8	35
m-Xylene & p-Xylene	<0.00399	U	0.199	0.2153		mg/Kg		108	70 - 130	9	35
o-Xylene	<0.00200	U	0.0994	0.1016		mg/Kg		102	70 - 130	9	35

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	106		70 - 130
1,4-Difluorobenzene (Surr)	101		70 - 130

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 880-24041/1-A

Matrix: Solid

Analysis Batch: 24042

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00	U	5.00	mg/Kg			04/22/22 11:35	1

Lab Sample ID: LCS 880-24041/2-A

Matrix: Solid

Analysis Batch: 24042

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	250	270.3		mg/Kg		108	90 - 110

Lab Sample ID: LCSD 880-24041/3-A

Matrix: Solid

Analysis Batch: 24042

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	250	256.2		mg/Kg		102	90 - 110	5	20

Eurofins Carlsbad

## QC Sample Results

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 880-13935-A-14-E MS

Matrix: Solid

Analysis Batch: 24042

Client Sample ID: Matrix Spike

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	<4.98	U	249	260.7		mg/Kg		103	90 - 110

Lab Sample ID: 880-13935-A-14-F MSD

Matrix: Solid

Analysis Batch: 24042

Client Sample ID: Matrix Spike Duplicate

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<4.98	U	249	261.5		mg/Kg		103	90 - 110	0	20

## QC Association Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

## GC VOA

## Prep Batch: 23952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Total/NA	Solid	5035	
890-2224-2	FS02	Total/NA	Solid	5035	
MB 880-23952/5-A	Method Blank	Total/NA	Solid	5035	
LCS 880-23952/1-A	Lab Control Sample	Total/NA	Solid	5035	
LCSD 880-23952/2-A	Lab Control Sample Dup	Total/NA	Solid	5035	
880-13764-A-1-C MS	Matrix Spike	Total/NA	Solid	5035	
880-13764-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

## Analysis Batch: 23985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Total/NA	Solid	8021B	23952
890-2224-2	FS02	Total/NA	Solid	8021B	23952
MB 880-23952/5-A	Method Blank	Total/NA	Solid	8021B	23952
LCS 880-23952/1-A	Lab Control Sample	Total/NA	Solid	8021B	23952
LCSD 880-23952/2-A	Lab Control Sample Dup	Total/NA	Solid	8021B	23952
880-13764-A-1-C MS	Matrix Spike	Total/NA	Solid	8021B	23952
880-13764-A-1-D MSD	Matrix Spike Duplicate	Total/NA	Solid	8021B	23952

## Analysis Batch: 24071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Total/NA	Solid	Total BTEX	
890-2224-2	FS02	Total/NA	Solid	Total BTEX	

## HPLC/IC

## Leach Batch: 24041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Soluble	Solid	DI Leach	
890-2224-2	FS02	Soluble	Solid	DI Leach	
MB 880-24041/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 880-24041/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 880-24041/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
880-13935-A-14-E MS	Matrix Spike	Soluble	Solid	DI Leach	
880-13935-A-14-F MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

## Analysis Batch: 24042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
890-2224-1	FS01	Soluble	Solid	300.0	24041
890-2224-2	FS02	Soluble	Solid	300.0	24041
MB 880-24041/1-A	Method Blank	Soluble	Solid	300.0	24041
LCS 880-24041/2-A	Lab Control Sample	Soluble	Solid	300.0	24041
LCSD 880-24041/3-A	Lab Control Sample Dup	Soluble	Solid	300.0	24041
880-13935-A-14-E MS	Matrix Spike	Soluble	Solid	300.0	24041
880-13935-A-14-F MSD	Matrix Spike Duplicate	Soluble	Solid	300.0	24041

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Lab Chronicle

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

Client Sample ID: FS01  
Date Collected: 04/21/22 10:11  
Date Received: 04/21/22 13:19

Lab Sample ID: 890-2224-1  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.01 g	5 mL	23952	04/21/22 15:11	MR	XEN MID
Total/NA	Analysis	8021B		1			23985	04/22/22 13:10	AJ	XEN MID
Total/NA	Analysis	Total BTEX		1			24071	04/22/22 16:47	AJ	XEN MID
Soluble	Leach	DI Leach			4.97 g	50 mL	24041	04/22/22 12:02	CH	XEN MID
Soluble	Analysis	300.0		1			24042	04/22/22 15:16	CH	XEN MID

Client Sample ID: FS02  
Date Collected: 04/21/22 10:15  
Date Received: 04/21/22 13:19

Lab Sample ID: 890-2224-2  
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.04 g	5 mL	23952	04/21/22 15:11	MR	XEN MID
Total/NA	Analysis	8021B		1			23985	04/22/22 13:31	AJ	XEN MID
Total/NA	Analysis	Total BTEX		1			24071	04/22/22 16:47	AJ	XEN MID
Soluble	Leach	DI Leach			5.03 g	50 mL	24041	04/22/22 12:02	CH	XEN MID
Soluble	Analysis	300.0		1			24042	04/22/22 15:25	CH	XEN MID

Laboratory References:  
XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Accreditation/Certification Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

Laboratory: Eurofins Midland

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704400-21-22	06-30-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Total BTEX		Solid	Total BTEX



## Method Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	XEN MID
Total BTEX	Total BTEX Calculation	TAL SOP	XEN MID
300.0	Anions, Ion Chromatography	MCAWW	XEN MID
5035	Closed System Purge and Trap	SW846	XEN MID
DI Leach	Deionized Water Leaching Procedure	ASTM	XEN MID

**Protocol References:**

ASTM = ASTM International

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL SOP = TestAmerica Laboratories, Standard Operating Procedure

**Laboratory References:**

XEN MID = Eurofins Midland, 1211 W. Florida Ave, Midland, TX 79701, TEL (432)704-5440

Sample Summary

Client: WSP USA Inc.  
Project/Site: Thistle Scrubber

Job ID: 890-2224-2  
SDG: 31403665.02

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Depth
890-2224-1	FS01	Solid	04/21/22 10:11	04/21/22 13:19	0.5
890-2224-2	FS02	Solid	04/21/22 10:15	04/21/22 13:19	0.5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



## Chain of Custody

**Work Order No.:**

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 505-3334  
Midland, TX (432-704-5440) El Paso, TX (915)585-3443 Lubbock, TX (806)794-1296  
Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)575-392-7550  
Hobbs, NM (575-392-7550)

Page 1 of 1

Project Manager:		Travis L. Casey	Bill to: (if different)	
Company Name:		WSP USA	Company Name:	
Address:		508 West Stevens Street.	Address:	
City, State ZIP:		Carlsbad , NM 88220	City, State ZIP:	
Phone:	575-689-5949	Email:	TRAVIS.CASEY@WSP.COM	

<b>Work Order Comments</b>				
<b>Program: US/ST</b> <input type="checkbox"/> PRP <input type="checkbox"/> Brownfields <input type="checkbox"/> RC <input type="checkbox"/> Superfund <input type="checkbox"/>				
<b>State of Project:</b>				
Reporting Level II <input type="checkbox"/> Level III <input type="checkbox"/> ST/UST <input type="checkbox"/> PRP <input type="checkbox"/> Level IV <input type="checkbox"/>				
Deliverables: EDD <input type="checkbox"/> ADAPT <input type="checkbox"/> Other: <input type="checkbox"/>				

[illegible]

**Notice:** Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

<b>Total 200.7 / 6010</b>	<b>200.8 / 6020:</b>	8RCRA	13PPM	Texas 11	Al	Sb	As	Ba	Be	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	SiO <sub>2</sub>	Na	Sr	Ti	Sn	U	Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>		TCLP / SPLP		6010: 8RCRA	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Ag	Ti	U											
<p><b>Notice:</b> Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.</p>																															
Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time																										
<i>JP BEMMEL</i>	<i>Joe St</i>	4-21-22 13:19																													
		4																													
		6																													

Printed Date: 05/14/28 EOW 2018

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2224-2

SDG Number: 31403665.02

Login Number: 2224

List Number: 1

Creator: Olivas, Nathaniel

List Source: Eurofins Carlsbad

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	

## Login Sample Receipt Checklist

Client: WSP USA Inc.

Job Number: 890-2224-2

SDG Number: 31403665.02

Login Number: 2224

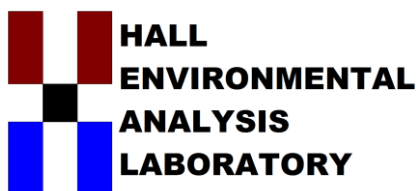
List Number: 2

Creator: Rodriguez, Leticia

List Source: Eurofins Midland

List Creation: 04/22/22 11:15 AM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	



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

May 05, 2022

Michael Gant  
Lucid Energy  
201 South 4th St.  
Artesia, NM 88210  
TEL:  
FAX

RE: Thistle Station Scrubber

OrderNo.: 2204B48

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/27/2022 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](http://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,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2204B48

Date Reported: 5/5/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Lucid Energy

Client Sample ID: FS03 @ 1'

Project: Thistle Station Scrubber

Collection Date: 4/22/2022 9:20:00 AM

Lab ID: 2204B48-001

Matrix: SOIL

Received Date: 4/27/2022 7:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/2/2022 9:16:35 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/2/2022 9:16:35 AM
Surr: DNOP	122	51.1-141		%Rec	1	5/2/2022 9:16:35 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/30/2022 3:04:31 AM
Surr: BFB	97.8	37.7-212		%Rec	1	4/30/2022 3:04:31 AM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	4/30/2022 3:04:31 AM
Toluene	ND	0.049		mg/Kg	1	4/30/2022 3:04:31 AM
Ethylbenzene	ND	0.049		mg/Kg	1	4/30/2022 3:04:31 AM
Xylenes, Total	ND	0.098		mg/Kg	1	4/30/2022 3:04:31 AM
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	4/30/2022 3:04:31 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: CAS
Chloride	ND	60		mg/Kg	20	5/2/2022 12:20:51 PM

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B48

05-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>MB-67189</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67189</b>	RunNo: <b>87650</b>								
Prep Date: <b>5/2/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3104322</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-67189</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67189</b>	RunNo: <b>87650</b>								
Prep Date: <b>5/2/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3104323</b>	Units: <b>mg/Kg</b>							
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.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

Page 2 of 5

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B48

05-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>MB-67164</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67164</b>	RunNo: <b>87649</b>								
Prep Date: <b>4/29/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3103102</b>	Units: <b>mg/Kg</b>							
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	9.0		10.00		89.8	51.1	141			

Sample ID: <b>LCS-67164</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67164</b>	RunNo: <b>87649</b>								
Prep Date: <b>4/29/2022</b>	Analysis Date: <b>5/2/2022</b>	SeqNo: <b>3103103</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.6	68.9	135			
Surr: DNOP	3.2		5.000		63.2	51.1	141			

**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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B48

05-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>mb-67147</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67147</b>	RunNo: <b>87621</b>								
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>	SeqNo: <b>3102469</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	940		1000		93.9	37.7	212			

Sample ID: <b>lcs-67147</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67147</b>	RunNo: <b>87621</b>								
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>	SeqNo: <b>3102470</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.8	72.3	137			
Surr: BFB	2000		1000		204	37.7	212			

**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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2204B48

05-May-22

**Client:** Lucid Energy  
**Project:** Thistle Station Scrubber

Sample ID: <b>mb-67147</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>67147</b>	RunNo: <b>87621</b>								
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>	SeqNo: <b>3102528</b> Units: <b>mg/Kg</b>								
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	0.96		1.000		95.8	70	130			

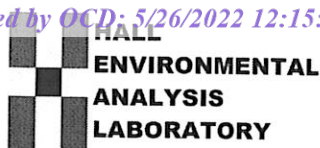
Sample ID: <b>LCS-67147</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>67147</b>	RunNo: <b>87621</b>								
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>	SeqNo: <b>3102529</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.6	80	120			
Toluene	0.94	0.050	1.000	0	93.9	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.1	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	70	130			

Sample ID: <b>2204b48-001ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>FS03 @ 1'</b>	Batch ID: <b>67147</b>	RunNo: <b>87621</b>								
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>	SeqNo: <b>3102532</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9775	0	91.6	68.8	120			
Toluene	0.94	0.049	0.9775	0	96.3	73.6	124			
Ethylbenzene	0.96	0.049	0.9775	0	98.4	72.7	129			
Xylenes, Total	2.9	0.098	2.933	0	98.1	75.7	126			
Surr: 4-Bromofluorobenzene	0.99		0.9775		101	70	130			

Sample ID: <b>2204b48-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>FS03 @ 1'</b>	Batch ID: <b>67147</b>	RunNo: <b>87621</b>								
Prep Date: <b>4/28/2022</b>	Analysis Date: <b>4/30/2022</b>	SeqNo: <b>3102533</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9766	0	89.3	68.8	120	2.62	20	
Toluene	0.93	0.049	0.9766	0	94.8	73.6	124	1.67	20	
Ethylbenzene	0.94	0.049	0.9766	0	95.9	72.7	129	2.70	20	
Xylenes, Total	2.8	0.098	2.930	0	95.4	75.7	126	2.92	20	
Surr: 4-Bromofluorobenzene	0.97		0.9766		99.4	70	130	0	0	

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		



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

Work Order Number: 2204B48

RcptNo: 1

Received By: Juan Rojas

4/27/2022 7:10:00 AM

Completed By: Tracy Casarrubias

4/27/2022 9:51:26 AM

Reviewed By: WPA

4/27/22

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
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: Jm 4/27/22

### 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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Yes			
2	5.2	Good	Yes			



## Chain-of-Custody Record

Client: Lucid Energy Group  
 Michael Gant  
 Mailing Address: 201 S 4th Artesia, NM 88210

Phone #: 575-810-6144

email or Fax#: mgant@lucid-energy.com

QA/QC Package:

☐ Standard

☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Date: 04-22-22  
 Time: 9:20  
 Matrix: S  
 Sample Name: FS03 @ 1'  
 Container Type and #: JAR, 1  
 Preservative Type: N/A  
 Date: 001  
 Cooler Temp (including CF): 5.40-3-5.2  
 HEAL No: 2204B48

Turn-Around Time:

☒ Standard

☒ Rush

Project Name:

Thistle Station Scrubber

Project #:

31403665.021

Project Manager:

Travis Casey

Sampler: Payton Benner

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CF): 5.40-3-5.2

HEAL No: 2204B48

Container Type and #

JAR, 1

Preservative Type

N/A

Date

001

Time

001

Via:

001

Received by:

001

Date

001

Time

001

Via:

001

Received by:

001

Date

001

Time

001

Via:

001

Received by:

001

Date

001

# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

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<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>  
 8260 (VOA)  
 8270 (Semi-VOA)  
 Total Coliform (Present/Absent)

Remarks:

Direct bill to Lucid Energy

Prop # 195211500

Company # 860

Send confirmation and lab report to Travis.Casey@wsp.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.

ATTACHMENT 5: C141 CLOSURE REPORT FORM

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 Compliance Manager

Signature: *MGant* Date: 5/26/2022

email: MGant@lucid-energy.com Telephone: 3143307876

### 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: *Jennifer Nobui* Date: 06/02/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A



**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 111128

CONDITIONS

Operator: LUCID ENERGY DELAWARE, LLC 201 S. Fourth Street Artesia, NM 88210	OGRID: 372422
	Action Number: 111128
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved. Please note that the depth to groundwater has not been adequately determined. When nearby wells are used to determine depth to groundwater, the wells should be no further than ½ mile away from the site, and data should be no more than 25 years old. However, since your confirmation samples were compliant with the most stringent closure criteria, the case can be closed.	6/2/2022